BCA-08-05

VARDHAMAN MAHAVEER OPEN UNIVERSITY, KOTA

Web Authoring Tools

Production : Feb.2011 **ISBN NO.:** 13/978-81-8496-270-3

Printed and published on behalf of Registrar V. M. Open University, Kota.
Printed By : Kanchan Offset Printers, Qty. 500 Book

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Web Authoring Tools

UNIT -I

WORLD WIDE WEB

STRUCTURE OF THE UNIT

1.0 OBJECTIVES

Objective of this unit is to give a brief overview of WWW i.e. World Wide Web. Concept of Web Browser and Web sever is given. Different parts of Web Site like URLs, Domain Names, Portals etc. are discussed. Search Engine their types and functionality and Client Server technique is also described.

1.1 INTRODUCTION

In this unit you will study WWW, its origin, history etc. This unit provides the basic idea of Internet. It gives an overview of how to access a web site, how to search the elements on WWW.

1.2 WORLD WIDE WEB

The **World Wide Web**, abbreviated as **WWW** and commonly known as **Web.** It is a system of interlinked hypertext documents contained on the Internet. With a web browser, one can view web pages that may contain text, images, videos and other multimedia and navigate between the pages by using hyperlinks.

1.2.1 Introduction

The World Wide Web ("WWW" or simply the "Web") is a global information space which people can read and write via computers connected to the Internet. The term is often mistakenly used as a synonym for the Internet itself, but the Web is actually a service that operates over the Internet, just like e-mail. The world wide web is a system of Internet servers that supports hypertext to access several Internet protocols on a single interface. The World Wide Web is often abbreviated as the web or www.

In order for the Web to be accessible to anyone, certain agreed-upon standards must be followed in the creation and delivery of its content. An organization leading the efforts to standardize the Web is the World Wide Web (W3C) Consortium.

The World-Wide Web (W3) was developed to be a pool of human knowledge, which would allow collaborators in remote sites to share their ideas and all aspects of a common project. If two projects are independently created, rather than have a central figure make the changes, the two bodies of information could form into one cohesive piece of work.

The World Wide Web (known as "WWW', "Web" or "W3") is the universe of network-accessible information, the embodiment of human knowledge.

The World Wide Web began as a networked information project at CERN, where Tim Berners-Lee, now Director of the World Wide Web Consortium [W3C], developed a vision of the project.

The Web has a body of software, and a set of protocols and conventions. Through the use hypertext and multimedia techniques, the web is easy for anyone to roam, browse, and contribute to.

1.2.2 History

The origin of the World Wide Web can be traced back to 1980. Since then it has evolved beyond what its creators who imagined it as a file-sharing tool for academic and U.S. government contract researchers. The initial purpose of the Web was to use networked hypertext to facilitate communication among its members, who were located in several countries. World was soon spread beyond CERN, and a rapid growth in the number of both developers and users ensued. In addition to hypertext, the Web began to incorporate graphics, video, and sound. The use of the Web has reached global proportions and has become a defining element of human culture in an amazingly short period of time.

1.2.2.1 1980-91: Development of the WWW

In 1980, Tim Berners-Lee, an independent contractor at CERN, built ENQUIRE, as a personal database of people and software models, but also as a way to play with hypertext; each new page of information in ENQUIRE had to be linked to an existing page.

1.2.2.2 1992-1995: Growth of the WWW

In keeping with its birth at CERN, early adopters of the World Wide Web were primarily university-based scientific departments or physics laboratories such as Fermilab and SLAC. Early websites intermingled links for both the HTTP web protocol and the then-popular Gopher protocol, which provided access to content through hypertext menus presented as a file system rather than through HTML files. Early Web users would navigate either by bookmarking popular

directory pages, such as Berners-Lee's first site at http://info.cern.ch/, or by consulting updated lists such as the NCSA "What's New" page. Some sites were also indexed by WAIS, enabling users to submit full-text searches similar to the capability later provided by search engines.

1.2.2.3 1996-1998: Commercialization of the WWW

By 1996 it became obvious to most publicly traded companies that a public Web presence was no longer optional. Though at first people saw mainly the possibilities of free publishing and instant worldwide information, increasing familiarity with two-way communication over the "Web" led to the possibility of direct Web-based commerce (e-commerce) and instantaneous group communications worldwide. These concepts in turn intrigued many bright, young, often underemployed people (many of Generation X), who realized that new business models would soon arise based on these possibilities and wanted to be among the first to profit from these new models. An annual event started in 1995, the Webby Awards, working to recognize the best websites on the Internet. The event was typically an extravaganza held annually in San Francisco, California, 45 miles north of the heart of Silicon Valley.

1.2.2.4 1999-2001: WWW "Dot-com" boom

The low interest rates in 1998–99 helped increase the start-up capital amounts. Although a number of these new entrepreneurs had realistic plans and administrative ability, most of them lacked these characteristics but were able to sell their ideas to investors because of the novelty of the dot-com concept.
Historically, the dot-com boom can be seen as similar to a number of other technology-inspired booms of the past including railroads in the 1840s, radio in the 1920s, transistor electronics in the 1950s, computer time-sharing in the 1960s, and home computers and biotechnology in the early 1980s.

1.2.2.5 2002-Present: WWW becomes ubiquitous

The success of the Google search engine was mainly due to its PageRank algorithm.In the aftermath of the dot-com bubble, the World Wide Web continued to gain popularity even though many businesses trying to exploit it went bankrupt. These include Google's search engine and relevant advertising scheme, Apple Computer's iTunes web music store and Expedia's web-based travel service.

This era also brought social networking websites to light, that along with iTunes, are today an extensive part of youth culture, such as MySpace, Xanga, Friendster, Facebook, and Orkut.

1.3 CONCEPT OF WEB BROWSER AND SERVER

1.3.1 Browser

Most of us surf the Internet several times a week, if not several times a day. We visit website after website, viewing information, playing games, and occasionally downloading software. We explore the WWW using Web Browsers. Web Browsers are software installed on your PC. To access the Web you need a web browsers, such as Netscape Navigator, Microsoft Internet Explorer or Mozilla Firefox. On the Web, when you navigate through pages of information this is commonly known as web browsing or web surfing.

1.3.1.1 Browser Types and Functionality

There are four leading web browsers: Explorer, FireFox, Netscape and Safari but there are many others browsers available. Now we will see these browsers in bit more detail.

While developing a site, we should try to make it compatible to as many browsers as possible. Specially site should be compatible to major browsers like Explorer, FireFox, Netscape, Opera and Safari.

Internet Explorer

Internet Explorer (IE) is a product from software giant Microsoft. This is the most commonly used browser in the universe. This was introduced in 1995 along with Windows 95 launch and it has passed Netscape popularity in 1998.

Netscape

Netscape is one of the original Web browsers. This is what Microsoft designed Internet Explorer to compete against. Netscape and IE comprise the major portion of the browser market. Netscape was introduced in 1994.

Mozilla

Mozilla is an open-source Web browser, designed for standards compliance, performance and portability. The development and testing of the browser is coordinated by providing discussion forums, software engineering tools, releases and bug tracking. Browsers based on Mozilla code is the second largest browser family on the Internet today, representing about 30% of the Internet community.

Konqueror

Konqueror is an Open Source web browser with HTML 4.01 compliance, supporting Java applets, JavaScript, CSS 1, CSS 2.1, as well as Netscape plugins. This works as a file manager as wellIt supports basic file management on local UNIX filesystems, from simple cut/copy and paste operations to advanced remote and local network file browsing.

Firefox

Firefox is a new browser derived from Mozilla. It was released in 2004 and has grown to be the second most popular browser on the Internet.

Safari

Safari is a web browser developed by Apple Inc. and included in Mac OS X. It was first released as a public beta in January 2003. Safari has very good support for latest technologies like XHTML, CSS2 etc.


Opera

Opera is smaller and faster than most other browsers, yet it is full- featured. Fast, user-friendly, with keyboard interface, multiple windows, zoom functions, and more. Java and non Java-enabled versions available.

Lynx

Lynx is a fully-featured World Wide Web browser for users on Unix, VMS, and other platforms running cursor-addressable, character-cell terminals or emulators.

1.3.2 Web Server

A web server is a computer program that delivers content, such as web pages, using the Hypertext Transfer Protocol (HTTP), over the World Wide Web.

The primary function of a web server is to deliver web pages to clients. This means delivery of HTML documents and any additional content that may be included by a document, such as images, style sheets and JavaScripts.

Web servers are the backbone of the web, since they are responsible for serving up every web page you see. Most people take the Internet for granted. It takes a lot of work to do something as simple as display a web page. When you clicked on the link to view an article, a series of smaller operations are performed where each is small on their own, all fit together to bring you this brilliantly written composition. But how did it work? What actually had to happen to make this text appear in your web browser?

When you type the name of website, your web browser broke the URL into three different pieces.

The first part is the protocol that the web server should communicate with. e.g.the protocol may be "http". This tells the web browser that you wish to communicate with a web server on port 80, which is the port reserved for web page communications.

The second part of the URL is the server address. This tells the web browser which server it needs to contact in order to retrieve the information you are looking for. The web browser communicates with a Domain Name Server (DNS) to find out the IP Address for the website. All communications on the Internet use IP Addresses for communications. The website names that we know and familiar were invented just to make it easier for us to find the websites we need. Imagine if the only way to surf the Internet required that we remember IP Addresses for each site that we visit frequently.

The third part of the URL is the resource you want to see. This may be the name of page/file that you want to see.

The web browser, having found the IP Address it needs by communicating with the name server, then sends a request directly to the web server, using port 80, asking for the particular file e.g. "about.asp". The web server sends the html for this page back to your web browser, which reads the HTML tags and formats them for viewing on your screen. If there are additional files needed in order to show the web page (like some images, for example) the web browser makes additional requests for each of these. It is not uncommon for a single web page request to trigger 5 or more separate file requests from a web server.

1.3.2.1 History

In 1989 Tim Berners-Lee proposed to his employer CERN (European Organization for Nuclear Research) a new project, which had the goal of easing the exchange of information between scientists by using a hypertext system. As a result of the implementation of this project, in 1990 Berners-Lee wrote two programs:

- a browser called WorldWideWeb;
- the world's first web server, later known as CERN httpd, which ran on NeXTSTEP.

Between 1991 and 1994 the simplicity and effectiveness of early technologies used to surf and exchange data through the World Wide Web helped to port them to many different operating systems and spread their use among lots of different social groups of people, first in scientific organizations, then in universities and finally in industry.

In 1994 Tim Berners-Lee decided to constitute the World Wide Web Consortium (W3C) to regulate the further development of the many technologies involved (HTTP, HTML, etc.) through a standardization process.

1.3.2.2 Common features

1. Virtual hosting to serve many Web sites using one IP address.

2. Large file support to be able to serve files whose size is greater than 2 GB on 32 bit OS.

3. Bandwidth throttling to limit the speed of responses in order to not saturate the network and to be able to serve more clients.

4. Server-side scripting to generate dynamic Web pages, but still keeping Web server and Web site implementations separate from each other.

1.3.2.3 Path translation

Web servers are able to map the path component of a Uniform Resource Locator (**URL**) into:

- a local file system resource (for static requests);
- an internal or external program name (for dynamic requests).

For a *static request* the URL path specified by the client is relative to the Web server's root directory.

Consider the following URL as it would be requested by a client:

http://www.example.com/path/file.html

The client's user agent will translate it into a connection to www.example.com with the following HTTP 1.1 request:

GET /path/file.html HTTP/1.1

Host: www.example.com

The Web server on www.example.com will append the given path to the path of its root directory. On Unix machines, this is commonly /var/www. The result is the local file system resource:

/var/www/**path/file.html**

The Web server will then read the file, if it exists, and send a response to the client's Web browser. The response will describe the content of the file and contain the file itself.

Self Learning Exercise

Self Learning Exercises

State True/False

A. URL is acronym of Universal Resource location .

B. An organization leading the efforts to standardize the Web is the World Wide Web (W3C) Consortium.

C. Mozilla is an open-source Web browser, designed for standards compliance, performance and portability.

D. Web servers are the Heart of the web.

Fill in the Blanks

E. WWW is acronym for _____

F. The success of the Google search engine was mainly due to its _____ algorithm.

G. A web server is a computer program that delivers (serves) content, such as web pages, using the _____ over the World Wide Web.

1.4 WEB SITES

A website is a collection of related web pages, images, videos or other digital assets that are addressed relative to a common Uniform Resource Locator (URL), often consisting of only the domain name, or the IP address, and the root path ('/') in an Internet Protocol-based network. A web site is hosted on at least one web server, accessible via a network such as the Internet or a private local area network.

A web page is a document, typically written in plain text interspersed with formatting instructions of Hypertext Markup Language (HTML, XHTML). A web page may incorporate elements from other websites with suitable markup anchors.

1.4.1 URL

The pages of a website can usually be accessed from a simple Uniform Resource Locator (URL) called the homepage. The URLs of the pages organize them into a hierarchy, although hyperlinking between them conveys the reader's perceived site structure and guides the reader's navigation of the site.

1.4.1.1 Parts of the URL:

Consider the following address **http://www.mysite.org/sitemap/index.html**

http Protocol used in the communication between the browser and the web server.

'Protocol' is a set of rules a browser and a web server use to communicate with and understand each other.

: Colon simply separates the protocol from the other part of the web address.

// Indicates that a ***contact to a server*** is to be achieved

www Name of a server listening to messages using the http protocol. Note that this name is not always shown in the URL in the Location Box.

mysite.org Name of the ***domain*** where the web server belongs. Domain is like an address by which you can get to some specific 'area' on the Net. there are probably several server programs in that domain each dedicated to different tasks.

www.mysite.org This part of the URL is actually the ***name of the web server*** seen over the

Internet. In other words, it's the server that hosts the web site of *The New York Public Library*. By using it the request a browser sends can be directed to the right web server.

You may wonder how a request can be directed to the right server if the name is not shown in the URL. In fact, the sequence is such that a request is first directed to the domain and then in the domain the right server is found. In the domain an http request goes to the server that is listening to messages using the http protocol.

/ Indicates the ***root folder*** of the folder system hosted by the web server *www.mysite.org*.

sitemap/ Indicates ***a folder*** in the root folder.

index.html The name of the document file requested.

1.4.2 Domain name

A name that identifies one or more *IP addresses*. For example, the domain name *microsoft.com* represents about a dozen IP addresses. Domain names are used in URLs to identify particular Web pages. For example, in the URL *http://www.pcwebopedia.com/index.html,* the domain name is *pcwebopedia.com.*

Every domain name has a suffix that indicates which top level domain (TLD) it belongs to. There are only a limited number of such domains. For example:

- **gov** - Government agencies
- **edu** - Educational institutions
- **org** - Organizations (nonprofit)
- **mil** - Military
- **com** - commercial business
- **net** - Network organizations
- **ca** - Canada
- **th** - Thailand

Because the Internet is based on IP addresses, not domain names, every Web server requires a Domain Name System (DNS) server to translate domain names into IP addresses.

1.4.3 Portal

Portal is a web site that gathers bits and pieces of information from different sources and makes them available to users of the web.A Web portal or public portal refers to a Web site or service that offers a broad array of resources and services, such as e-mail, forums, search engines, and online shopping malls. The first Web portals were online services, such as AOL, that provided access to the Web, but by now most of the traditional search engines have transformed themselves into Web portals to attract and keep a larger audience.

An enterprise portal is a Web-based interface for users of enterprise applications. Enterprise portals also provide access to enterprise information such as corporate databases, applications (including Web applications), and systems.

Portal is a term, generally synonymous with *gateway*, for a World Wide Web site that is or proposes to be a major starting site for users when they get connected to the Web or that users tend to visit as an anchor site. There are general portals and specialized or niche portals. Some major general portals include Yahoo, Excite, Netscape, Lycos, CNET, Microsoft Network, and America Online's AOL.com.

Examples of niche portals include Garden.com (for gardeners), Fool.com (for investors), and SearchNetworking.com (for network administrators).

Typical services offered by portal sites include a directory of Web sites, a facility to search for other sites, news, weather information, e-mail, stock quotes, phone and map information, and sometimes a community forum. Excite is among the first portals to offer users the ability to create a site that is personalized for individual interests.

1.5 SEARCH ENGINE

Search Engine is a program that searches documents for specified keywords and returns a list of the documents where the keywords were found. Google, Alta Vista and Excite enable users to search for documents on the World Wide Web and USENET newsgroups.

Typically, a search engine works by sending out a spider to fetch as many documents as possible. Another program, called an indexer, then reads these documents and creates an index based on the words contained in each document. Each search engine uses a proprietary algorithm to create its indices such that, ideally, only meaningful results are returned for each query

A web search engine is designed to search for information on the World Wide Web. The search results are usually presented in a list of results and are commonly called hits. The information may consist of web pages, images, information and other types of files. Some search engines also mine data available in databases or open directories. Unlike Web directories, which are maintained by human editors, search engines operate algorithmically or are a mixture of algorithmic and human input.

1.5.1 Searching the web

A search engine operates, in the following order

1. Web crawling
2. Indexing
3. Searching

Web search engines work by storing information about many web pages, which they retrieve from the html itself. These pages are retrieved by a Web crawler (sometimes also known as a spider) — an automated Web browser which follows every link on the site. The contents of each page are then analyzed to determine how it should be indexed (for example, words are extracted from the titles, headings, or special fields called meta tags). Data about web pages are stored in an index database for use in later queries. A query can be a single word. The purpose of an index is to allow information to be found as quickly as possible. Some search engines, such as Google, store all or part of the source page as well as information about the web pages, whereas others, such as AltaVista, store every word of every page they find.

When a user enters a query into a search engine (typically by using key words), the engine examines its index and provides a listing of best-matching web pages according to its criteria, usually with a short summary containing the document's title and sometimes parts of the text. The index is built from the information stored with the data and the method by which the information is indexed. Unfortunately, there are currently no known public search engines that allow documents to be searched by date. Most search engines support the use of the boolean operators AND, OR and NOT to further specify the search query. Boolean operators are for literal searches that allow the user to refine and extend the terms of the search. The engine looks for the words or phrases exactly as entered. There is also concept-based searching where the research involves using statistical analysis on pages

containing the words or phrases you search for. As well, natural language queries allow the user to type a question in the same form one would ask it to a human. A site like this would be ask.com.

The usefulness of a search engine depends on the relevance of the result set it gives back. While there may be millions of web pages that include a particular word or phrase, some pages may be more relevant, popular, or authoritative than others. Most search engines employ methods to rank the results to provide the "best" results first. How a search engine decides which pages are the best matches, and what order the results should be shown in, varies widely from one engine to another. The methods also change over time as Internet usage changes and new techniques evolve

1.5.2 Types of Search Engine

Most people find what they're looking for on the World Wide Web by using search engines like Yahoo!, Alta Vista, or Google. Different companies have different objectives, but the main goal is to obtain good placement in search results.

Every search engine works differently. Not only are there different types of search engines—those that use spiders to obtain results, directory-based engines, and link-based engines—but engines within each category are unique. They each have different rules and procedures companies need to follow in order to register their site with the engine.

There are many kinds of search engine and these include:

1.5.2.1 Spider-Based Search Engines

Many leading search engines use a form of software program called spiders or crawlers to find information on the Internet and store it for search results in giant databases or indexes. Some spiders record every word on a Web site for their respective indexes, while others only report certain keywords listed in title tags or meta tags.

Although they usually aren't visible to someone using a Web browser, meta tags are special codes that provide keywords or Web site descriptions to spiders. Keywords and how they are placed, either within actual Web site content or in meta tags, are very important to online marketers.

Because spiders are unable to index pictures or read text that is contained within graphics, relying too heavily on such elements was a consideration for online marketers.

1.5.2.2 Directory-Based Search Engines

While some sites use spiders to provide results to searchers, others—like Yahoo!—use human editors. This means that a company cannot rely on technology and keywords to obtain excellent placement, but must provide content the editors will find appealing and valuable to searchers. Some directory-based engines charge a fee for a site to be reviewed for potential listing. In the early 2000s, more leading search engines were relying on human editors in combination with findings obtained with spiders. LookSmart, Lycos, AltaVista, MSN, Excite and AOL Search relied on providers of directory data to make their search results more meaningful.

1.5.2.3 Link-Based Search Engines.

One other kind of search engine provides results based on hypertext links between sites. Rather than basing results on keywords or the preferences of human editors, sites are ranked based on the quality and quantity of other Web sites linked to them. In this case, links serve as referrals. The emergence of this kind of search engine called for companies to develop link-building strategies. By finding

out which sites are listed in results for a certain product category in a link-based engine, a company could then contact the sites' owners—assuming they aren't competitors—and ask them for a link. This often involves reciprocal linking, where each company agrees to include links to the other's site.

1.6 CLIENT /SERVER TECHNIQUE

Client/server describes the relationship between two computer programs in which one program, the client, makes a service request from another program, the server, which fulfills the request. Although the client/server idea can be used by programs within a single computer, it is a more important idea in a network. In a network, the client/server model provides a convenient way to interconnect programs that are distributed efficiently across different locations. Computer transactions using the client/ server model are very common. For example, to check your bank account from your computer, a client program in your computer forwards your request to a server program at the bank. That program may in turn forward the request to its own client program that sends a request to a database server at another bank computer to retrieve your account balance. The balance is returned back to the bank data client, which in turn serves it back to the client in your personal computer, which displays the information for you.

In the usual client/server model, one server, sometimes called a daemon, is activated and awaits client requests. Typically, multiple client programs share the services of a common server program. Both client programs and server programs are often part of a larger program or application. Relative to the Internet, your Web browser is a client program that requests services (the sending of Web pages or files) from a Web server (which technically is called a Hypertext Transport Protocol or HTTP server) in another computer somewhere on the Internet. Similarly, your computer with TCP/ IP installed allows you to make client requests for files from File Transfer Protocol (FTP) servers in other computers on the Internet.

Other program relationship models included master/slave, with one program being in charge of all other programs, and peer-to-peer, with either of two programs able to initiate a transaction.

A client, commonly a web browser or web crawler, initiates communication by making a request for a specific resource using HTTP and the server responds with the content of that resource, or an error message if unable to do so. The resource is typically a real file on the server's secondary memory, but this is not necessarily the case and depends on how the web server is implemented.

While the primary function is to serve content, a full implementation of HTTP also includes a way of receiving content from clients. This feature is used for submitting web forms, including uploading of files.

Many generic web servers also support server-side scripting, e.g., Apache HTTP Server and PHP. This means that the behaviour of the web server can be scripted in separate files, while the actual server software remains unchanged. Usually, this functionality is used to create HTML documents on-the-fly as opposed to return fixed documents. This is referred to as dynamic and static content respectively. The former is primarily used for retrieving and/or modifying information in databases. The latter is, however, typically much faster and easily cached.

Self Learning Exercise

Sate True/False

H. Every domain name has a suffix that indicates which top level domain (TLD) it belongs to.

I. A search engine operates, in the following order Web crawling——>Indexing——>3.Searching

J. Spiders can index pictures

K. Client/server describes the relationship between two computer programs in which one program, the client, makes a service request from another program, the server, which fulfills the request.

Fill In the Blanks

L. A website is a collection of related web pages, images, videos or other digital assets that are addressed relative to a common _____

M. _____ is a program that searches documents for specified keywords and returns a list of the documents where the keywords were found.

N. FTP Stands for _____

1.7 SUMMARY

In this unit we have discussed WWW, its origin and history, concept of web browser and web server etc. We have also discussed the different terms like URLs, Portal, Domain name. this unit give a brief overview of working of search engines, it also elaborates the client server techniques.

1.8 Glossary

Portal:A Web Site that gathers bits and pieces of information from different sources and makes them available to users of web.

Search Engine:It is a database of web pages.

Spider:A program that searches web pages on wireless devices.

URL:The address of resource on web.

Web Browser:The user interface of the web. It is an application that enables a user to locate and view resources on web.

Web Directories:Web site that organize the links to other web sites according to subject categories.

Web Site:A set of interconnected web pages displaying related information on a specific subject.

World Wide Web:A collection of numerous web servers or servers connected through the Internet.

World Wide Web Consortium (W3C):An open forum for discussion on the world wide web, created in October 1994.

1.9 FURTHER READINGS

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- Thomno A. Powell, " The Complete References HTML and XHTML", fourth edition, Tata McGraw Hill, 2003

1.10 ANSWER TO SELF LEARNING EXERCISES

Question	Answer	Question	Answer
A	False	H	True
B	True	I	True
C	True	J	False
D	False	K	True
E	World Wide Web	L	Uniform Resource Locator
F	PageRank	M	Search Engine
G	Hypertext Transfer Protocol	N	File Transfer Protocol

1.11 UNIT END QUESTIONS

1. Write short note on
   a. Domain Name
   b. Web Sever
   c. Portal
   d. URL
2. State the difference between Web Server and Web Browser.
3. What are browser explain their types and functionality.
4. What are Search Engines? Describe their searching on web.

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UNIT-II

INTERNET BASICS

STRUCTURE OF THE UNIT

2.0 OBJECTIVES

Objective of this unit is to give a brief overview of Internet elements and the services provided by Internet. The Security and privacy issues of Internet are also discussed here. It also focuses on advantage and disadvantage of Internet.

2.1 INTRODUCTION

We have studied the WWW, its origin, history etc in the last unit. We have also discussed the concept of web server, web browser, URL, search engine and their types.

2.2 ELEMENTS OF WEB DEVELOPMENT

Web elements and processes are interconnected, and decisions that web developers make rely on these interconnections. As such, there is redundancy in the methodology. If any one element or process is weak, another stronger element or process might be able to compensate. A good implementation sometimes can make up for a bad design, for example. A good objective statement can make up for a poor purpose statement. The goal is not to have these weaknesses but to counter the inevitable problems that result. The elements of the web-development methodology follow:

2.2.1 Audience information

It is a store of knowledge about the target audience for the web as well as the actual audience who uses the information. This information includes the audience's background, interests, proclivities, and all detail helpful to shaping the information to suit the users' needs. All this information might not be complete at any time during the web-development process.

2.2.2 Purpose statement

It is an articulation of the reason for and scope of the web's existence. At all times during development, a developer should have a succinct purpose statement for the web. This statement might be in general terms, such as "To create a presence for our company in cyberspace," or it might be very specific, such as "To provide information about our company's new line of modems." This purpose statement itself is dynamic; over time, an organization that started a web to "establish presence in cyberspace" might want to make that web serve another, more specific purpose. A succinct statement of this purpose, however general, serves as a guidepost for the web-development processes.

2.2.3 Objective statement

It Flows from the purpose statement and defines what specific goals the web should accomplish. An objective statement based on the purpose used in the preceding paragraph, "To provide information about our company's new line of modems," might include a statement of the modems the company offers and the kind of information that should be given (pictures, prices, schematics, and so on). Like the audience information and purpose statements, the objective statement is dynamic, and it might become necessary later in web development to define still other statements. Therefore, the objective statement changes as the purpose of the web changes, but also as the information about the audience changes. The audience looking at the modems suddenly might become very concerned about display buttons on the devices themselves, for example. In that case, an objective might be created to include pictures of modems on the web itself.

2.2..4 Domain information

It is a collection of knowledge and information about the subject domain that the web covers, both in terms of information provided to users of the web and information that the web developers need. A web offering modems for sale also might necessarily draw on a variety of information about the use, mechanics, principles, and specifications for modems. Although not all this information would necessarily be made available to the

users of the web, this domain knowledge might be essential for the web developers to have. Often, this domain knowledge makes a good complement to the information the web already offers. A modem manufacturer with a good collection of modem facts, for example, might find that interested buyers visit that web for technical information about modems and, in the course of this visit, are informed of a company's products.

2.2.5 Web specification

It is a detailed description of the constraints and elements that will go into the web. The specification statement lists what pieces of information will be presented as well as any limitations on the presentation. One part of a specification might state that the picture of the modem must be placed on the same hypertext page as a link to an order form, for example. The specification, as with all the other elements of the web, might be in constant flux.

2.2.6 Web presentation

It is a mean by which the information is delivered to the user. The presentation is the result of design and implementation processes that build on the web specification. In these processes, creative choices are made among design and presentation techniques to achieve the web specification; considerations for efficiency, aesthetics, and known web-usage patterns also are made.

This list of the elements involved in the web-development methodology shows that there are many interactions and relationships among them. In fact, all the elements depend on the best information being available about the other elements in order to be successful. A web developer, for example, needs to know whether the objective is to sell modems or to educate people about modems when designing a particular piece of a web. Similarly, the elements interact with the processes of the methodology.

2.3 VIEWING WEB PAGES WITH BROWSER

2.3.1 Using a browser for a mail

Industrial Strength Email can be accessed from any web browser, so you can read and send email even when you're away from your home or office. The first step is to open your website in the browser of your choice.

2.3.1.1 Internet E-Mail Basics

The Internet is a valuable tool for accessing information, but it also opens a whole new world of communications to its users. Using electronic mail (email) a person can engage in conversations with people all over the world. Yet, because of its convenience, it is also a powerful tool for even local communication. With typical telephone communications you may be either interrupted by a call, or may return a call only to find that the other person is not available, an occurrence referred to as "telephone tag." Electronic mail though, sits on the server computer until you are ready to read it, and when you respond it will then wait patiently on the other person's computer until they have time to read it. This is especially valuable for busy teachers, who because of their duties and general working isolation in a classroom with just their students, usually aren't able to communicate with peers on as regular a basis as they would like.

To send an email message to someone you must know his/her email address. An email address is made up of three parts. The user's ID (or username), which comes before an @ sign, the @ sign itself, and the name of the computer where the user receives email. Each computer connected to the Internet has its own unique address. Because of these unique addresses, email can be delivered clear across the world through the Internet, much the same way that giving your street address, town, and postal code allows physical mail to be delivered to you. An example of an email address is:johndoe@some.computer.edu

Every character is important, though upper and lower case do not matter. The ID is to the left of the @ sign. It is often a shortened version of the persons' name, such as their first initial and last name or their first name and last initial. However, many people are allowed to choose their IDs and use nicknames. In some

cases the ID may be generated automatically by the computer and thus be a set of letters and numbers such as ab123. The person's home computer address is to the right of the @ sign and usually has some connection to the site where the user has his/her email account. This computer name is often called the "host" or "domain" name. For instance, a student at State University may have a machine name like state.edu. Users of the America On-Line service have addresses ending in aol.com.

There are some common endings on Internet host names. They include the ones listed below.

edu — usually higher education

.gov — U.S. government entity

.com — commercial organization

.org — organization - usually non-profit

.mil — U.S. military

Two letter endings usually represent specific countries. For example, .au designates Australia, .uk Britain, and .us the USA.

2.3.1.2 Reading E-mail

Reading your email is typically quite simple. Once your mail software is setup correctly all you need to do is open the mail program. While most mail programs automatically check for email when you start them, sometimes you will have to tell it to check. Locate the option to check for new messages under one of the headings on your menu bar.

If you have any messages you should see them listed on the screen or in your "In" box after the program is done downloading the messages. To read the first message, all you usually need to do is hit return. At the top of each message is a header with information about the origin, date, and routing of each message

2.3.1.3 Sending an E-mail Message

Now that you have read your mail you will most likely want to send a message to someone. You will generally have three options for sending a person a message. If you have already received a message from them and you want to respond to their comments, you can use the "reply" button or option, which automatically addresses your message to the sender so that you don't need to type in their email address. Or, if you want to send someone a message from whom you don't have a message, you can choose the "new/compose" button or option to send them an original message. You will need to know their email address and enter it in the To field. And finally, if you want to pass along a message from someone to another person who might be interested in seeing it, you can "forward" a message.

2.3.2 News

Netnews: It is one of the primary ways of communicating with others via the Internet, and particularly to large groups of people with similar interests.

Development in electronic conferencing was rapid and in 1979 Tom Truscott and Steve Bellovin designed a protocol which allowed conferences to be distributed between systems automatically. They called their new network of distributed conferences USENET and today it is the largest set of distributed conferences in the world. Their protocol was so well designed that it is still in use to this very day for distributing newsgroups across the Internet. Newsgroups are a forum where people with common interests can interact with one another.

2.3.3 Chat

Online conversations in which you are immediately able to send messages back and forth to one another is called chat. It is a Real-time communication between two users via computer. Once a chat has been initiated, user can enter text by typing on the keyboard and the entered text will appear on the other user's monitor. Most networks and online services offer a chat feature.

There are three commonly used types of chat. They are Instant Messaging, ICQ, and IRC.

2.3.3.1 Instant Messaging

Instant messaging (IM) is one of the most popular forms of chat. Most of the time, instant messaging (IM'ing) is just between two people, although most IM software can handle group chats (with 3 or more people.) When you first start out IM'ing, you have to choose a name that people see you as. This name is commonly referred to as a nick (as in nickname) and is sometimes called a handle.

2.3.3.2 ICQ ("I seek you")

ICQ is an extremely useful communication program. It allows you to message (chat), send files, send URLs, and more to anyone else with ICQ.

When you download ICQ (which is free) you are assigned an ICQ number. Two or more people using ICQ can have the same nickname, but no two people can have the same ICQ number. If you want to let someone contact you by ICQ, give them both your ICQ# and your nickname, so they won't accidentally contact someone else with the same nickname by mistake.

2.3.3.3 IRC - Internet Relay Chat

Unlike IM and ICQ, IRC (Internet Relay Chat) is not owned by any company. To use IRC, you need an IRC client program. IRC has many networks that are completely separate from one another. Some popular networks include The Undernet, EFnet, and DALnet. If you want to chat with someone on IRC, you need to make sure that both of you are on the same network (you can set it and change it each time your start your IRC program.)

IRC has very few rules. IRC is probably the best way to meet new people. Most people who use IRC are very friendly and helpful.

Once you connect to an IRC network with an IRC client program, there are often thousands of rooms (they are called channels, and all start with a pound sign [#]) on nearly any topic, and tens of thousands of different people to chat with. If you have some free time and you're pretty bored, IRC is an excellent way to have a nice chat.

2.4 SECURITY & PRIVACY

Internet security is not something to be taken lightly. It is an extremely important aspect of your Web site. In the case of online merchants, security and privacy is also a very sensitive subject. You are being entrusted with someone's personal information. You have an obligation — a fiduciary responsibility — to protect the privacy of the site's visitors.

Security and privacy are two major issues that continue to raise concerns with all those involved with the Internet. Stories about Web site hacking and e-mail viruses appear on an almost daily basis. Governments around the world have had to come to grips with a new method of crime: "cyber terrorism". Most of them still don't understand how to deal with it nor do they comprehend the extent of the destruction that can be brought on by cyber terrorists. While the majority of attacks are carried out by amateur hackers, the damage that is done is still real.

The Internet is a different realm than most of us are used to dealing with in our daily lives. It is constantly changing at a rapid pace. What is new in one moment can be literally out-of- date within a matter of hours, sometimes even minutes. This pace has slowed down somewhat recently, but, in many aspects, it still holds

true. One of the things that make it so formidable is that it is always "on" — the Internet never sleeps. Unlike the stock market, which at least shuts down for a few hours a day, the Internet continues to operate. This means that all the Web sites that you design and/or manage are available for visitation on a 24X7 basis. This also makes it vulnerable for attacks on a 24X7 basis.

The following options can provide some help-

1. SecurityTracker

It is a Web site dedicated solely to security vulnerabilities. According to information on the Web site the organization uses automated agents to scan Web sites, e-mail lists, newsgroup feeds. The information is then filtered and categorized using a variety of narrowly defined topics to characterize the vulnerability as specifically as possible. Its goal is to help you to extract just the information you are looking for, without requiring you to search through an excessive amount of often confusing information. It has free weekly e-mail security updates.

2. Microsoft Security Advisor

It is a Web site dedicated solely to security vulnerabilities One area is in tools and checklists. These are excellent tools for setting-up and maintaining security on your Internet and Intranet servers. Bulletins are available as well as several articles covering a variety of security issues.

3. Electronic Privacy Information Center

This site is like a gold mine of information, reports, articles and links for privacy. EPIC also provides the latest in privacy news and developments.

2.4.1 Cookies

A "cookie" is a small piece of information sent by a web server to store on a web browser so it can later be read back from that browser.

Cookies are a very useful tool in maintaining state (persistence) on the Web. Unless something special is done, Web servers are only aware of users when a transaction — sending or receiving information — is in process. The moment the transaction is complete the server forgets about the user and makes no attempt to correlate subsequent transactions with previous exchanges.

These are simply an HTTP header that consists of a text-only string that gets entered into the memory of a browser. This string contains the domain, path, lifetime, and value of a variable that a website sets. If the lifetime of this variable is longer than the time the user spends at that site, then this string is saved to file for future reference. By default, cookies exist until the browser is exited; they disappear when you close the browser.

Users need to know that a Web site can only write and read the cookie for that given Web site. Only if the domain and path attributes match that of the host document.

This is useful for having the browser remember some specific information. An example is when a browser stores your passwords and user ID's, they are also used to store preferences of start pages, both Microsoft and Netscape use cookies to create personal start pages. Common cookies which companies used to find info are lited below:

2.4.1.1 Online Ordering Systems

An online ordering system could be developed using cookies that would remember what a person wants to buy, this way if a person spends three hours ordering CDs at your site and suddenly has to get off the net they could quit the browser and return weeks or even years later and still have those items in their shopping basket.

2.4.1.2 Site Personalization

This is one of the most beneficial uses, let's say a person comes to the MSNBC site but doesn't want to see any sports news. They allow people to select this as an option, from then on (until the cookie expires) they wouldn't see sports news. This is also useful for start pages.

2.4.1.3 Website Tracking

If a web site designer wanted to see what interests them. Site tracking can show you "Dead End Paths", places in your website that people go to and then wander off because they don't have any more interesting links to hit. It can also give you more accurate counts of how many people have been to pages on your site. You could differentiate 50 unique people seeing your site from one person hitting the reload button 50 times.

2.4.1.4 Targeted Marketing

This is probably one of the main uses of cookies, they can be used to build up a profile of where you go what advitisement you click on, this information is then used to target advitisement at you, which they think are of interest, companies also use cookies to store which advitisement have been displayed so the same advitisement does not get displayed twice.

2.4.2 Firewalls

The Internet, like any other society, is plagued with the kind of jerks who enjoy the electronic equivalent of writing on other people's walls with spray paint, tearing their mailboxes off, or just sitting in the street blowing their car horns. Some people try to get real work done over the Internet, and others have sensitive or proprietary data they must protect. Usually, a firewall's purpose is to keep the jerks out of your network while still letting you get your job done.

Many traditional-style corporations and data centers have computing security policies and practices that must be followed. In a case where a company's policies dictate how data must be protected, a firewall is very important, since it is the embodiment of the corporate policy. Frequently, the hardest part of hooking to the Internet, if you're a large company, is not justifying the expense or effort, but convincing management that it's safe to do so. A firewall provides not only real security—it often plays an important role as a security blanket for management.

A firewall is a system or group of systems that enforces an access control policy between two or more networks. The actual means by which this is accomplished varies widely, but in principle, the firewall can be thought of as a pair of mechanisms: one which exists to block traffic, and the other which exists to permit traffic. Some firewalls place a greater emphasis on blocking traffic, while others emphasize permitting traffic. Probably the most important thing to recognize about a firewall is that it implements an access control policy. If you don't have a good idea of what kind of access you want to allow or to deny, a firewall really won't help you. It's also important to recognize that the firewall's configuration, because it is a mechanism for enforcing policy, imposes its policy on everything behind it.

A firewall can act as your corporate ambassador to the Internet. Many corporations use their firewall systems as a place to store public information about corporate products and services, files to download, bug-fixes, and so forth. Several of these systems have become important parts of the Internet service structure and have reflected well on their organizational sponsors

2.4.2.1 What can a firewall protect against?

Some firewalls permit only email traffic through them, thereby protecting the network against any attacks other than attacks against the email service. Other firewalls provide less strict protections, and block services.

Generally, firewalls are configured to protect against unauthenticated interactive logins from the outside world. This helps to prevent vandals from logging into machines on your network. Firewalls block traffic

from the outside to the inside, but permit users on the inside to communicate freely with the outside. The firewall can protect you against any type of network-borne attack if you unplug it.

2.4.2.2 What can't a firewall protect against?

Firewalls can't protect against attacks that don't go through the firewall. In some organizations a magnetic tape, compact disc, DVD, or USB flash drives can just as effectively be used to export data. Organizations that are terrified (at a management level) of Internet connections have no coherent policy about how dial-in access via modems should be protected.

A firewall can't really protect you against is traitors or idiots inside your network. While an industrial spy might export information through your firewall, he's just as likely to export it through a telephone, FAX machine, or Compact Disc. CDs are a far more likely means for information to leak from your organization than a firewall.

Firewalls can't protect against tunneling over most application protocols that are used in poorly written clients.

Self Learning Exercise

State True/False

A. Web elements and processes are interconnected

B. Web specification is a mean by which the information is delivered to the user.

C. The Internet is a valuable tool for accessing information.

D. To send an email message to someone you must know his/her email address.

E. Security tracker is a Web site dedicated solely to security vulnerabilities.

Fill in the Blanks

F. A _____ is a small piece of information sent by a web server to store on a web browser so it can later be read back from that browser.

G A firewall is a system or group of systems that enforces an access control policy between two or more _____.

H. Online conversations in which you are immediately able to send messages back and forth to one another is called _____

I. _____ is dedicated solely to security vulnerabilities

J. _____ is a collection of knowledge and information about the subject domain that the web covers, both in terms of information provided to users of the web and information that the web.

2.5 PLUG-INS

Plug-ins are add-on programs that let you view flashy animations and graphics, fly through virtual 3-D world, create interactive presentations and spreadsheets, and tune in to audio broadcasts on the Web from within Navigator. It is a small add-on piece of software that conforms to Netscape Navigator standard. Navigator plug-ins have to be downloaded and installed. If you go to a web page that contains a file requiring a plug-in that you don't have, you will usually receive a message asking if you want to get the plug-in.

Some examples of Plug-ins are-

1. Flash Player by Macromedia

It provides animation and entertainment on the web with Flash, the web standard for vector graphics and animation.

2. Shockwave by Macromedia

Shockwave Player is the Web standard for entertaining, engaging, rich media playback. It lets you view interactive Web content like games, business presentations, entertainment, and advertisements from your Web browser

3. RealPlayer by RealNetworks

With RealPlayer, you can play real-time audio, video, animations, and multimedia presentations on the web.

4. Net2phone By IDT International

Net2Phone is a new technology which makes it possible to place domestic and international calls from a personal computer to any telephone in the world. Developed by IDT Corporation, a global innovator of telecommunications and Internet services, Net2Phone is by far the most advanced telecommunications application harnessing the global power of the Internet.

5. Quick Time by Apple

QuickTime 4 lets you add over 200 digital media capabilities and components to your Mac or PC

6. Adobe Acrobat Reader by Adobe Systems

Adobe® Acrobat® Reader is free, and freely distributable, software that lets you view and print Portable Document Format (PDF) files. With Acrobat Reader, you also can fill in and submit PDF forms online.

7. HyperStudio

With the HyperStudio Plug-In, anyone using Netscape Navigator can view HyperStudio multimedia projects published over the Internet, complete with images captured digitally, tracks from audio CDs, sound, scrolling text in any font, animations, movies, visual transitions and links to other pages/sites.

8. PowerPoint Animation Player & Publisher

The new Microsoft PowerPoint Animation Player & Publisher provides users with the fastest, easiest way to view and publish PowerPoint animations and presentations in your browser window. Millions of PowerPoint users can now take advantage of the enhanced animation, hyperlinks, sound, and special effects they are familiar with in PowerPoint for Windows 95 to create dynamic, animated Web pages.

9. MPEG Player

1999 will surely be remembered as the year of MP3. When the year began, MP3 was an audio compression technology. By the end of the year, MP3 was a movement and brand that stood for everything new and exciting about the digital music era.

2.6 ACTIVEX CONTROLS

ActiveX control can be automatically downloaded and executed by a Web browser. ActiveX is not a programming language, but rather a set of rules for how applications should share information. Programmers can develop ActiveX controls in a variety of languages, including C, C++, Visual Basic, and Java.

An ActiveX control is similar to a Java applet. Unlike Java applets, however, ActiveX controls have full access to the Windows operating system. This gives them much more power than Java applets, but with this power comes a certain risk that the active X control may damage software or data on your machine. To control this risk, Microsoft developed a registration system so that browsers can identify and authenticate an ActiveX control before downloading it. Another difference between Java applets and ActiveX controls is that Java applets can be written to run on all platforms, whereas ActiveX controls are currently limited to Windows environments.

Related to ActiveX is a scripting language called VBScript that enables Web authors to embed interactive elements in HTML documents

Follow these steps in order for Enabling activeX control in Internet Explorer (6.x/7.x).

1. Open Internet Explorer.
2. Click on Tools then Internet Options.
3. Choose Security Tab.
4. Click on Custom Level.
5. Check the radio button against Enable, under ActiveX controls and Plug-ins.
6. Click OK.
7. If warning window will display :" Are you sure you want to change the security settings at this zone?, "Click Yes.
8. Click Apply and then Click OK

2.7 ADVANTAGES AND DISADVANTAGES OF THE INTERNET

Internet has been perhaps the most outstanding innovation in the field of communication in the history of mankind. As with every single innovation, internet has its own advantages and disadvantages

2.7.1 Advantages

The Internet provides many facilities to the people. The main advantages of Internet are discussed below.

1. Sharing Information

You can share information with other people around the world. The scientist or researchers can interact with each other to share knowledge and to get guidance etc. Sharing information through Internet is very easy, cheap and fast method.

2. Collection of Information

A lot of information of different types is stored on the web server on the Internet. It means that billions websites contain different information in the form of text and pictures. You can easily collect information on every topic of the world. For this purpose, special websites, called search engines are available on the Internet to search information of every topic of the world. The most popular search engines are altavista.com, google.com, yahoo.com, ask.com etc. The scientists, writers, engineers and many other people use these search engines to collect latest information for different purposes. Usually, the information on the Internet is free of cost. The information on the Internet is available 24 hours a day.

3. News

You can get latest news of the world on the Internet. Most of the newspapers of the world are also available on the Internet. They have their websites from where you can get the latest news about the events happening in the world. These websites are periodically updated or they are immediately updated with latest news when any event happens around the world.

4. Searching Jobs

You can search different types of jobs all over the world, Most of the organizations/departments around the world, advertise their vacant vacancies on the Internet. The search engines are also used to search the jobs on Internet. You can apply for the required job through Internet.

5. Advertisement

Today, most of the commercial organizations advertise their product through Internet. It is very cheap and efficient way for the advertising of products. The products can be presented with attractive and beautiful way to the people around the world.

6. Communication

You can communicate with other through Internet around the world. You can talk by watching to one another; just you are talking with your friends in your drawing room. For this purpose, different services are provided on the Internet such as;

- Chatting
- Video conferencing
- E-mail
- Internet telephony etc.

7. Entertainment

Internet also provides different type of entertainments to the people. You can play games with other people in any part of the world. Similarly, you can see movies, listen music etc. You can also make new friends on the Internet for enjoyment.

8. Online Education

Internet provides the facility to get online education. Many websites of different universities provide lectures and tutorials on different subjects or topics. You can also download these lectures or tutorials into your own computer. You can listen these lectures repeatedly and get a lot of knowledge. It is very cheap and easy way to get education.

9. Online Results

Today, most of the universities and education boards provide results on the Internet. The students can watch their results from any part of country or world.

10. Online Airlines and Railway Schedules/ Booking

Many Airline companies and Indian Railways provide their schedules of flights and trains respectively on the Internet. Even you can make reservations via internet.

11. Online Medical Advice

Many websites are also available on the Internet to get information about different diseases. You can consult a panel of online doctors to get advice about any medical problem. In addition, a lot of material is also available on the Internet for research in medical field.

2.7.2 Disadvantages

1. Virus threat

Virus is nothing but a program which disrupts the normal functioning of your computer systems. Computers attached to internet are more prone to virus attacks and they can end up into crashing your whole hard disk, causing you considerable headache.

Most of the viruses transfer from one computer to another through e-mail or when information is downloaded from the Internet. These viruses create different problems in your computer. For example, they can affect the performance of your computer and damage valuable data and software stored in your computer.

2. Security Problems

The valuable websites can be damaged by hackers and your valuable data may be deleted. Similarly, confidential data may be accessed by unauthorized persons.

3. Immorality

Some websites contains immoral materials in the form of text, pictures or movies etc. These websites damage the character of new generation.

4. Filtration of Information

When a keyword is given to a search engine to search information of a specific topic, a large number of related links a displayed. In this case, it becomes difficult to filter out the required information.

5. Accuracy of Information

A lot of information about a particular topic is stored on the websites. Some information may be incorrect or not authentic. So, it becomes difficult to select the correct information.

6. Wastage of times

A lot of time is wasted to collect the information on the Internet. Some people waste a lot of time in chatting or to play games. At home and offices, most of the people use Internet without any positive purpose.

7. English language problems

Most of the information on the Internet is available in English language. So, some people cannot avail the facility of Internet.

8. Spamming

Spamming refers to sending unwanted e-mails in bulk, which provide no purpose and needlessly obstruct the entire system. Such illegal activities can be very frustrating for you, and so instead of just ignoring it, you should make an effort to try and stop these activities so that using the Internet can become that much safer.

9. Pornography

This is perhaps the biggest threat related to children's healthy mental life. A very serious issue concerning the Internet. There are thousands of pornographic sites on the Internet that can be easily found and can be a detrimental factor to letting children use the Internet.

10. Theft of Personal information

If you use the Internet, you may be facing grave danger as your personal information such as name, address, credit card number etc. can be accessed by other culprits to make your problems worse.

2.8 INTERNET SERVICES

2.8.1 USENET

It is a distributed Internet discussion system that evolved from a general purpose. Usenet is one of the oldest computer network communications systems still in widespread use. It was conceived by Duke University graduate students Tom Truscott and Jim Ellis in 1979. Users read and post e-mail-like messages (called "articles") to a number of distributed newsgroups, categories that resemble bulletin board systems in most respects. The medium is distributed among a large number of servers, which store and forward messages to one another. Individual users download and post messages to a single server, usually operated by their ISP or university and the servers exchange the messages between each other.

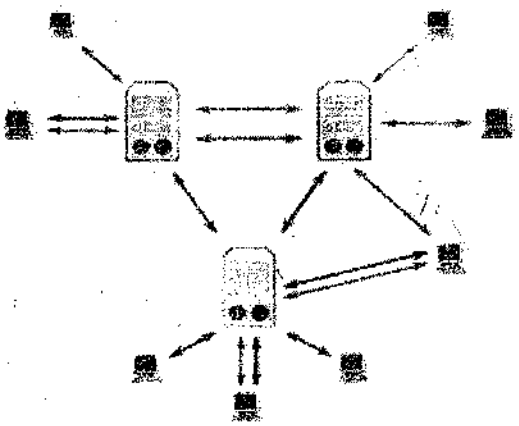


Figure 2.1: USENET Servers and Clients

Figure 2.1 shows some Usenet servers and clients. The dots on the servers represent which groups they carry. Arrows between servers indicate that the servers are sharing the articles from the groups. Arrows between computers and servers indicate that the user is subscribed to a certain group, and uploads and downloads articles to and from that server.

Usenet has significant cultural importance in the networked world. The format and transmission of Usenet articles is similar to that of Internet e-mail messages. The difference between the two is that Usenet articles can be read by any user whose news server carries the group to which the message was posted, as opposed to email messages which have one or more specific recipients.

Today, Usenet has diminished in importance with respect to Internet forums, blogs and mailing lists. The difference, though, is that Usenet requires no personal registration with the group concerned, that information need not be stored on a remote server, that archives are always available, and that reading the messages requires not a mail or web client, but a news client.

2.8.2 GOPHER

Gopher is a distributed document search and retrieval network protocol designed for the Internet. Its goal was similar to that of the World Wide Web, and it has been almost completely displaced by the Web.

The Gopher protocol offers some features not natively supported by the Web and imposes a much stronger hierarchy on information stored on it. Its text menu interface is well-suited to computing environments that rely heavily on remote computer terminals, common in universities at the time of its creation. Some consider it to be the superior protocol for storing and searching large repositories of information.

2.8.3 WAIS(Wide Area Information Server)

Wide Area Information Servers or WAIS is a distributed text searching system that uses the protocol standard ANSI Z39.50 to search index databases on remote computers.

This protocol and servers were primarily evangelized by Thinking Machines Corporation of Cambridge, Massachusetts. Thinking Machines produced a WAIS server which ran on their CM-1 and CM-5 supercomputers. WAIS clients existed for various operating systems including Windows, Macintosh and Unix.

Points to be remembered about WAIS are-

- Ø WAIS libraries are most often found on the Internet.
- Ø WAIS allows users to discover and access information resources on the network without regard to their physical location.
- Ø WAIS software uses the client-server model.

2.8.4 ARCHIE

Suppose you know about some program that you want to install in your machine, and you know the program is available some where out there in the Internet. Instead of searching randomly at various FTP sites the ARCHIE will do it. This facility maintains a database with the names of hundreds of Internet sites accessible via anonymous FTP. There are several ARCHIE servers, some of them are:

Name	**IP address**
archie.rutgers.edu	128.6.18.15
archie.cs.mcgill.ca	132.206.51.250
archie.funet.fi	128.214.6.102

archie.rediris.es	130.206.1.2
archie.sura.net	192.239.16.13
archie.doc.ic.ac.uk	146.169.16.11

The way to access an ARCHIE server is via telnet, e.g. "telnet archie.rutgers.edu".

2.8.5 VERONICA

Veronica is a search engine system for the Gopher protocol, developed in 1992 by Steve Foster and Fred Barrie at the University of Nevada.

Veronica is a constantly updated database of the names of almost every menu item on thousands of Gopher servers. The Veronica database can be searched from most major Gopher menus.

The name, although officially an acronym for "Very Easy Rodent-Oriented Net-wide Index to Computer Archives", was chosen to match that of the FTP search service known as Archie — Veronica Lodge being the name of another character from the Archie Comics.

2.8.6 IRC (Internet Relay Chat)

Internet Relay Chat (IRC) is a form of real time internet chat. It is mainly designed for group (many-to-many) communication in discussion forums called channels, but also allows one-to-one communication via private message.

If you want to talk and contribute a message to the conversation on a channel, just type a message and press the enter key. It will then be sent by your client application over the Internet to the IRC server, which will copy the message to any other servers on the network, and then be copied to the screens of the other members in that chat room.

When you talk, your message is prefixed with your nickname when it is displayed on other people's screens, just like other people's messages are when they are displayed on yours.

You should watch the conversation in a window for a few minutes after joining it before you starting talking to make sure you have some understanding of the community atmosphere that has built up in the room before you arrived.

IRC was created by Jarkko Oikarinen (nickname "WiZ") in late August 1988 to replace a program called MUT (MultiUser talk).

IRC gained prominence when it was used to report on the Soviet coup attempt of 1991 throughout a media blackout. It was previously used in a similar fashion by Kuwaitis during the Iraqi invasion.

Self Learning Exercise

Sate True/False

K Plug-ins are add-on programs that let you view flashy animations and graphics, fly through virtual 3-D worlds, create interactive presentations and spreadsheets

L. With RealPlayer, you can play only real-time audio not the video.

M. Most of the viruses transfer from one computer to another through e-mail or when information is downloaded on the Internet.

N. WAIS software uses the Peer-to-Peer model

Fill in the Blanks

O. ActiveX control can be automatically downloaded and executed by a _____.

P. _____ refers to sending unwanted e-mails in bulk.

Q. _____ is a distributed Internet discussion system that evolved from a general purpose.

R. WAIS stands for _____.

S. Internet Relay Chat (IRC) is a form of _____ chat.

2.9 SUMMARY

In this unit we have discussed Web Elements, web browser, the concepts of reading and writing the e-mail. Internet has advantages and disadvantages also, so we need to concern about its security and privacy issues. We have also discussed Cookies and Firewalls. By reading this unit you can have an idea of various Internet Services like USENET, GOPHER VERONICA etc.

2.10 GLOSSARY

ActiveX Controls:Controls based on OLE (Object Linking and Embedding) and Microsoft's ActiveX technology that set rules for how information should be shared between applications. These are used to automate HTML pages.

ARCHIE:Archie is a tool for indexing FTP archives, allowing people to find specific files.

Cookies:A method of adding interactivity to web pages that enables users to personalize the content of web sites.

Firewall:A system that secures data in the back-end systems and the business logic at the middle tier. It is typically placed between corporate network and the Internet, where the online transactions happen

GOPHER:The Gopher protocol is a TCP/IP Application layer protocol designed for distributing, searching, and retrieving documents over the Internet

IRC:It is a form of real-time Internet text messaging

Plug-ins:Software applications that work in conjunction with the browser to add new capabilities to the browser.

Real Player:The multimedia player that is part of the Real Network's Real media streaming technology.

USENET:It is a worldwide distributed Internet discussion system.

VERONICA:Veronica is a search engine system for the Gopher protocol

WAIS:WAIS (Wide Area Information Servers) is an Internet system in which specialized subject databases are created at multiple server locations

2.11 FURTHER READINGS

- Internet Millennium Edition , Complete Reference by young, TMH.
- Bob Breedlove et al, "Web Programming Unleashed", Sams.net Publishing
- R. Krishnamoorty & S. Prabhu, "Internet and Java Programmng", New Age International Publishers, 2004.
- Thomno A. Powell, "The Complete References HTML and XHTML", fourth edition, Tata McGraw Hill, 2003

2.12 ANSWER TO SELF LEARNING EXERCISES

Question	Answer	Question	Answer
A	True	K	True
B	False	L	False
C	True	M	True
D	True	N	False
E	True	O	Web Browser
F	Cookie	P	Spamming
G	Networks	Q	USENET
H	Chat	R	Wide Area Information Server
I	Microsoft Security Advisor	S	Real Time Chat
J	Domain Information		

2.13 UNIT-END QUESTION

1. Write short notes on
   a. Cookies
   b. Firewall
   c. IRC
2. What is the difference between plug-ins and ActiveX controls
3. Discuss the advantages and disadvantages of internet.
4. What are internet services? Explain any four.

****

UNIT-III

E-MAIL

STRUCTURE OF THE UNIT

3.0 OBJECTIVE

Objective of this unit is to give an overview of E-mail. It describes basics of sending and receiving E-mails, E-mail services. It gives the merits and demerits of POP and web based E-Mail services. It also defines various e-mail server and e-mail Clients

3.1 INTRODUCTION

In the previous unit we have discussed Internet Basics such as web page, web browser, web server etc. We have also discussed some security issues like firewall and cookies. Previous unit gave an overview of various Internet Services.

3.2 INTERNET EXPLORER

Formerly called Microsoft Internet Explorer (MSIE), Internet Explorer (IE) is the name of Microsoft's browser that enables you to view Web pages on the Internet using a graphical interface. Internet Explorer was first introduced in 1995 and it is the most popular browser used today. The latest official release, Internet Explorer 7 (IE7) was made available for Windows XP, Windows Server 2003, and Windows Vista. This version included the popular tabbed browsing option, a feature first used by Mozilla in 2001, a new feed reader, and other features. The beta version of Internet Explorer 8 (IE8) was released in early 2008. Internet Explorer supports Java , JavaScript and ActiveX.

3.2.1 Features

Below are some features of Microsoft Internet Explorer-

3.2.1.1 Web Page Complete

When you save a Web page as "Web page, complete," a folder with the same name as the Hypertext Markup Language (.html) file is created in the target folder. This folder contains page elements such as images and sounds. The relative links to embedded content in the Web page are re-written to point to the contents of this new folder. Absolute links such as a hyperlink to another Web page are not re-written. As long as the folder is kept with its corresponding .htm file, the opened file includes the referenced images.

3.2.1.2 Web Archive

When you save a Web page as "Web archive," the Web page saves this information in Multipurpose Internet Mail Extension HTML (MHTML) format with a .mht file extension. All relative links in the Web page are remapped and the embedded content is included in the .mht file, rather than being saved in a separate folder. The absolute references or hyperlinks on the Web page remain unchanged and the .mht file is viewed using Internet Explorer.

MHTML enables you to send and receive Web pages and other HTML documents using e-mail programs such as Microsoft Exchange, Microsoft Outlook, and Microsoft Outlook Express. MHTML enables you to embed images directly into the body of your e-mail messages rather than attaching them to the message.

NOTE: "Web archive" is available only if Outlook Express is installed. The ability to save a Web page as a Web archive file is provided by the Inetcomm.dll file (the Microsoft Internet Messaging API file), which is installed by Microsoft Outlook Express 5.

3.2.1.3 Language Encoding

Encoding refers to the character set used to display a language. The United States is associated with the Western European character set. The Western European character set contains the letters and symbols for English, French, Spanish, and Italian.

3.2.1.4 History Explorer Bar

A new View menu within the History Explorer bar gives you the ability to change the sort order of the Web page entries by choosing one of the following settings:

- Date
- Site
- Most visited
- Order visited today

When you perform a search within the History Explorer bar, the following folders are searched:

- Favorites
- History
- Temporary Internet Files

The results can be added as a favorite or opened in a new window when you right-click an appropriate entry in the History Explorer bar.

3.2.1.5 Search Explorer Bar

When you perform a new search by clicking New on the Search Explorer bar, the following search options are available:

- Find a Web page
- Find a person's address
- Find a business
- Previous searches
- Find a map
- Find in encyclopedia
- Find in Newsgroups

3.2.1.6 Favorites

Adding a favorite in Internet Explorer 5 is easier than in previous versions of Internet Explorer. To add a favorite, simply click OK in the Add Favorite dialog box. To make a favorite available for offline use, click the Make available offline check box to select it.

3.2.1.7 AutoComplete Feature

The AutoComplete feature suggests possible matches for entries you type in the Address bar, a Web page form, or a user name or password box on a Web page.

3.3 POP

POP stands for Post Office Protocol, and is one of the technologies used for that all-important medium of communication i.e. email. Email requires a special language for mail to be received or sent. POP is one of the technologies that allows email sent from anywhere in the world to arrive in your inbox.

When a person sends an email to any address, it is transmitted over the Internet, and eventually lands on email server. In order for personal computer to get that mail it must follow a certain protocol. POP allows computer to talk to the email server and then download all of the messages each time we connect.

3.3.1 POP Mail

POP (Post Office Protocol) mail refers to email software on computer that sends and receives mail via a shared computer's electronic post office. Personal computers seldom have the network resources required to serve as an independent post office, which is why most people use shared systems as email servers.

POP mail software that (the POP client) logs into the shared computer (the POP server) and transfers received mail from account to computer. When we send an email message, the POP client transfers it to a dedicated mail system for transmission on the Internet.

Most POP mail clients support features such as document attachment, automatic document encoding and decoding, user lookup, internal address books, font selection, signature files, and multiple mail management options.

POP3 (as per web-opedia): Short for Post Office Protocol, a protocol used to retrieve e-mail from a mail server. Most e-mail applications (sometimes called an e-mail client) use the POP protocol, although some can use the newer IMAP (Internet Message Access Protocol).

There are two versions of POP.

POP2, It became a standard in the mid-80's and requires SMTP to send messages.

POP3, It can be used with or without SMTP.

3.3.2 IMAP

IMAP (as per the same): Short for Internet Message Access Protocol, a protocol for retrieving e-mail messages. The latest version, IMAP4, is similar to POP3 but supports some additional features. For example, with IMAP4, you can search through your e-mail messages for keywords while the messages are still on mail server. You can then choose which messages to download to your machine.

3.3.3 POP v/s IMAP

The big difference between the two is the fact that, with pop, you download everything from your email hosts servers to your system. With IMAP, you can take a look at what is on the server first and then decide which you want to download and which you simply want to delete.

3.4 WEB BASED E-MAIL

Email addresses are commonly assigned by Internet service provider (ISP), but one can also obtain an email address through a website service. This is known as web based email.

While setting up email clients to receive mail through their ISP. The client asks for a POP server (Post Office Protocol) in order to receive mail, and a SMTP server (Standard Mail Transfer Protocol) in order to send mail. However, most email clients can also be used to collect web based email by configuring the client to connect to an IMAP server (Internet Message Access Protocol). The IMAP server is part of the host's package. It provides the more common way to access this mail is by using a browser.

3.4.1 Advantages

Web based email has its advantages, especially for people who travel. Email can be collected by simply visiting a website, negating the need for an email client, or to logon from home. Wherever a public terminal with Internet access exists — from the library to a café to the airport or hotel — one can check, send and receive email quickly and easily.

Another advantage of web based email is that it provides an alternate address allowing you to reserve your ISP address for personal use. If you would like to subscribe to a newsletter, enter a drawing, register at a website, participate in chats, or send feedback to a site, a web based email address is the perfect answer. It will keep non-personal mail on a server for you to check when you wish, rather than filling up your private email box.

Websites often share information provided them, but giving them a web email address means that junk mail will go to this disposable account instead of your personal account. Later, if you lose interest in the connections associated with this address, you can close or abandon it (as policy dictates) without ramifications to your standard email address. In short, a web based email address can help keep your ISP mailbox uncluttered while still allowing you the flexibility to take advantage of Internet activities that require an address.

3.4.2 Disadvantages

There are also some drawbacks of web based email, however. Security and privacy are the biggest issues. Most sites will explicitly state in the privacy policy that no expectation of privacy shall exist. Security of the server is also less certain. It is therefore unwise, generally speaking, to use web based email for any correspondence of a private nature, or to use a web based email address for services that will be emailing you sensitive information.

Many web based email services are free, but often the 'price tag' is paid in advertisements that clutter and slow the interface. Other service providers include a small tagline attached to the end of each email sent. These services usually offer premium accounts, for a fee, that do not include taglines or advertisements.

Web-based is different in that everything stays on the web-based hosts servers (Hotmail, Yahoo, etc).. Nothing ever gets downloaded to your system.

Self Learning Exercise

State True/False

A Internet Explorer is formerly called Microsoft Internet Explorer (MSIE).

B. Encoding refers to the language used to display a character.

C. IMAP stands for Internet Message Access Protocol.

D. Web archive is available only if Outlook Express is installed.

Fill in the Blanks

E. _____mail refers to email software on computer that sends and receives mail via a shared computer's electronic post office.

F. Internet Explorer was first introduced in _____.

G. Html stands for _____

3.5 BASICS OF E-MAIL

3.5.1 Basics Of Sending and receiving mails

General email terms and Information:

- E-mail Address must be in the form of name@wherever.com, where name is the person's email name and wherever.com is the service provider.
- cc means send a carbon copy. This can be useful when two people or groups are corresponding but a third party or group needs to be aware of what is being said.
- bcc is a blind carbon copy. The recipient will not know that a copy was sent to some one else.
- Signature is a name and address attached to the end of every email you send.

- :-) Emoticons (or smileys) are the little faces used to indicate emotion in email.

3.5.2 Tips for sending pictures through e-mail

Below are some general tips to consider when sending any attachment through e-mail, including pictures.

- It is common courtesy to only send 1-5 attachments or pictures in a single e-mail. If you have more than five pictures, we suggest you post your pictures on an online site and simply send the link to that site with all your pictures or compress all the files into one file. A listing of free locations where you can post your pictures or photo album on the Internet can be found.
- Reduce the size of the images and/or keep the image size small. Many times when scanning an image or taking a picture of the image, it is a large file and often takes up a lot of space. Not only does this cause longer downloads, but in some cases may even cause your e-mails to not be received because of the space taken by the pictures. A listing of free image editors and programs used to resize and adjust images can be found on Internet.
- Keep the images and/or convert the images into formats supported by multiple computers. For example, all computers are capable of opening JPEG (JPG) and GIF images. Make sure the images are in one of these types of formats.

3.5.3 Email Protocols

Basically, a protocol is about a standard method used at each end of a communication channel, in order to properly transmit information. In order to deal with your email you must use a mail client to access a mail server. The mail client and mail server can exchange information with each other using a variety of protocols.

3.5.3.1 IMAP Protocol

IMAP (Internet Message Access Protocol) – Is a standard protocol for accessing e-mail from your local server. IMAP is a client/server protocol in which e-mail is received and held for you by your Internet server. As this requires only a small data transfer this works well even over a slow connection such as a modem. Only if you request to read a specific email message will it be downloaded from the server. You can also create and manipulate folders or mailboxes on the server, delete messages etc.

3.5.3.2 POP3 Protocol

The POP (Post Office Protocol 3) protocol provides a simple, standardized way for users to access mailboxes and download messages to their computers.

When using the POP protocol all your eMail messages will be downloaded from the mail server to your local computer. You can choose to leave copies of your eMails on the server as well. The advantage is that once your messages are downloaded you can cut the internet connection and read your eMail at your leisure without incuring further communication costs. On the other hand you might have transferred a lot of message (including spam or viruses) in which you are not at all interested at this point.

3.5.3.3 SMTP Protocol

The SMTP (Simple Mail Transfer Protocol) protocol is used by the Mail Transfer Agent (MTA) to deliver your eMail to the recipient's mail server. The SMTP protocol can only be used to send emails, not to receive them. Depending on your network / ISP settings, you may only be able to use the SMTP protocol under certain conditions.

3.5.3.4 HTTP Protocol

The HTTP protocol is not a protocol dedicated for email communications, but it can be used for accessing your mailbox. Also called web based email, this protocol can be used to compose or retrieve emails from your account. Hotmail is a good example of using HTTP as an email protocol.

3.5.4 Mailing List

A mailing list is a collection of names and addresses used by an individual or an organization to send material to multiple recipients. The term is often extended to include the people subscribed to such a list, so the group of subscribers is referred to as "the mailing list", or simply "the list".

At least two types of mailing lists can be defined: a "mailing list" of people that was used as a recipient for newsletters, periodicals or advertising. Traditionally this was done through the postal system, but with the rise of email, the electronic mailing list became popular. The second type allows members to post their own items which are broadcast to all of the other mailing list members. This second category is usually known as a discussion list.

A list of e-mail addresses identified by a single name, such as mail-list@sandybay.com. When an e-mail message is sent to the mailing list name, it is automatically forwarded to all the addresses in the list.

An electronic mailing list is a special usage of email that allows for widespread distribution of information to many Internet users. It is similar to a traditional mailing list — a list of names and addresses — as might be kept by an organization for sending publications to its members or customers, but typically refers to four things: a list of email addresses, the people ("subscribers") receiving mail at those addresses, the publications (e-mail messages) sent to those addresses, and a reflector, which is a single e-mail address that, when designated as the recipient of a message, will send a copy of that message to all of the subscribers

3.6 FREE E-MAIL SERVICES

1. Gmail : Gmail is the Google approach to email, chat and social networking. Practically unlimited free online storage allows you to collect all your messages, and Gmail's simple but very smart interface lets you find them precisely and see them in context without effort. POP and powerful IMAP access bring Gmail to any email program or device.

Gmail puts contextual advertising next to the emails you read.

2. AIM Mail: AIM Mail, AOL's free web-based email service, shines with unlimited online storage, very good spam protection and a rich, easy to use interface.

Unfortunately, AIM Mail lacks a bit in productivity (no labels, smart folders and message threading), but makes up for some of that with very functional IMAP (as well as POP) access.

3. GMX Mail: GMX Mail is a reliable email service filtered well of spam and viruses whose 5 GB of online storage you can use not only through a rich web interface but also via POP or IMAP from a desktop email program. More and smarter ways to organize mail could be nice.

4. Yahoo Mail : Yahoo! Mail is your ubiquitous email program on the web and mobile devices with unlimited storage, SMS texting and instant messaging to boot.

While Yahoo! Mail is generally a joy to use, free-form labeling and smart folders would be nice, and the spam filter could catch junk even more effectively.

5. Gawab.com : Gawab.com is a speedy, stable and very usable free email service with 10 GB online space, POP and IMAP access as well as many a web-based goodie.

It's a pity Gawab.com's IMAP implementation does not give you access to labels, and full message search is missing from the web interface.

6. Inbox.com : Inbox.com not only gives you 5 GB to store your mail online but also a highly polished, fast and functional way to access it via either the web (including speedy search, free-form labels and reading mail by conversation) or through POP in your email program.

Unfortunately, IMAP access is not supported by Inbox.com, and its tools for organizing mail could be improved with smart or self-teaching folders.

7. FastMail : FastMail is a great free email service with IMAP access, useful features, and a stellar web interface.It's a pity FastMail does not offer truly effective spam filtering for free accounts, and more storage space for all users.

8. Windows Live Hotmail : Windows Live Hotmail is a free email service that gives you 5 GB (and growing) of online storage, fast search, solid security, POP access and an interface easy as a desktop email program.

When it comes to organizing mail, Windows Live Hotmail does not go beyond folders (to saved searches and tags, for example), its spam filter could be more effective, and IMAP access to all online folders would be nice.

9. Yahoo Mail : Yahoo! Mail Classic is a comfortable, reliable and secure email service with unlimited storage. A pretty good spam filter keeps the junk out, and you can send rich emails using Yahoo! Mail's HTML editor.

10 HotPOP : HotPOP offers free, reliable email accounts you can use with any email program using POP3 and SMTP. In addition, HotPOP lets you forward incoming messages to multiple other addresses.

Unfortunately, HotPOP lacks IMAP access and a web-based email interface and is a bit short on storage space.

3.7 E-MAIL SERVER

An e-mail server is a computer within your network that works as your virtual post office. It is also referred to as simply "mail server". A mail server usually consists of a storage area where e-mail is stored for local users, a set of user definable rules which determine how the mail server should react to the destination of a specific message, a database of user accounts that the mail server recognizes and will deal with locally, and communications modules which are the components that actually handle the transfer of messages to and from other mail servers and email clients.

A mail server (also known as a mail transfer agent or MTA, a mail transport agent, a mail router or an Internet mailer) is an application that receives incoming e-mail from local users (people within the same domain) and remote senders and forwards outgoing e-mail for delivery. A computer dedicated to running such applications is also called a mail server. Microsoft Exchange, qmail, Exim and sendmail are among the more common mail server programs.

The mail server works in conjunction with other programs to make up what is sometimes referred to as a messaging system. A messaging system includes all the applications necessary to keep e-mail moving as it should. When you send an e-mail message, your e-mail program, such as Outlook or Eudora, forwards the message to your mail server, which in turn forwards it either to another mail server or to a holding area on the same server called a message store to be forwarded later. As a rule, the system uses SMTP (Simple

Mail Transfer Protocol) or ESMTP (extended SMTP) for sending e-mail, and either POP3 (Post Office Protocol 3) or IMAP (Internet Message Access Protocol) for receiving e-mail.

3.8 E-MAIL CLIENT

An email client, email reader, or more formally mail user agent (MUA), is a computer program used to manage email. The term email client may refer to any agent acting as a client toward an email server, regardless of it being a mail user agent, a relaying server, or a human typing on a terminal. In addition, a web application providing message management, composition, and reception functionality is sometimes considered an email client.

Examples of some E-mail Client programs are -

3.8.1 Microsoft Outlook and Outlook Express

Microsoft Outlook Express would definitely be the most popular email client software in the world because it is supplied free with the Windows operating system (the most popular operating system). Outlook Express is a small and mean email client software and does its job well. I have been using Outlook Express on my Windows systems for a long time now and am quite a satisfied - I have no complaints that is. However, there are certain aspects where I would like to see an improvement - Searching and tagging emails functionality should definitely be better. I have extensive articles on Outlook Express if you want to get the maximum out of this software.

3.8.2 Mozilla Thunderbird

Mozilla's Thunderbird is a free, open source, cross-platform email client software. It is fast, safe and an easy to use program with intelligent spam filters and quick email message search function. It also offers junk mail filters and anti-phishing protection with advanced security. A built-in spell checking function will help you correct those pesky errors. But what I like best in Thunderbird *email client software* is that you can extend its functionality through Extensions. You can also change the look and feel of the email software using themes.

3.8.3 Opera Mail

Opera Mail email software comes with the Opera browser and supports multiple e-mail accounts using both POP and IMAP protocols. What I really liked about Opera Mail is the powerful search functions. You can search by sender, date, subject or content and can combine variables to narrow your search. Additionally, clicking on a contact's name will display all correspondences with that person (great feature). You can also label the incoming emails as important, to do, call back, funny etc. Opera Mail comes with Junk email filters that you can even train to suit your requirements.

Microsoft Hotmail and Gmail are also the exapmples of E-Mail Client progrms.

Self Learning Exercise

State True/False

H A mailing list is a collection of names and addresses used by an individual or an organization to send material to multiple recipients.

I. An e-mail server is a computer within your network that works as your Real post office.

J. A mail server (also known as a mail transfer agent or MTA, a mail transport agent.

K. Mozilla's Thunderbird is a free, open source, cross-platform **email client software.**

Fill in the Blanks

L _____ is a name and address attached to the end of every email you send.

M. _____ is the Google approach to email, chat and social networking.

N. MUA stands for _____

O. _____would definitely be the most popular email client software in the world because it is supplied free with the Windows operating system

3.9 SUMMARY

In this unit we have discussed the features of IE, POP and web based Email. Basics of E-mailing have also discussed. Here we have discussed the Email Protocols, Mailing List and some free E-mail Services also. Finally we have an overview of Web Server and Web Client Programs.

3.10 GLOSSARY

BCC:Stands for "Blind Carbon Copy". Blind carbon copying is a useful way to let others see an e-mail you sent without the main recipient knowing.

CC:Stands for "Carbon Copy." This option is often used in business communications when a message is intended for one person, but is relevant to other people as well

HTTP:Stands for "HyperText Transfer Protocol." This is the protocol used to transfer data over the World Wide Web.

IMAP:Stands for "Internet Message Access Protocol" and is pronounced "eye-map." It is a method of accessing e-mail messages on a server without having to download them to your local hard drive.

POP3:Stands for "Post Office Protocol." POP3, sometimes referred to as just "POP," is a simple, standardized method of delivering e-mail messages.

Protocol:When computers communicate with each other, there needs to be a common set of rules and instructions that each computer follows. A specific set of communication rules is called a protocol.

SMTP:Stands for "Simple Mail Transfer Protocol." This is the protocol used for sending e-mail over the Internet. Your e-mail client (such as Outlook, Eudora, or Mac OS X Mail) uses SMTP to send a message to the mail server, and the mail server uses SMTP to relay that message to the correct receiving mail server

3.11 FURTHER READINGS

- Internet Millennium Edition , Complete Reference by young, TMH.
- Bob Breedlove et al, "Web Programming Unleashed", Sams.net Publishing
- R. Krishnamoorty & S. Prabhu, "Internet and Java Programming", New Age International Publishers, 2004.
- Thomno A. Powell, "The Complete References HTML and XHTML", fourth edition, Tata McGraw Hill, 2003

3.12 ANSWER TO SELF LEARNING EXERCISE

A	True	I	False
B	False	J	True
C	True	K	True
D	True	L	Signature
E	Post Office Protocol	M	G-mail

F	1995	N	Multi User Agent
G	Hyper Text Markup Language	O	Microsoft Outlook Express
H	True		

3.13 UNIT END QUESTIONS

1. Discuss the advantages and disadvantages of web based E-mail.
2. What do you mean by protocols? Explain the E-mail Protocols.
3. Write short notes on
    1. Mailing Lists
    2. Free E-mail Services
    3. POP Based mails

***

UNIT-IV
WEB AUTHORING TOOLS

STRUCTURE OF THE UNIT

4.0 OBJECTIVE:

The World Wide Web is often referred to simply as 'the web' or www. In essence, the web allows the user to view information on the Internet (the overall network that connects a computer to other computers and networks) in a structured and graphical manner. The objective of this unit to make student familiar with tools and technologies used in web. They know how main components - a server and a browser are connected and information exists on a host computer runs on web server software, which allows other computers to access web documents or pages (these can contain text, hypertext, graphics, animation, sound, video etc.) via a web browser on a client computer. Basic web pages are written using HyperText Mark-up Language.

4.1 INTRODUCTION:

Web authoring tools and HTML editors range from simple text editors to high powered graphical authoring tools and content management systems.

In the beginning, all Web pages were written "by hand", using plain text editors. Web authors had to know the ins and outs of the HTML scripting language, and the task could quickly become very tedious. Soon after the number of people designing Web pages grew, "HTML Editors" began to appear on the market. These were basically text editors with special features for pasting common HTML tags into documents.

There are two main types of software for creating Web sites: text editors and visual layout tools. With a text editor you write HTML in text mode and use a browser to preview the pages in a layout. A visual or WYSIWYG (What You See Is What You Get) layout tool lets you design pages in what we call a layout mode. With this tool you position text and images on the page and the software generates the codes needed to display the page in a Web browser.

A web page is simply text that is interpreted and displayed as a formatted page by the browser software. Developing a web page requires no special software (a web page can be written in simple text or notepad), just the knowledge of the required HTML codes and correct syntax. Most people, however, aren't fluent enough in HTML (a complex and evolving markup language), hence the need for a tool that will simplify Web page creation. For this, we employ the help of our HTML text editor, which is basic text software that

has been customized for Web authoring purposes. These editors still require to work in text mode, but provide tools to facilitate markup as well as verify that the syntax is being used properly. An HTML text editor is a good choice only for people who are most comfortable working in the text mode and who understand the concept of "tagging" text to gain control over the stream of HTML code.

Major Features of Web Authoring Tools

1. HTML Coding and Editing
2. Site Management (Multiple Pages Package Project)
3. Ease of Use
4. WYSIWYG Editing - What You See is What You Get
5. Support for Page Design, Layout and Coding
6. Page Preview
7. JavaScript Integration
8. Color Coding of Syntax
9. Debugging
10. One in All solution for Editing, Running and Publishing
11. Browser Compatibility Testing
12. FTP Integration
13. In built Templates

There are two types of Web Publishing Tools. The first type is "code centric" and simply assists the web author to write and validate HTML code. The second type, is "page centric" and uses a WYSIWYG (What You See Is What You Get) user interface. Most WYSIWYG editors also provide the ability to add or modify HTML code directly, should that ever be required. Web Publishing Applications have become very sophisticated in recent years and can generate clean HTML code. Consequently, there is no need to write program code anymore.

Text editors (Code Centric)

Text (source) editors intended for use with HTML usually provide syntax highlighting. Templates, toolbars and keyboard shortcuts may quickly insert common HTML elements and structures. Wizards, tooltip prompts and auto-completion may help with common tasks.

Text HTML editors commonly include either built-in functions or integration with external tools for such tasks as source and version control, link-checking, code checking and validation, code cleanup and formatting, spell-checking, uploading by FTP, and structuring as a project.

Text editors require user understanding of HTML and any other web technologies the designer wishes to use like CSS, JavaScript and server-side scripting languages.

Visual Editors (Page Centric)

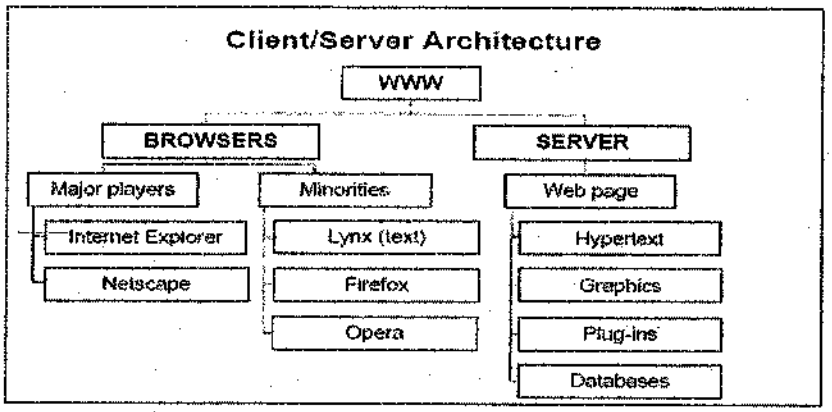
Most of the Web page creation tools being manufactured today follow in the footsteps of other document creation tools. Graphic designers today use the various available desktop publishing software to design and layout pages without even thinking about the computer codes that actually generate the document. As these visual tools for Web page design become more sophisticated, knowledge of HTML is becoming less essential to the process. Some good examples of great visual tools available to the vast majority of website developers and designers are from manufacturers like Macromedia (now Adobe) Dreamweaver and Adobe

Photoshop CS.

Visual Web page editors allow you to design and construct Web pages as you would documents, using word processor or page layout software. The WYSIWYG view is achieved by embedding a layout engine based upon that used in a web browser. The layout engine will have been considerably enhanced by the editor's developers to allow for typing, pasting, deleting and moving the content. The goal is that, at all times during editing, the rendered result should represent what will be seen later in a typical web browser.

4.2 COMPONENTS OF THE WEB:

The world wide web is often referred to simply as 'the web' or www. The web allows the user to view information on the Internet (the overall network that connects a computer to other computers and networks) in a structured and graphical manner. It consists of two main components - a server and a browser which show in figure .The information exists on a host computer running web server software, which allows other computers to access web documents or pages (these can contain text, hypertext, graphics, animation, sound, video and interaction) via a web browser on a client computer. Basic web pages are written using HyperText Mark-up Language (HTML).



To extend the capability of basic HTML, additional features are added via programs and incorporated as plug-ins. The two most common web browsers are Netscape Navigator and Microsoft Internet Explorer although many other web browsers exist.

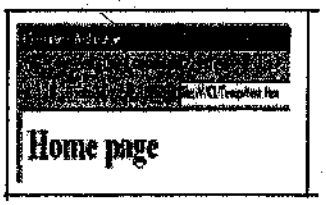
The Authoring Process

Creating simple web pages with the current web authoring tools is not much more difficult than word-processing. There is little need to learn about HTML coding (although for those interested in this aspect many web authoring packages allow the exploration of this feature). Adding scientific content is also becoming easier as tools are developed to aid the process. The basic elements of a web page are given below.

header text	multimedia
body text	embedded commands
hyperlinks	backgrounds
lists	frames and borders
tables	themes and templates
forms	applets

The elements of a web page vary from site to site and even from page to page within a

site. However the web pages are likely to contain some or all of the items. Those listed in the left column may be considered the more basic elements while those in the right column are more advanced (but still often simple to incorporate into web pages).



A basic HTML document looks like this:

```
<!DOCTYPE html>
<html>
 <head>
  <title> My first web page</title>
 </head>
 <body>
  <h1>Home page</h1>
  <!— this is a comment —>
 </body>
</html>
```

the above code shows a section of a simple web page, with the corresponding HTML code to generate the page in a web browser. Although it is not normally necessary to learn HTML it is useful to have an idea of how HTML code works. The <html> tag simply denotes that this is the start of the HTML coding. It is now generally accepted that 'best practice' requires the use of lower case characters for HTML tags. At the end of the code </html> is used to denote the end of HTML coding. In general, but not always, there is a 'starting' and 'ending' tag for each HTML element. Next is <head> which starts the header information for the page. The header information in this case is simply the title of the page. The title information (My first web page) appears in the title bar of the program . The header may also contain other information such as the program name for the web authoring package used to generate the HTML code. The title for this page is contained within the <title> and </title> tags. This line is followed by the tag </head> to close the header information. Next is the main part of the document to place on the web page. This information is placed between the 'start' and 'end' tags <body> and </body>. In this case there is only one line of text. This is contained within more tags, <h1> and </h1>, which denote that the text is to be represented as a heading type 1 (a large font in bold format) and this is shown in figure .

Step for developing web page :

Hyperlinks:

Hyperlinks are what give web pages the user-orientated focus. They allow each user to browse where they desire, when they desire. Hyperlinks may be created to other pages within a web, to specific places within a web page and to pages on other web sites. The links are normally generated from 'hot' text or from 'hot' graphics. Links within a web are usually created using paths which are relative to where the user is now rather than as absolute addresses. This has the advantage that when the content of a web site is moved (eg from a PC where it is developed to a server for worldwide access) the links remain valid. Links to other web sites normally need to be absolute.

Validation:

Once web pages have been created they need to be checked to ensure that they work! Most of the modern web authoring software validates code during the editing process so there is little chance of having errors in the code. Unfortunately though not all browsers are equal.Some implementations of HTML work only on specific browsers. Thus it is necessary to check the web pages on several browsers and several versions of each browser, with several settings of screen resolution and colour settings. One also needs to check regularly for broken links (particularly to addresses on other web sites).

Publishing:

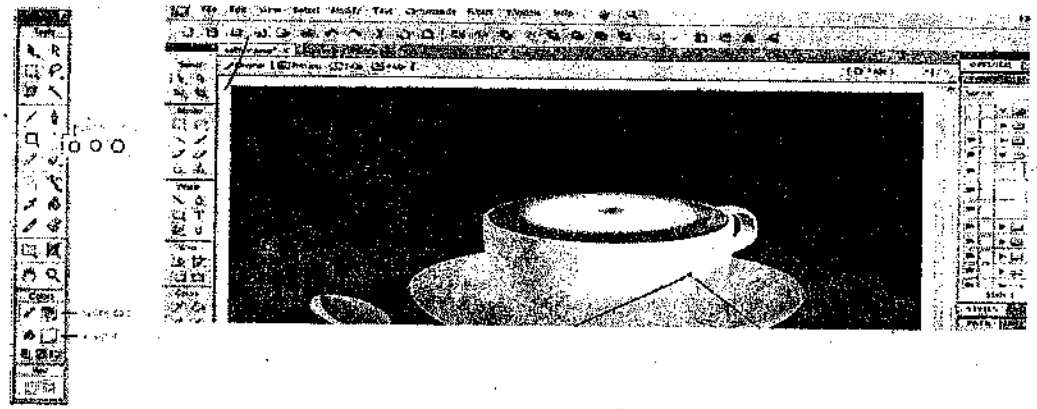
The finished web site needs to be 'published'. The web site may reside on a local PC and that computer can be set up as a server. However, most authors prefer to 'post' their webs on a dedicated server. Some software contains the facility to 'publish' the web by posting the documents to the server. If not an ftp client program will be required.

4.3 DESIGNING AND CODING TOOLS USED IN WEB:

A good Web Publishing Application will provide functionality that supports and promotes website consistency. This is achieved through the creation and use of common components that are incorporated into each web page in the website. For example, common headers, footers, graphics, font sets and backgrounds should to be defined once and reused throughout the web. Web Publishing Tools achieve consistency by leveraging technologies such as style sheets, themes and embedded pages.

The some web design tools are given below.

1. Fireworks:



now be pasted inside the circle as seen in the sample site. You can now add an effect to this picture to give it a more professional look. Click on Window>Effect to add an effect to the picture. You can try out some of the effects shown below:

We've used the first effect for the sample site. Choose the picture and in the Effect panel choose Shadow and Glow>Drop Shadow. In the pop-up window make the distance 6, color #999999, and angle 3. You can also optimize pictures by clicking on Extras>Adjust Color. Here you can adjust the brightness, contrast, hues, saturation and more.

Once you have completed the picture with the effect place it on the top left corner of the site over the rectangle's top curve. You can also make another image like that and keep it with the content, to add to the visual appeal of the site.

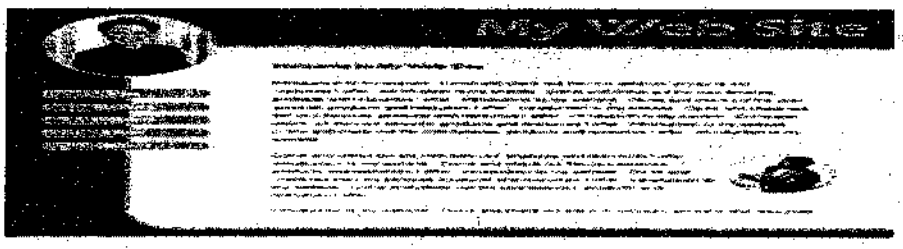
Now coming to the most important part of a site - the navigation. For the navigation of this site we will be using simple buttons. Again we will use the rounded square tool to make the buttons. This time we'll keep the roundness as 60. The fill color will be orange (#FF9900) and the Stroke is None. We will give the buttons an embossed look so keeping the button selected, go to your Effect panel click on Bevel and

Adobe Fireworks is a commercial raster and vector graphics editor hybrid from Adobe that's available for the Mac and Windows operating systems. Designed specifically for web designers (unlike Photoshop), Fireworks brings you a plethora of tools and options that make full web layout prototyping a breeze. Among its notable features are: "slices" for slicing and dicing a design mockup into HTML/CSS for rapidly creating prototypes (though you should avoid using auto-generated source code for the end-build), the ability to package an entire site design as a PDF with clickable components for interactive and impressive site prototypes, and optimization tools for making your web graphics as lightweight as possible.
As professional web designers we find Macromedia Fireworks is the best tool to use for designing and visualizing a web site. Fireworks is a tool that just helps you design and visualize your web site.

General step for designing a web site in Fireworks are as follows:

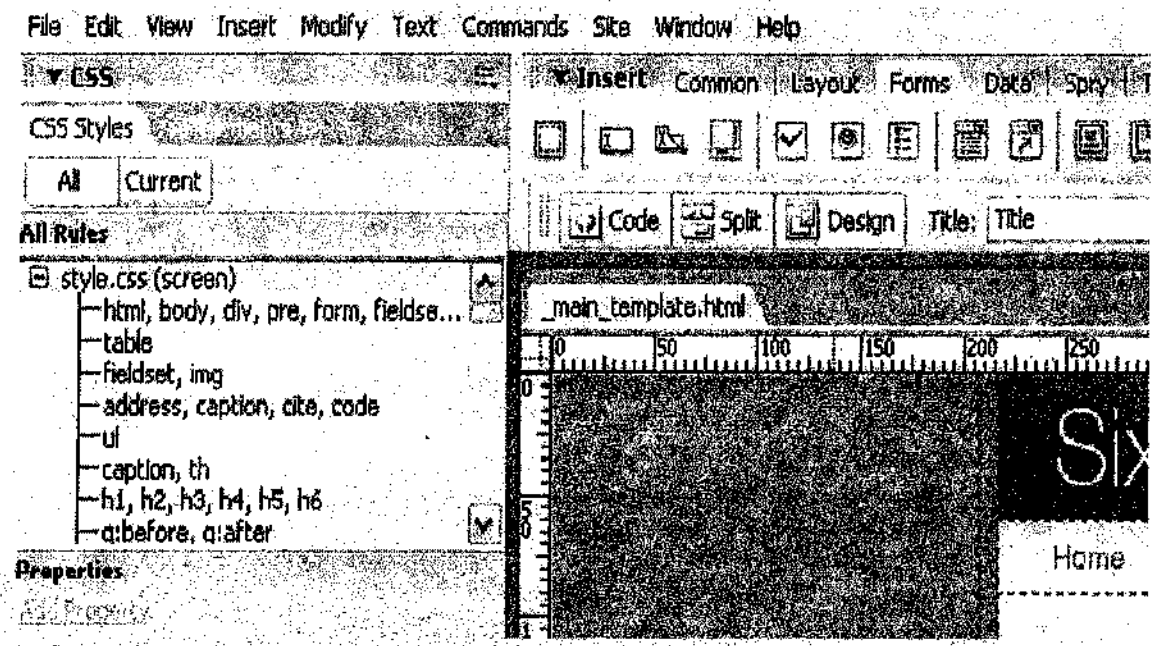
1. The first step is to define your canvas size and color. Open Fireworks and click on File>New. Fireworks will launch the new document window. Here you can give the width as 780 pixels, height as 600 pixels and the canvas color #003399 or any color you like for example if we select blue and orange color combination.
2. Now set some basic structure. Click on the rounded square found on the toolbar in the left - you'll need to click on the little arrow found at the bottom of the square tool to get the other options. With the rounded square selected make a big rectangle across the screen as seen in the sample site shown on top. Let the right side of the rectangle go out of the canvas. You can adjust the rounded corner by adjusting the roundness in the object panel (If the object panel is not already open, click on Window> Object to open the panel). We've used 20 for the roundness. Select the rectangle and make the stroke color #FF9900 and the fill color white. This will be the basic structure of the site.
3. Now add some content. Click on the tool found in the standard toolbar. On clicking on the canvas you'll get a text pop-up window where you can specify the font type, size and color. Type in your content and click on ok. You can click on any of the corners of the text to adjust the size of the text. With the same text Editor type in the title of your web site. Give your title a bold font and keep the size relatively high. The title needs to really stand out. You could also type in your slogan or a brief description about your site in a smaller font below the title - this will tell your site visitors what your site is all about.
4. Photographs and images make a web site visually appealing and more interesting so try to add a few pictures to your web site. As the same time your web site should not begraphicintensive as it will slow down the load time. In the sample web site shown on top we have used on two images, which has added to the visual appeal. Fireworks has a great property called paste inside which helps in making interesting graphics.
   Make a circle with the circle tool found in the standard toolbar.
   Tip - Hold down the shift key while drawing the circle to get a perfect circle.
   Think of a picture you would like to use in your site. Import this image by clicking on File>Import, navigate to the folder which has the image and select the picture. Click within the canvas for the picture to be imported. Once the picture is imported place it over the circle you have just drawn. Next, choose the picture and click on Edit>Cut. Then, choose the circle and click on Edit>Paste Inside. The picture should Emboss>Inset Emboss. Once you've got your button the way you like it, copy and paste it one below the other. Once you have all the buttons one below the other you can align the distance between them by selecting all the buttons and clicking on Modify>Align>Distribute Heights. This will space the buttons equally. Click on the A tool and write the name of the links on each of the buttons.

So your web site is ready and your output is look like this.



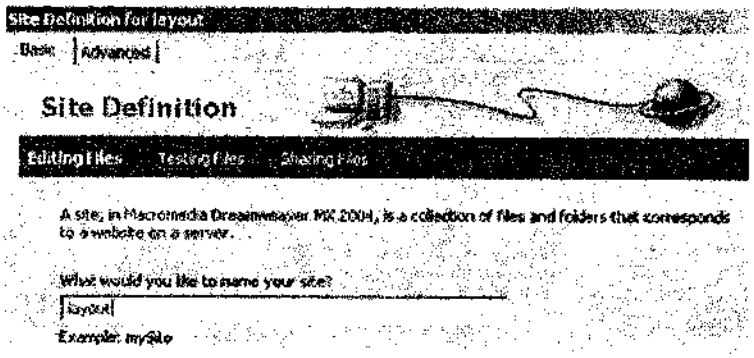
2. Dreamweaver:

Macromedia Dreamweaver is both a Web Publishing Tool and HTML editor that is used by over three million users around the world. This popular web authoring tool provides drag-and-drop capabilities and supports Cascading Style Sheet (CSS) standards, Netscape Layers, and JavaScript (including image rollover effects, animations, etc.). The Dreamweaver Web Publishing Application supports XML web services. Connections to data sources can be achieved by pointing a web page to an XML file or to the URL of an XML feed and then dragging and dropping the appropriate fields onto the page. Dreamweaver also provides a platform and technology-independent development environment that supports PHP, J2EE, and Microsoft .NET. This product runs on Windows and Macintosh platforms and integrates with tools such as Flash, Fireworks, Adobe Photoshop, MS Word and Excel.



Its featured-packed suite of tools and options include: syntax highlighting and very smart Code Hinting, a built-in FTP client, project management and workflow options that make team work effortless, and Live View – which shows you a preview of your source code. Dreamweaver tightly integrates with other popular Adobe products such as Photoshop, allowing you to share Smart Objects for quick and easy updating and editing of graphics components. Let's start to create your website in Dreamweaver. The following steps we use:

1. Open Dreamweaver.
2. Go to File>Site>New site. A big screen named Site definition will open where you have to give all the instructions for your site.



Site Definition Screen.

o In the first screen you need to give a name to your site. Click Next.

o Select No, I do not want to use a server technology. Click Next.

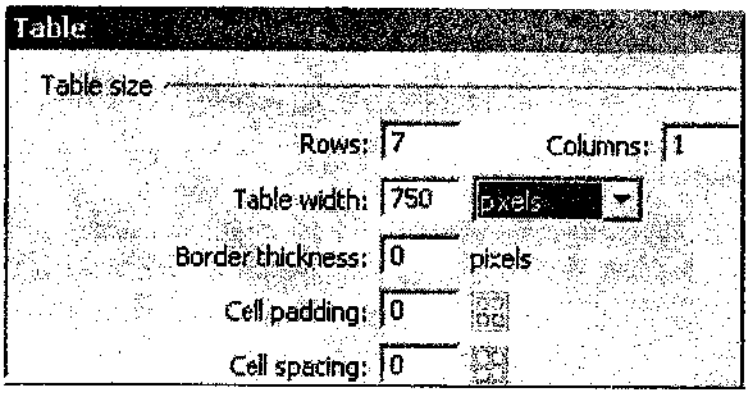
o In the third screen, Editing Files Part 3, select your website folder using the folder icon. Click Next. This is the folder that contains your site images and .psd file.

o In the next screen, "How do you connect to the remote server?" choose None from the drop-down menu. Click Next.

o You will be able to view your site summary. Click on Done.

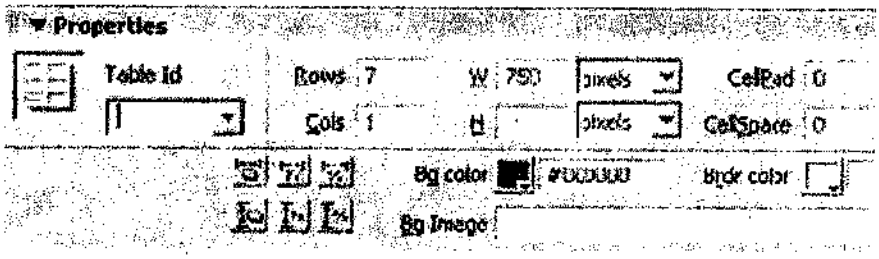
3. Now you are ready to work on your site. Create a file called my-layout.html (it may be any thing)in Dreamweaver by clicking on File/New.
Note: You need to visualize and organize your layout in such a way that you should be able to put them into rows and columns in a table in Dreamweaver.

4. Open my-layout.html. Click on Insert/Table to insert a table in your web page. Enter The following:
Rows : 7
Columns : 1
Table Width : 750 pixels
Border Thickness : 0
Cell Padding : 0
Cell Spacing : 0



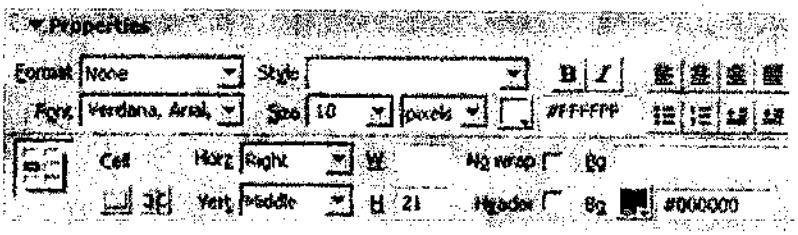
5. Now follow these steps :

Select the table and give 750 px and background as black in the Properties panel.



Keep your cursor in the first row and set the height as 21 pixels and choose Right from the Horz drop-down menu in the properties instructor. Enter the text Home | Sitemap | News | Downloads. Select the text and choose font Verdana size 10 pixels and color white in the properties panel. Dreamweaver will automatically create a style called style We will use this style for the rest of the links also.

We have entered 5 spaces between the links and the vertical bar or you can enter spaces by clicking on shift+Ctrl+Space.



- For the thin line effect in Dreamweaver, keep your cursor in the second row and set the height 1 pixel and insert a spacer by choosing it from your images folder (Insert/Image). Save it in your images folder. Give a gray background color #808080.

- Bring your cursor to the third row and enter a height of 78 pixels in the properties panel. Now we will insert another table (Insert/Table) with 1 row and 3 columns so that the logo is inserted in the left and the navigation links are inserted on the right.

Column 1: Give a width of 12 pixels. This is so that the logo does not stick to the edge of the page.
Column 2: Insert the logo image by clicking on Insert/Image and selecting logo.jpg from the images folder.
Column 3: Enter About Us | Services | Products | Clientele | Contact Us. Select the text and choose style 1 from the style drop-down menu. You should get the same style as the top navigation links - Verdana size 11 pixels and color white.

- Bring your cursor to row 4 and give a height of 103px. Select Insert/Image and choose banner.jpg from the images folder and click on ok. Your banner will be inserted here.

- Bring your cursor to row 5 and insert a table with 1 Row and 2 Columns.

Column 1: Insert a table with cell padding of 20 pixels. Your content will be inserted here. Give a font style for the content - Font: Verdana Size : 12 pixels Color : white.
Column 2: Give a width of 167 px and insert the graphics on the right by clicking on Insert/Image and choosing pic_right.jpg from the images folder.

- Row 6: Repeat steps of row 2 to get the thin gray line.

- Last and final row : Give the background color as #303030 and height as 21 pixels. Enter your copyright text and choose style 1 from the style drop-down menu in the Properties instructor. To preview your website in the browser, press F12. Now you have successfully created your website.

For publishing your site or upload your files to a remote server and make your site live. Follow the steps given below and you should be able to upload and publish pages easily and fast. Soon you'll see your site live on the Internet!

Steps to Making your Site Live

1. Open Dreamweaver
2. Click on Define Sites.. under the Site drop down menu
3. In the Define Site box that comes up, click on the New button
4. In the next dialog box that you see you need to enter the details of your site:

1.Enter a name for your site e.g. Entheos

2.In the local root folder box choose your local root folder using the folder icon .You can ignore the rest of the details required

Here's a screenshot of what it should look like -

5. This is the most important step so pay close attention here :
In the category box found on the left choose Remote Info. Here's where you need to fill out your ftp information to establish a connection to the remote server. In the Remote Info panel choose FTP in the Access drop down menu and enter the following details:
FTP Host: (your ftp host - it could be an IP address or your web site URL)
Login: (username)
Password: (password)
Host Directory: (this is the directory for your site - it could be the site root folder or a 'www' folder etc.)
Here's a screenshot of what it should look like -

6.Once you've entered all the details click on OK

7.If you're sure all the details have been entered correctly you're ready to connect to the remote folder and upload your files. Click on Connect from the Site drop down menu. If all goes well, you should be able to connect to the remote site and see all the remote files in the left pane.

8.Choose the local folder and click on Put from the Site drop down menu to upload the entire site to your remote site.

9.Once the entire local folder is transferred to the remote folder you can check your site online.
Note: Get is for downloading files and Put is for uploading files.

3.Microsoft FrontPage:

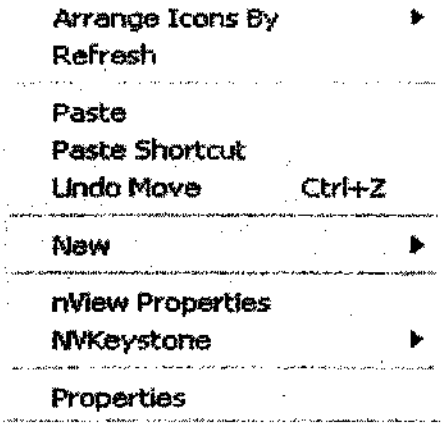
FrontPage 2003 from Microsoft is one of the best Web Publishing Tools on the market today. This sophisticated Web Authoring Application provides an intuitive user interface that has a similar look and feel to other Microsoft Office products. Although this web publishing tool is suitable for new web designers, it also provides advanced features that only professional web publishers would want to use. Because it is so simple to switch between the WYSIWYG (What You See Is What You Get) user interface and the "HTML Code" interface, one can easily view the HTML Code as pages are created. FrontPage also provides functionality to insert user-defined code into a page. This code is protected when changes are subsequently made using the WYSIWYG user interface. FrontPage 2003 has numerous features that enable software objects to be reused, thereby saving much development and maintenance effort. These features include support for shared borders, website "themes", "included" pages and system generated navigation bars and titles. The website generation capabilities of this popular Web Authoring tool are excellent. FrontPage remembers which objects need to be published to the web. Alternatively, users can specify objects that are to publish or can request that the entire website be re-published. FrontPage 2003 also provides XML capabilities that allow websites to interact with other websites over the Internet. In addition to integrating

with MS Access to provide data-driven functionality, FrontPage 2003 websites can also interface with SQL Server and XML databases and other databases using ODBC.

To design your web page we use following steps:

1.Create and name a folder on the desktop: In this step you will use the right mouse button to create a new folder on your Desktop and you will then rename the folder to reflect the project on which you are working.

a) Right click anywhere on the Desktop to open the menu



b) Go to 'New' > 'Folder' to create a new folder on the desktop and click on it.

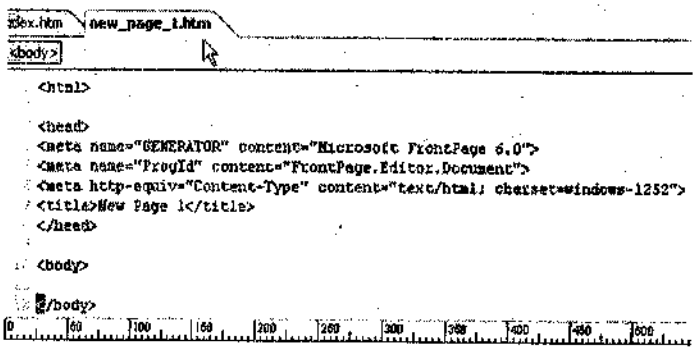
c) Right click on the folder and rename the folder 'biography' to reflect the project on which you are working.

d) From this point on, save everything you create for this project in this folder

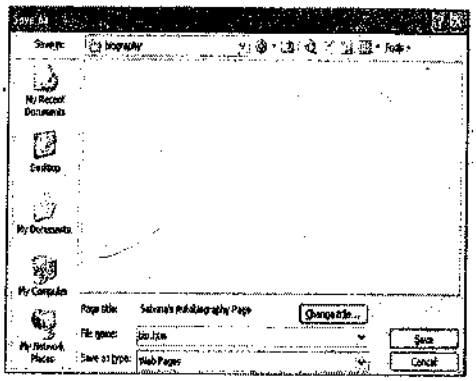
2.Open FrontPage and create a new blank page: In this step you will use the 'Start' button to open FrontPage and create a new blank page.

Click on the 'Start' button in the lower left of your computer screen. Go to 'All Programs' > 'Microsoft Office' > 'Microsoft Office FrontPage 2003' and click. Once FrontPage opens, click on the 'New Page' icon to create a new page in FrontPage

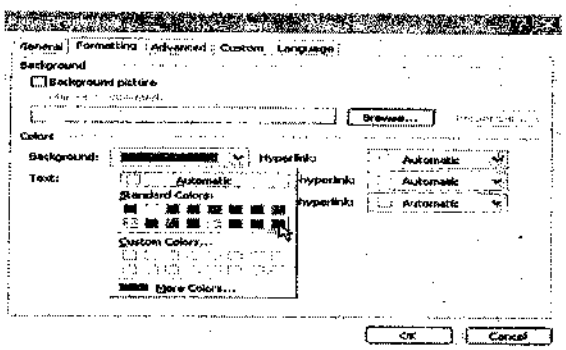
The new page should have a tab that has the heading 'new_page_1.htm'



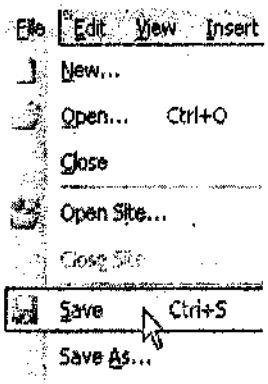
3. **Rename the webpage and save it in a folder on the desktop:** In this step you will rename the new blank page you created in FrontPage and save it in the folder you have created on the Desktop. Go to 'File' > 'Save As...' and click to open the window. Use the pulldown menu to navigate to your 'biography' folder on your Desktop and click on it. When the window pops up, select the 'Change title...' button and title your page whatever you want (Here I titled mine 'Sabrina's Autobiography Page') Click on the 'File name:' window and name your page 'bio.htm' Click on the 'Save' button



4. Choosing the background of the page and view in a browser: In this step you will choose the background of your page and then view the page in a browser window. First right click anywhere on the 'bio.htm' page to pull up the menu then go to 'Page Properties.' and click on from the 'Page Properties' menu, navigate to the 'Formatting' tab and click on the pulldown menu on 'Background' and then click on a color you want for the background and then click on 'OK'.

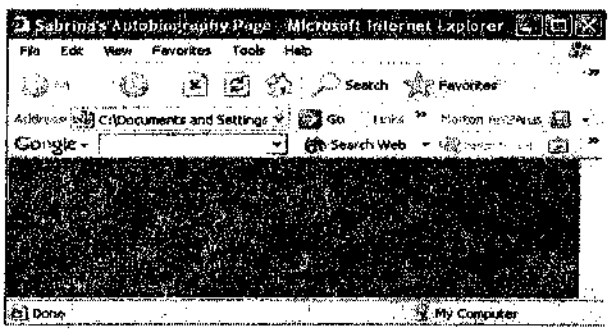


The entire 'bio.htm' page changes to that color by go to 'File' > 'Save' to save the changes to your folder automatically



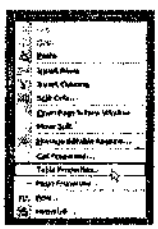
Click the 'Preview in Browser' icon on the toolbar to open a new window

This will allow you to view what your page will look like on the Internet Use this option often to check your progress as you build your site

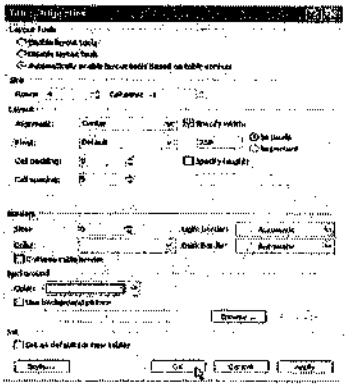


5. Inserting and modifying a table: In this step you will choose a table size and modify the properties of the table.

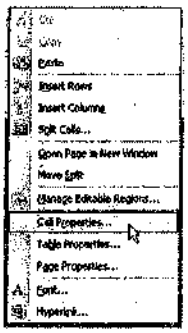
First click on the 'Insert Table' icon in the toolbar then highlight the number of cells you want to appear in your table and click. Right click on your new table to open the menu and click on 'Table Properties'.



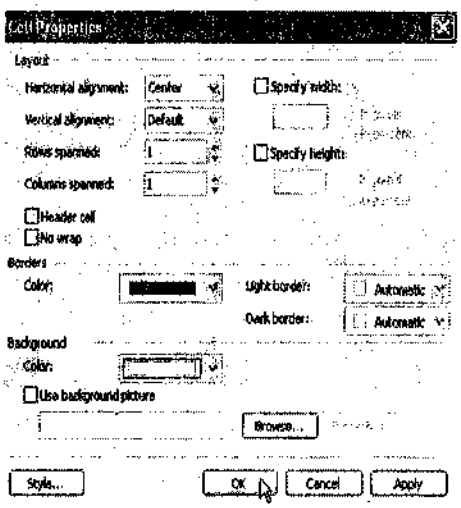
The 'Table Properties' window allows you to change the size, alignment, width, cell spacing, border size and color, and background color of the table. Experiment to get the look you want by clicking 'OK'. 'Cell padding' and 'Cell spacing' refer to the distance (in pixels) text and images will appear from the border.



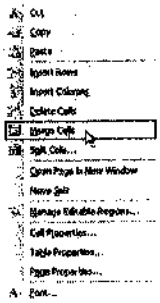
6. Modifying cells: In this step, you will learn how to modify individual cells in your table. Right click on the cell you want to modify and on the menu click on 'Cell Properties'



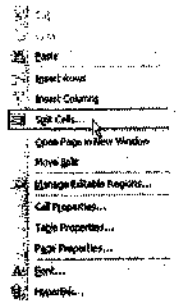
The 'Cell Properties' window allows you to modify many parts of individual cells. Use the pulldown menus to experiment with the look of the cells.



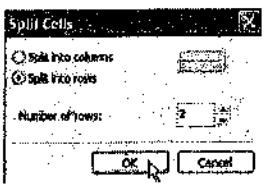
You may also merge the cell by highlighting the cells you want to merge into one Right click to bring up the 'Merge Cells' command and select it.

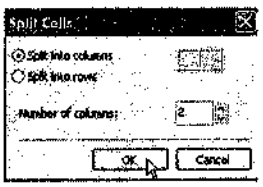


Or split an individual cell into rows and columns by right clicking on the cell to bring up the menu Select 'Split Cells...'



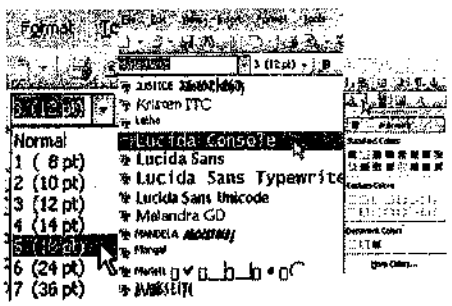
and then choose whether you want 'rows' or 'columns' and the number



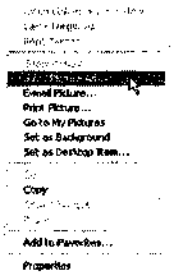


7.Modifying font: In this step you will learn how to modify the font. Highlight the font you want to change

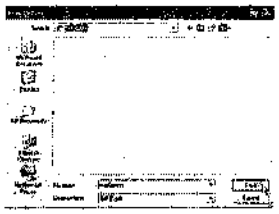
To change the font type , font size and color by clicking on the pulldown arrow next to the font type



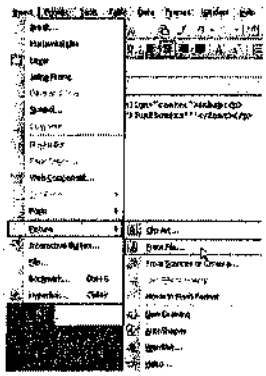
8. Inserting and modifying graphics: In this step you will insert and modify graphics you find on Google. Many sites on the Internet contain copyrighted graphics, so try to choose your images from sites that are copyright free. Right click on the image you want to insert into your document to pull up the menu. Click 'Save Picture As..'



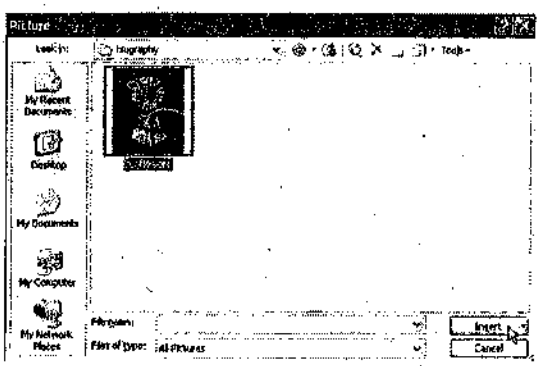
Save the picture in your 'biography' folder on your desktop



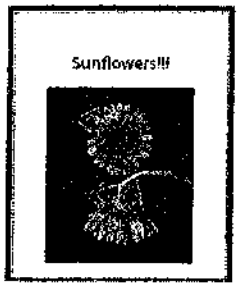
Click on the location you want the graphic on your page
Go to 'Insert' > 'Picture' > 'From File...'



Navigate to your picture and select it
Click 'Insert'



An example of the finished result



You may modify the picture by clicking on it and using the various tools on the 'Picture Toolbar'

9. Creating hyperlinks: In this step you will create hyperlinks.
There are three types of hyperlinks:
a. Links to outside websites
b. Links to other pages in your website
c. Links to places within the same document

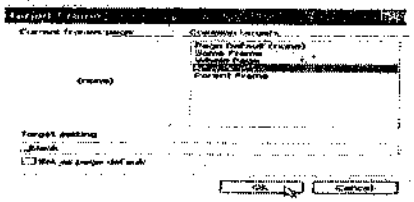
a. To link to an outside website (opens in a new window):

1. Highlight the text or graphic you want to link to an outside site

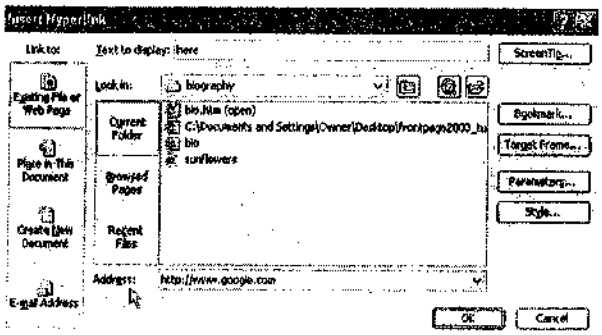
click [redacted] to go to Google

2. Click on the 'Hyperlink' icon on the toolbar to open the 'Insert Hyperlink' window

3. Select the 'Target Frame...' button
Select 'New Window'
Click 'OK'



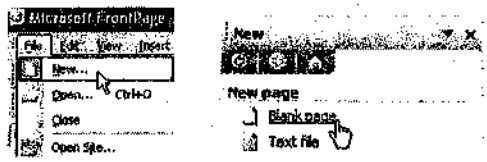
3. In the 'Insert Hyperlink' window, make sure 'Existing File or Web Page' is selected
Type in the full URL of the outside site in the 'Address' window
Click 'OK'



4. The word is now linked

b. Link to other pages in your website:

1. Go to 'File' > 'New...' and select 'Blank page' from the menu that appears



2. Use the steps outlined in Step 3 to name and save the page

3. Highlight the text you want to link to the new page

click here to go to

page 3

4. Click on the 'Hyperlink' icon on the toolbar

5. Make sure you select the 'Existing File or Web Page' icon in the 'Hyperlink' window Navigate to your 'biography' folder on the desktop and select the proper .htm page Do not select 'Target Frame...' > 'New Window' as you did in the previous example Click 'OK'.

6. The word is now linked

c. Linking to a place within the same document :

1. Click the cursor to the place in your document to which you want to navigate

2. Go to 'Insert' > 'Bookmark' and click

3. A 'Bookmark' window will appear, name your bookmark. Click 'OK'

4. A tiny 'flag' appears, representing a bookmark
(This flag will not appear when viewed in the browser)

5.Highlight the text or image in your page from which you wish to navigate
(In this case, we highlighted 'top' since I am wanting to navigate from bottom to top)

6. Click on the 'Hyperlink' icon and choose 'Place in This Document' and the name of the bookmark, Click 'OK'

7. The area you highlighted is now linked to the bookmark . You may now 'jump' from one area to another within the same page.

10. Create the page: In this final step you will assemble a webpage using all you have learned.

4.Photoshop:

Adobe Photoshop is a very popular commercial graphics editor available for the Mac and Windows operating system. Created for professional photographers and designers, it is the ideal application for manipulating images and creating web graphics. Photoshop has all the necessary tools and options you need such as: Filters – which automatically adds effects to your image or a selected section of your image, extensibility and automation with Brushes, Actions and Scripting, and workflow enhancement features like Layer Comps and the Revert option. We have designed a layout with a black background with an area for the logo, an eye-catching graphical header, navigation links, content and images. Remember while designing your layout, you need to define spaces for the Header - This could be a graphic banner ,Logo Buttons - Links for home, about us, contact us etc. ,Pictures ,Content area and Copyright Information .

Follow the following steps to design your website layout in Photoshop:

1.Open a new file in Photoshop by clicking on File/New and enter a width of 750pixels and height of 450px.

2.Color the background with Black by choosing black in the foreground color and selecting the paint bucket tool and click on the canvas. Your background will now be black.

3.Add a new layer by clicking on the Add Layer icon in the Layers panel. If your Layers panel is not open then go to Window/Layers. Name the new layer copyright . Select Rectangle Marquee Tool and drag to make the bottom banner with a width of 750pixels by 21 pixels. Color this banner with color #303030.

4.Choose Horizontal Type Tool. A text layer is created automatically.

Now enter the text for Copyright, e.g. "Copyright © 2005 www.YourWebBusiness.com(this may be any name)All Rights Reserved.

5.Choose Horizontal Type Tool. A text layer appears automatically. Enter the button text on the top banner too: "home l sitemap l news l downloads".

6.Add a new layer. Now make the gray horizontal line color #808080 with single Marquee tool. Go to Edit>Stroke. Choose Stroke width 1 pixel. Color #808080. Location Center. Click OK.

7.Right click on the layer and select duplicate layer 3 times, because you have 4 lines. Put the lines in their corresponding place: in bottom, middle, top.

8.Now you can enter the button text on the second top banner in a new layer e.g. About us l services l products l clientele l contact us.

9.Now define the logo area with the rectangular marquee tool. Go to Edit>Stroke. Choose Stroke width 1 pixel. Color is #808080. Location Center. Fill inside with Black color with Paint tool. Name it Logo area.

10.Choose the Horizontal Type Tool and write your company name or website name.

11.Choose the Horizontal Type Tool and enter content in the middle.

12.Insert your header and any image you choose. The image needs to be a horizontal banner. Open your image file. Go to move tool. Drag from your image file to this layout in the middle of the layout.

13.Draw the boxes seen on the right with the Polygonal Lasso Tool.

Go to Edit>Stroke. Choose Stroke width 1 pixel. Color is #808080. Location Center. Name your layer borderpics. Make two more Boxes. Adjust them equally in the right side of the layout. Insert the images by dragging them to your layout and naming the layers.

14.Drag the layer borderpics on top of the 3 pic layers. The edges of the pictures have to be cut according to the design of the box.

15.Now create the white bands with text at the bottom of each of the right graphics with the rectangle marquee tool. Fill the box with white color with Paint tool. Name it "whitebandpics". Choose the Horizontal Type Tool. A text layer is created automatically. Now enter the text for Gifts. Follow the same for the rest of the pictures. You can click here for the images - pic1, pic2, pic3. You can drag these images to your layout.

Now when your design is ready, you can go to the next step to creating your website which is to make. We are going to make a header like the banner below Following steps we use :

1. Click here to open and save the candle image. Right click on the image to save the picture. Save the picture in a website folder.

2. Open Photoshop and click on File/Open and select the header image from your website folder.

3. Name the layer header in the layers panel. Right click on the layer and select Duplicate Layer. Name the second layer candle.

4. Click on layer header and press shift+ctrl+u to desaturate the picture. You won't be able to see the desaturation as the layer is behind the candle layer. You can close the eye of the candle layer in the layers panel if you would like to view the effect of the destruction.

5. Now work on the candle layer. Select Elliptical marquee tool. Drag it to the candle. Select feather radius as 15.

6. Now click on Select>Inverse from the top menu and then delete.

7. Now press ctrl+D to deselect the candle. Make a new layer called candle border on top of the candle layer. Use the line tool to create a vertical line on the left and on the right of the lit candle.

5.Firebug:

Firebug is a free, open source in-browser web development tool for the Firefox web browser. It's many features include: The most popular and powerful web development tool

- Inspect HTML and modify style and layout in real-time
- Use the most advanced JavaScript debugger available for any browser
- Accurately analyze network usage and performance
- Extend Firebug and add features to make Firebug even more powerful
- Get the information you need to get it done with Firebug.

Including above HTML and CSS .Firebug integrates with Firefox to put a wealth of web development tools at your fingertips while you browse. The Document Object Model (DOM) inspection tool to help you quickly see how the elements of a web page relates to one another.Firebug's popularity is so immense it's one of the few Firefox extensions that have its own extensions (like YSlow and FirePHP).

6.Panic Coda:

Panic Coda is a shareware web development application for the Mac operating system. It seeks to reduce the amount of applications (such as an FTP client, CSS editor, a version control system, etc.) you need to develop websites and to improve your team's workflow. Coda's one-window web development philosophy uses a tabbed interface for text editing, file transfers, SVN, CSS, and even "Books" which embeds web books that are searchable their website . It's a text/code editor, with full color formatting to make code snippets more easily identifiable, and readable. It's allows us to save every site. This allows us to edit code live.One of best features in Coda is its CSS editor.

Self Learning Exercises

1.What is web authoring?

2.What is web-authoring software?

3.What do you me by WYSIWYG ?

4.What is site maintenance?

5. What is a URL?

4.4 WEBSITE DESIGN PRINCIPLES:

Many webmasters wish they could design great looking sites, but simply can't. They've given it a few attempts, but either due to lack of application knowledge (with apps like photoshop), or lack of "artistic talent", they give up. And that's fine, because it keeps the market for design healthy! ;) But no, it really

doesn't have to be like that. If you're an aspiring designer, there are a few key principles that you must considered. They are help you to becoming a good designer.

1. It's not the 90's anymore:

When the early pioneers of the internet age began designing websites in the 90's, they became fixated on the filters offered by programs like Photoshop. Lens flares, bevels, drop shadows, glows, were used to their fullest extent. You need to avoid abusing these filters. There are instances in which these filters can be a great benefit, but you have to know how to use them properly and not just slap them on anything and everything.

2. Usability:

Usability is all about making the visitor's experience a good one on your site. Things should be easy to read, easy to access and most importantly, easy to understand. When a visitor visits your site, they should know exactly what your site is about within the first couple seconds. This is obviously where design, and layout come into play. You need to avoid cluttering your site in the physical sense i.e. don't use "too much content", but rather how you choose to display that content. Things should be laid out with spacing and margins.

3. Text Do's and Dont's:

One of the really big fads that was prevalent in the early part of this decade, was the use of small fonts (size 10px or less for fonts). Never go below 11px font - and even 11px should only be used sparingly. Size 14px (which is what this is) seems most ideal for paragraph's of text. You can get away with 12px of course, but as screen resolutions are increasing, 12px suddenly becomes smaller. Line-height is very important. Line-height is the spacing between each line of text in your paragraphs.

4. Colors and Contrast:

The color theme of a site is obviously important. A lot of aspiring designers have a tenancy to use too many colors, simply because they're there. But , we recoomend ues of not more than 2 primary colors and a third "secondary" color . A simple color theme is easier on the eyes, easier to "comprehend" and overall just looks better. The color theme also needs to connect with the visitors and the purpose of the site. For example, I wouldn't use blue and florescent green/yellow for a site about health . The foreground text needs to either be very dark, or very light in comparison with the background color.

5. Design around the purpose of the site:

A lot of designers, those experienced and not, always use the same "formula" for layout and design elements. To really make an impressive and effective site, you need to fully understand what the purpose of the site is, and what the goals are. Whether the site is based around selling memberships, or just general ad-based content - the design should cater most effectively to the purpose.

6. Learn by example:

A common mistake for the aspiring designer is thinking they should be able to open up photoshop, and design a great looking site on their first try. Nope doesn't happen like that. You wouldn't pick up a guitar and start writing music without first learning a few songs right. If you do this a few times.

Notable mentions

Here are other tools that were voted on that are worth a quick mention.

- Adobe Flash
- Web Developer (Firefox extension)
- Aptana
- paper and pen/pencil (for paper prototyping/sketching).
- CSSEdit

- Not_epad++
- GIMP

Some More Editors

Coffee Cup HTML Editor

Microsft Visual Studio

Microsoft Expression Web Designer

Edit Plus

4.5 SUMMARY:

The World Wide Web is often referred to simply as 'the web' or www. The web allows the user to view information on the Internet. The main components - a server and a browser are connected and information exists on a host computer runs on web server software, which allows other computers to access web documents or pages. Basic web pages are written using HyperText Mark-up Language.

Web authoring tools and HTML editors range from simple text editors to high powered graphical authoring tools and content management systems.

There are two main types of software for creating Web sites: text editors and visual layout tools. With a text editor you write HTML in text mode and use a browser to preview the pages in a layout. A visual or WYSIWYG (What You See Is What You Get) layout tool lets you design pages in what we call a layout mode. Major Features of Web Authoring Tools are HTML Coding and Editing, Site Management, Ease of Use

WYSIWYG Editing, Support for Page Design, Layout and Coding, Page Preview JavaScript Integration, Color Coding of Syntax, Debugging, One in All solution for Editing, Running and Publishing, Browser Compatibility Testing, FTP Integration, In built Templates. There are two types of Web Publishing Tools. The first type is "code centric" and simply assists the web author to write and validate HTML code. The second type, is "page centric". Web Publishing Applications have become very sophisticated in recent years and can generate clean HTML code. Consequently, there is no need to write program code anymore. It is important, however, that the Web Authoring Tool does has the ability to insert additional HTML code (or scripts), on an as-needed basis. It is equally important that the "add-on" code that is inserted is not obliterated when changes are subsequently made using the WYSIWYG user interface.

WYSIWYG Web Authoring Applications permit the user to layout web pages, add text and graphics and create hyperlinks from one web page to another.Some good examples of great visual tools available to the vast majority of website developers and designers are from manufacturers like Macromedia (now Adobe) Dreamweaver and Adobe Photoshop CS, Firebug, Panic coda, FrontPage.

4.6 GLOSSARY

Authoring Authoring is the process of creating ,typically used to describe the process of designing and, at technical level , building a website, CD-ROM or DVD. While authoring may extend to content creation (writing text, creating images, etc.), common usage infers an emphasis on programming/coding.
CSS Casscading Style Sheets The best, and current, way to add customised styling (a particular "look") to webpages. It's based on techniques used in professional printing, where page content and the style of display are separately handled. This page uses CSS to make it look prettier than just a plain page.
Dynamic HTML Dynamic HTML is an extension to the standard HTML language introduced by version 4+ browsers (Netscape Navigator and Internet Explorer). "Dynamic" makes reference to changing the webpage display in response to user interaction.
HTML Hyper-Text Mark-up Language
The usual language used to write webpages. It allows the creation of documents that can be easily read on any computer, and for those documents to link to other resources.

IP address. For example 220.227.7.42

Web The 'web is a network of files that can be accessed with a software 'viewer' or browser. Files can include text, imagery, and time-based media. The web can also be used to access remote services.

Web-authoring application/tool A computer program used to create or maintain websites is often referred to as a 'web-authoring tool'. Examples include: Macromedia Dreamweaver, Adobe Go-live Cyberstudio, Microsoft FrontPage, and BBEdit.

Web browser A web browser is a computer program used to access the web pages. A browser can also be used to download files, send and receive email, or short messages across the Internet. World-Wide Web (WWW), web World-Wide Web is an example of an Internet application.

4.7 FURTHER READINGS:

1. WWW Design Issues by Bob Breedlove.
2. HTML 2.0 Proposed Standard - RFC 1866 ,T. Berners-Lee, D. Connolly November 1995. ftp://ds.internic.net/rfc/rfc1866.txt.
3. W3C Recommendation for HTML 3.2Dave Ragget.

4.8 ANWERS TO SELF LEARNING EXERCISES

1. Web authoring is the use of HTML software to create web content to be published on the Internet. Web content is information used to inform and entertain. Web content can also be information that represents a business who sells merchandise, offer a service or provide a service by displaying information from a web page or we can say a category of software that enables the user to develop a Web site. The software will generate the required HTML coding for the layout of the Web pages based on what the user designs.

2. Web authoring software, commonly referred to as an HTML editor, is an application used to create web pages. This software allows users from novice to advanced to design web pages that can be displayed on the Internet. Web authoring software allows website creators to work with HTML, CSS, JavaScript and XML. The software often includes an FTP program, which is used to transfer files to a remote server.

3. What You See Is What You Get (WYSIWYG) web authoring software displays the content in a graphical format

4..Site maintenance is a fee paid monthly to keep your site updated with new content that you provide..Most good web sites have new content updated regularly. Fresh content is what will keep your visitors coming back. This is an optional service that we provide for our customers. If you want to maintain your website yourself you can do so.

5. It stands for "universal resource locator". This is the address typed in to view your web page on the Internet. For example, you would type in http://www.hooverwebdesign.com to access our home page.

4.9 UNIT END QUESTIONS:

1. Create an autobiographical webpage with the components listed below:

- At least one table that has been modified to reflect your personal choice of alignment and color
- At least two examples of modified fonts
- At least two graphics that have been saved and modified by using the picture toolbar
- At least two hyperlinks that navigate within the webpage

- At least two hyperlinks that link to outside sites and open in a new window.

2. What are the main components of a web? How to design a web page?
3. Explain the client server architecture?
4. Write steps to create website in Photoshop?
5. Explain key principles that you must considered when you design a web site.
6. Create a website in photoshop with the components listed below:
   - At least one table that has been modified to reflect your personal choice of alignment and color.
   - Insert a hyperlinks that navigate within the webpage.
7. What are the basic factors we must consider to design a website ?

***

UNIT V

HTML BASICS

STRUCTURE OF THE UNIT

5.0 OBJECTIVES:

The objective of this unit to make the student familiar with HTML tags so that they can design their own web pages. The most important benefits are that the students can read the code of other people's pages and can do the work themselves, when the editor simply refuses to create the effects they want and also they can write their HTML code by hand with almost any available text editor, including notepad that comes as a standard program with Windows. A more popular choice is to use a special HTML editor - maybe even one that puts focus on the visual result rather than the codes - a so-called WYSIWYG editor ("What You See Is What You Get").

5.1 INTRODUCTION

Web pages are written in HTML - a simple scripting language.HTML is a language for describing web pages.HTML stands for Hyper Text Markup Language .Hypertext is simply a piece of text that works as a link. HTML is not a programming language, it is a markup language. A markup language is a set of markup tags and markup Language is way of writing layout information within documents.HTML uses markup tags to describe web pages. Basically an HTML document is a plain text file that contains text

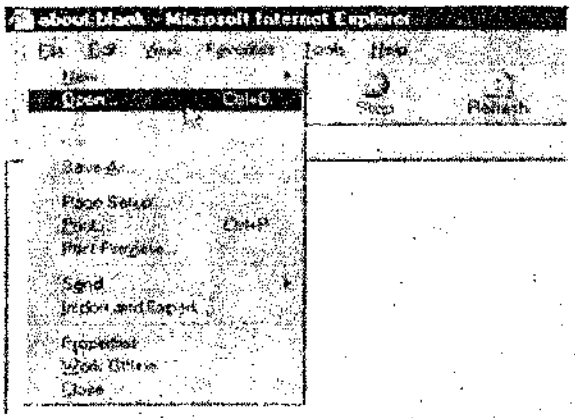
When a browser opens an HTML file, the browser will look for HTML codes in the text and use them to change the layout, insert images, or create links to other pages. Since HTML documents are just text files they can be written in even the simplest text editor. Some of the most popular HTML editors, such as FrontPage or Dream weaver will let you create pages more or less as you write documents in Word or whatever text editor you're using.

5.2 BASIC HTML TAGS:

If we want to make our own web pages we must know the HTML tags. The tags in the HTML language are contained by <> symbols. Most of the tags include a starting <tag> and a closing </tag> (notice the '/' in the closing tag). Anything between the tags is affected by the tag function or we can say HTML tags are keywords surrounded by angle brackets like <html> HTML tags normally come in pairs like <html> and </html> .The first tag in a pair is the start tag, the second tag is the end tag. Start and end tags are also called opening tags and closing tags.All we need to do is type the following code in word pad or note pad.

The code we use for any page we make, is shown below:

<html><head><!— This section is for the title and technical info of the page. —></head><body><!— This section is for all that you want to show on the page. —>Hi there, you have just written your first Web page! </body></html>



After this save the document, making sure to put an .html extension or an .htm extension to the file (for instance "myfirstpage.html"). Now we will want to use our Web browser to view the file we just created. So, start up your Web browser. If we are given an option to connect to the Internet, we can cancel the connection and we will likely end up with a blank page. We may also see an error saying the browser could not connect to "http:// myfirstpage.html " or something similar. We should be able to hit OK and get a blank page. Now, in the location box (where you manually type URLs), type in the path to your HTML file.

In the given code the head is used for text and tags that do not show directly on the page. The body is used for text and tags that are shown directly on the page. All normal WebPages consist of a head and a body. The <title> and </title> tags display the title of your page. The title is what shows in the top of our browser window when the page is loaded. Another thing we will often see in the head section is metatags. Metatags are used for, among other things, to improve the rankings in search engines. Quite often the head section contains javascript which is a programming language for more complex HTML pages.Finally, more and more pages contain codes for cascading style sheets (CSS).

CSS is a rather new technique for optimizing the layout of major websites.

Headings:

Headings are defined with the <h1> to <h6> tags.<h1> defines the largest heading. <h6> defines the smallest heading.

```
<html>
 <body>
 <h1>My first heading</h1>
 <h2>My second heading</h2>
 </body>
 </html>
```

The above code produces the below results.

My first heading

My second heading

5.3 ATTRIBUTE:

The elements give structure to a HTML document and tells the browser how you want your website to be presented . In some elements you can add more information. Such additional information is called an attribute. Or we can say an Attribute helps us in actually customizing most of the tags present in HTML. An attribute is a keyword that we use in an opening tag to give more information to the web browser. This tag is very helpful in HTML.

Example <h2 style="background-color:#ff0000;">My HTML first page</h2>

Attributes are always written within a start tag and are followed by an equals sign and the attribute details written between inverted commas. The semicolon after the attribute is for separating different style commands. We will get back to that later. There are many different attributes. In the given example for heading 2 background is set. Other attributes are set with different tags which are explain with them.

5.4 CREATING HTML PAGES:

The basic tags in HTML that used to just get copied from one document to another without ever changing are becoming important to the overall layout of a Web page. So to create HTML pages we need following tags which are common to all pages.

<HTML> : </HTML>

This tag is placed at the beginning and end of the entire HTML page and lets the server know that it is an HTML document.

<HEAD> : </HEAD>

This tag is placed at the top of the document, we use <TITLE> tag within it.

<TITLE> : </TITLE>

This tag encompasses the title of the document (usually displayed in the top frame of the browser window).

<BODY> : </BODY>

This tag contains all HTML tags within the body of the document. Any changes to the background, colors of text, and the margins of the document are applied within the <BODY> tags. The following attributes are applicable to this tag.

<BODY BACKGROUND=>

This attribute selects a graphic file and tiles it as the background for the HTML document. Here is an example:

<BODY BACKGROUND="/images/xyz.gif">

<BODY BGCOLOR=>

This attribute set the background color of the HTML document with the specified color. The default background color (if none is specified in the BODY tag) is gray. For example, this code changes the background color to white:

<BODY BGCOLOR="#FFFFFF">

<BODY BGCOLOR="WHITE">

<BODY TEXT=> This attribute colorizes the text in the HTML document. The default text color (if none is specified in the BODY tag) is black.

<BODY LINK= VLINK=>

The LINK attribute changes the color of the text hyperlinks, and the VLINK attribute changes the color of the text hyperlink after it has been visited. In most browsers, the default link color (if none is specified in the BODY tag) is blue, and the visited link is usually red (Microsoft Internet Explorer) or purple (Netscape Navigator).

<BODY BACKGROUND= BGPROPERTIES=>

The BGPROPERTIES attribute can only be used in conjunction with the BACKGROUND tag, and it has only one value: FIXED. Basically, this attribute holds the background graphic so that it does not "scroll" down with the rest of the content (Internet Explorer-only).

<BODY BGSOUND SRC=>

The BGSOUND tag enables a Web designer to play a sound file (music, voice, sound effect, and so on) without the visitor having to actually click on anything. The sound file loads last (after graphics and text) and immediately starts playing. At the time of this writing, only Internet Explorer supports this tag. This tag has the following attributes:

<BODY BGSOUND= LOOP>

The LOOP attribute defines the number of times the sound file is to play-for example, LOOP="2". To make the sound file play continuously, use this command:

LOOP="infinite"

These tags are used in combinations. Any combination of the preceding BODY attributes can be used within the BODY tag, with the exception of the BGCOLOR and BACKGROUND attributes because they essentially serve the same purpose, and the BGPROPERTIES attributes, which can only be used in conjunction with the BACKGROUND attribute. Here are two examples:

<BODY BGCOLOR="#FFFFFF" TEXT="#000000" LINK="#FFFFFF" VLINK="#FFFFFF">

<BODY BACKGROUND="/images/graphicname.gif' TEXT="#FFFFFF">

HTML Paragraphs:

HTML paragraphs are defined with the tag. The text between and is displayed as a paragraph

.

```
<html>
<body>
<p>My first paragraph</p>
</body>
</html>
```

The element has a start tag and an end tag .As with the basic HTML body tags mentioned previously, the paragraph tags are becoming more dynamic. The paragraph break can be placed at the

beginning or end of a paragraph. It can also be used before or after a graphic to move it "down" from the above text or graphic. The paragraph break has the following attribute: HTML elements can have attributes. Attributes provide additional information about the element .As the above mention attributes are always specified in the start tag. Attributes come in name/value pairs like: name="value"

<P ALIGN=>

This is an HTML extension. Therefore, only the newest browsers support it. The following are examples of its use in justifying text to the right and left:<P ALIGN=RIGHT> or <P ALIGN=LEFT> or to align center the text <P ALIGN=CENTER> The default justification for anything on a page is left.

<DIV>

This is a proposed addition to HTML 3.0. Although this tag is similar to <P>, it will be able to handle several types of paragraph breaks within this command. At the time of this writing, Netscape Navigator is the only browser supporting it and is only supporting the ALIGN attribute.

<DIV ALIGN=>

Until the other features mentioned earlier are implemented, this is the only attribute recognized by Netscape Navigator, and it is identical to the <P ALIGN=> attribute .The following are examples of aligning left and right:

<DIV ALIGN=RIGHT> or <DIV ALIGN=LEFT> if we align centers to the text:

<DIV ALIGN=CENTER> . Again, the default justification for anything on a page is left.

5.5 FORMATTING:

FONT: The .... tag is the most used HTML tag. It allows you to specify the color, size and font of text. The basic use of the font tag involves setting a font using:

```
<font face="Arial">Text</font>
<p>
<font size="14" face="Arial">
This is a paragraph.
</font>
</p>
```

Here we can change size and font type within a paragraph.
The output is display as follows:

This is a paragraph.

But this does introduce a problem, that of different computers accessing a page. Unlike publishing methods such as print, it is up to the user's computer, not the printer, to render the pages, so they can look different on all computers. This is especially noticable with the font face attribute, as it is very rare to have a font installed on every computer that visits a website. Because of this the HTML specification has a system built in where multiple fonts can be specified. For example, you can use:

```
<font face="Arial, Helvetica, sans-serif">
```

which would tell the browser to first try to display the text in Arial, if that wasn't found try Helvetica and if not use the standard sans-serif font. This allows you to have control over how pages are displayed by browsers without the correct font, although it is far from perfect. The best uses for this tag, are if you really want to use a non-standard font (and don't want to use stylesheets) or if it is important that you

can accurately predict how pages will look on other computers.
Now, suppose you want to change the font color. This is done in much the same way. Here is the tag:

We replace the word color with a color name or the hexadecimal color value. Let's do one using the color name to begin:

I'm red!
I'm red!

Now let's use the hexadecimal value for red. The hexadecimal representation begins with a # sign and is followed by six letters and/or numbers. Here is the example:

I'm red!
I'm red!

Bold:
For bold we use b or strong. The starts tag or indicate that whatever follows should be written in bold. The corresponding end tag or indicates that the browser should stop writing text in bold.

For example:

<html>
<body>

This is an example of bold

</body>
</html>

Output is as follows:

This is an example of bold

Italic: For italic we use i or em . The start tag or indicates that whatever follows should be written in italic. The corresponding end tag or indicates that the browser should stop writing text in italic. Again, it really doesn't matter whether you choose to use or , but screen readers can often recognise and emphasised text.

For example:

<html>
<body>

This is an example of italic

</body>
</html>

Output is as follows:

This is an example of italic

Underline: For underline we use u. The start tag <u> indicates that whatever follows should be written text in underlined. The corresponding end tag </u> indicates that the browser should stop writing text in underlined. For example:

For example:

<html>
<body>

<u>This is an example of underline</u>

</body>
</html>

Output is as follows:

<u>This is an example of underline</u>

Center: Use the tag. Anything you place between the and tags will be centered on the page. For example: I'm in the middle of the Web Page !

This will give us the following:

I'm in the middle of the Web Page!

You can also use it with one or more of the other tags above, like this:

<u> I'm in the middle of the Web Page !</u>

<u>I'm in the middle of the Web Page!</u>

Strikethrough:

Strikethrough, is used to 'cross out' text:

<strike>Text</strike>

For example

<html>
<body>

<strike>This is an example of strike</strike>

</body>
</html>

Output is as follows :

~~This is an example of strike~~

Subscript and Superscript:

Subscript and superscript (text slightly above or below the line) is something which has long been supported, but is not common as it is only commonly used in scientific applications. There are other uses, though, and it is not a difficult tag to implement. For sub script we use for super script we use <super> </super>.

4 x 4 X 4 = 4<super>3</super>

Output is as follows :

4 x 4 = 43

H₂O

Output is as follows:

H2O

Preformatted Text

HTML has been designed so that it ignores multiple spaces in documents, for example if you enter two standard spaces it is rendered as one. Although this allows indentation of code without changes to the

presentation on screen, it does make it difficult to display some sorts of content (such as pre-formatted tables written in plain text). For this, you can use the <pre> tag. This stands for preformatted text, and will display the text exactly as it appears in the document source. The <per> tag renders text exactly as it is typed between the <per> and the end tag: </per>. Normal line breaking is disabled, creating text that flows off to the right of the browser window. This tag is shown on-screen as monospaced in order to enable a designer to retain specific spacing needs (such as source code).

For example :

```
<pre>

Name    address
____    _______
Smith    abc
John     xyz
</pre>
```

output is as follows :

```
Name    address
____    _______
Smith    abc
John     xyz
```

Example :

```
<body>
<pre>
        ///\\___
        (@ @)
 +----oOO----(_)----------+
 |  This is for You   |
 +-------------------oOO---+
        |_|_|
        || ||
        ooO Ooo
</pre>
</body>
```

The following output is display :

```
        ///\\___
        (@ @)
 +----oOO----(_)----------+
 | This is for You
```

+————————————oOO——+

|__|__|

|| ||

ooO Ooo

5.6 HTML LINKS:

A link provides:

1. Links within a page or jump from section to section within the same web page.
2. Link to a different page within your own website (such as my linking this lesson to the next lesson or to my home page).
3. Link to another web page or website anywhere in the world

There are different ways to provide these links. The three most common ones are:

1. Links within a page - page jump:

If we want to read this lesson choosing a topic and going directly to that topic. Many viewers do not want to waste a lot of time searching and so offering page jumps will make this process easier. So with Page Jumps, you have the option of jumping to different sections or topics without having to search through the entire web page for the topic. You can also think of page jumps as bookmarks. You place bookmarks at different places on your web page and then at the top of your web page you provide links to these bookmarks. You must assign a name to each bookmark, otherwise the browser will not know where the bookmark is located. Here is the basic link command that points to another section on your web page.

<A HREF="#linkname">Click on these words to go to the bookmark</A>

When the name attribute is used, the <a> element defines a named anchor inside a HTML document. Named anchor are not displayed in any special way. They are invisible to the reader. Named anchor syntax: Any content.The link syntax to a named anchor: Any content.

Here "linkname" is the name of the section you are jumping or linking to. That is, a section of the web page has been bookmarked with the name "linkname".

2.Linking to another page in your website:

If my main home page is the web page that contains a table of all these units. If you want to study a particular topic then you can go to my home page and choose the needed unit. Each unit in this course is also a web page, but it is not my home page. All my web pages (or simply "pages") taken together make up my website. In the table on my home page, when you choose a unit, the unit appears on the screen through a basic link command. Thus each cell in the table is a link to a unit. At the end of each unit, I have three links - one giving you the option of returning to my home page, one to my alternate home page, and one to go on to the next unit.

Linking to pages within your own website is easy to do. Recall that the basic command for a page jump studied in the last section is:

<A HREF="#linkname">Click on these words</A>

Well, to link to another page such as to your home page, just replace the #linkname with the name of your file as in:

<A HREF="filename.htm">Click on these words</A>

For example, if your home page was named index.doc, you could have:

<A HREF="index.doc">Go back to home page</A>

which will be displayed in the browser as:

Go back to home page

If you do click on these words, the browser will immediately load my home page.

Note the following points with the above command:

1. As before, the A stands for anchor and in this case, it begins the attachment to another page.
2. HREF as before, tells the browser that this is where the link is going to.
3. The value of the attribute HREF is " index.doc ". That is, " index.doc " is the file or document name of the web page you are linking to. The file name must be enclosed with quotation marks.
4. Since the words "Go back to home page" are contained between the anchor tags <A> and </A>, a person can click anywhere on those words and the browser will load the home page.
5. You do not need a <ANAME="filename"></A> command as the file (in our example, " index.doc ") already exists.

When you lay the mouse pointer anywhere on the words, "Go back to home page", you will see the file name ("index.doc ") and its location displayed on the status line at the bottom of the browser screen. In other words, the complete URL is displayed.

3. Linking to another page anywhere in the world:

Often you see web pages with links to other web pages or websites and these other web pages can be anywhere in the World Wide Web (WWW). To link to any page in the world, just replace the file name with the complete address (URL) of the page you want to link to. Remember that you must also enclose the complete address (the URL) of the link with quotation marks. For example, the command

<A HREF="http://www.xyz.com/">Want to cone-mail a greeting card to someone?</A>

5.7 HTML LIST TYPES AND ITS TAGS:

1. **Unordered list:** Unordered list show bullets or we use <ul type =DISC>.Here ul for unordered list and li for list. Tag for unordered list is ….

```
<ul>
<li>First item</li>
<li>Next item</li>
</ul>
```

The output of this like

- First item
- Next item

This is a Netscape-only attribute that enables the change of a bullet (the <LI> tag) within the <UL> tag. Values are DISC, CIRCLE, or SQUARE.

If we use <ul type =circle > then output is as

- o First item
- o Next item

If we use <ul type =square > then output is as

- § First item
- § Next item

This is a Netscape-only attribute that enables the change of a bullet (the <LI> tag) within the <UL> tag. Values are DISC, CIRCLE, or SQUARE.

2. **Ordered list :** For ordered list we use ol. Tag for ordered list is <ol>...

```
<ol>
<li>First item</li>
<li>Next item</li>
</ol>
```

Output :

1. First item
2. Next item

3. Definition list: For defining the heading of a text we use definition list.<dl> ..</dl> tag is use for definition list.

```
<dl>
<dt>First term</dt>
<dd>Definition</dd>
<dt>Next term</dt>
<dd>Definition</dd>
</dl>
```

Output is as follows :

First term

Definition

Next term

Definition

5.8 HTML TABLE

In html you can create table with the help of <table></table > tag .

```
<table>
.....contents of table.....
</table>
```

The <table> tag begins the table, you place what you want inside, and end the table with the </table> tag. To begin adding contents to your table, you will need the <tr> and <td> tags. The <tr> stands for table row and the <td> stands for table data, which is what you will place after this tag. You end a table data section with the </td> tag and each table row with the </tr> tag. Here is a basic table with just one cell:

```
<table>
<tr>
<td>
This is my table!
</td>
</tr>
</table>
```

The table will turn out like this:

This is my table!

Here is no border, to get the border we just add the border command to the <table> tag, like this:

```
<table border="2">
<tr>
<td>
This is my table!
</td>
</tr>
</table>
```

now the table has the border around it:

This is my table!

you can set the border to be as big or small as you like by changing the number inside the quote marks. If you set it to border="0", you will have a table with no border around it. Of course, you probably want the table to have more than one cell in it. To add another cell on the same line, just use the <td> tags again, like this:

```
<table border="2">
<tr>
<td>
This is a cell
</td>
<td>
This is a cell
</td>
</tr>
</table>
```

And now we have two cells

If you want to go to the next line, or in table terms, the next row. To do this, you use a new set of table row tags, <tr> and </tr>:

```
<table border="2">
<tr>
<td>
This is a cell
</td>
<td>
This is a cell
</td>
</tr>
<tr>
<td>
This is the new row
</td>
<td>
I'm on the new row, too!
</td>
</tr>
</table>
```

Now the table contain two rows, each with two cells

This is a cell	This is a cell
This is the new row	I'm on the new row, too!

There are a couple of commands you can add to the <table> tag to get more spacing between cells. Here they are:

1. cellspacing="“

Use this command to add more space around each cell. Place a number inside the quote marks.

2. cellpadding="“

Use this command to add more space inside each cell. Place a number inside the quote marks.

Let's say we added the cellspacing command to our last table, and set it to equal 12, like this:

<table border="2" cellspacing="12">

You can add just about anything you would like inside the cells. You can add links, images, headings, paragraphs and more.

To use a link inside a cell, just place the link tag inside your <td> tags, like this:

```
<td>
<a href="http://www.pageresource.com">My Web Site!</a>
</td>
```

you want table headings for listing data, you could use the <th></th> tags on the first row of the table rather than <td></td> tags:

For example

```
<table border="1">
<tr>
<th>NAME</th>
<th>ADDRESS</th>
</tr>
<tr>
<td>RAM</td>
<td>ABC</td>
</tr>

<tr>
<td>SHAM</td>
<td>XYZ</td>
</tr>

</table>
```

OUTPUT:

NAME	ADDRESS
RAM	ABC
SHAM	XYZ

You may have noticed that most everything is aligned to the left side of each cell. This is the default setting. In the next section we will cover how to change the alignment of your cell contents, make cells stretch across more than one column or row, define a table width, and change cell background colors.

5.9 TABLE STRUCTURE AND HIERARCHY:

Tables within Tables or Placing tables inside a larger table many of these effects can now be achieved using Cascading Style Sheets. If you need to put two tables on the same line on your page. The table tag automatically sends you to the next line .We can get around this by placing your two tables inside one large table, thus keeping them on the same line.

To place one table inside another. We use following code:

```
<table width="80%" border="6"> <!— starts the big table —>
<td align="center"> <!— starts the first cell of the big table —>
<table width="80%" border="2"> <!— we use another table as the cell data for the big table —>
<td align="center"> <!— starts the small table inside —>
I'm inside the small table! <!— the contents of the first cell of the small inside table —>
</td> <!— ends the table cell of the small inside table —>
</table> <!— ends the small inside table —>
</td> <!— ends the cell of the big table which contained the small table —>
</table> <!— ends the big table —>
```

Here we must remember to which table you are in while you are writing the code. To hide the appearance of the big table, we set the border on the big table to zero. Here is the example:

```
<table width="80%" border="0">
<td align="center">
   <table width="99%" border="4">
   <td align="center">
   I'm in the first small table! ha!
    </td>
    </table>
</td>
<td align="center">
   <table width="99%" border="4">
   <td align="center">
   I'm in the second small table! ha, ha!
    </td>
    </table>
</td>
</table>
```

5.10 ADDING PICTURES:

If you want to include text and pictures on a web page. Say you want a picture of your cat to appear righ next to a short description of her. Here's one way to do that

<img src="images/whitekitten.jpg">This is my cat

This is my cat "SRC" is a required attribute. "HEIGHT", "WIDTH", "ALT", "BORDER" and "ALIGN" are optional attributes. To change the size of the image, I'm going to add these two commands inside the image tag: width="" and height="" .The tag will now look like this:

5.11 PAGE ACCESSIBILITY:

Accessibility of web pages by those with physical, eye-sight or other disabilities is not only a good idea considering the importance of the web in modern society, but is also mandated by law. In the U.S., the Americans with Disabilities Act and in the U.K., the Disability Discrimination Act place requirement on public web sites. In many other countries similar laws either already exist or soon will. Making pages accessible is more complex than just making them valid; that is a prerequisite but there are many other factors to be considered. Good web design, whether done using a WYSIWYG tool or not needs to take account of these too.

Whatever software tools are used to design, create and maintain web pages, the quality of the underlying HTML is dependent on the skill of the person who works on the page. Some knowledge of HTML, CSS and other scripting languages as well as a familiarity with the current W3C recommendations in these areas will help any designer produce better web pages, with a WYSIWYG HTML editor and without.

5.12 COLOR AND BACKGROUND COLOR:

Colours can be applied by using color and background color

You can apply the color and background-color properties to most HTML elements, including body, which will change the colours of the page and everything in it.

For instance a background colour:

Example

```
<html>
<head>
<body bgcolor="black" text="red" link="yellow" alink="orange" vlink="white"
background="image.gif">
</body>
</head>
</html>
```

The following attributes are use with body tag.

BGCOLOR background color

TEXT body text color

LINK link text color

VLINK visited link text color

ALINK link text color, while mouse is pressed

This will show a completely black page in the browser .Some tags and attributes use US spelling i.e. color instead of colour. In the above example, we asked for the background colour with the code "#000000". This is the colour code for black using so called hexadecimal numbers (HEX). Each colour has its own hexadecimal number. Here are some examples:

White: #ffffff
Black: #000000 (zeros)
Red: #ff0000
Blue: #0000ff
Green: #00ff00
Yellow: #ffff00

A hexadecimal colour code consists of # and six digits or letters. There are more than 1000 HEX codes and it is not easy to figure out which HEX code is tied to a specific colour. We can also use the English name for the most common colours (white, black, red, blue, green and yellow).

For example: <body style="background-color: red;">

```
<html>
<head>
  <title> This is my Web Page! </title>
</head>
<body bgcolor="yellow">
</body>
</html
```

The <body></body> tags also control the background color of your web page using the bgcolor modifier. You can also put in background textures using the background modifier.

This is my Web Page!

Self learning exercises

1. Who develops HTML?

a. WWW

b. W3C

c. AT&T

d. Bell

2. We send and receive HTML file using which protocol?

a. SMTP

b. POP3

c. HTTP

d. FTP

3. Which sequence of HTML tags are correct?

a. <html><head><title></title></head><body></body></html>

b. <html><head></head><body><title></title></body></html>

c. <html><head><title></title><body></body></head></html>

d. <html><title></title><head></head><body></body></html>

4. Which command we use to add an Image?

a. <image src="url">

b. <img src="url">

c. <src img="url">

d. <img srcimg="url">

5.HTML stands for

a. Hyper Text Making Links

b. Hyper Text Markup Language

c. Higher Textual Marking of Links

d. Hyper Text Mixer of Links

5.13 CODE AS LANGUAGE:

HTML is a structured markup language. There are certain rules on how HTML must be written if it is to conform to w3c standards for the World Wide Web. Following these rules means that web sites are accessible on all types and makes of computer, to people with disabilities, and also on wireless devices like mobile phones and PDAs(personal digital assistant), with their limited bandwidths and screen sizes. Most HTML documents on the web go beyond the requirements of w3c standards. Current w3c recommendations on the use of CSS(Cascading Style Sheets) with HTML were first formalized by W3C in 1996 and have been revised and refined since then.

These guidelines emphasize the separation of content (HTML or XHTML) from style (CSS). This has the benefit of delivering the style information once for a whole site, not repeated in each page, let alone in each HTML element. WYSIWYG (What You See Is What You Get) editor(explain in editor) designers have been struggling ever since with how best to present these concepts to their users without confusing them by exposing the underlying reality. Modern WYSIWYG editors all succeed in this to some extent, but none of them has succeeded entirely. However a web page was created or edited, WYSIWYG or by hand, in order to be successful among the greatest possible number of readers and viewers, as well as to maintain the 'worldwide' value of the Web itself, first and foremost, it should consist of valid markup and code. It should not be considered ready for the World Wide Web, until its HTML and CSS syntax have been successfully validated using either the free W3C validator services (W3C HTML Validator and W3C CSS Validator) or some other trustworthy alternatives.

5.14 BROWSER DIFFERENCES:

Browsers and computer graphics systems have a range of user settings.

Resolution, font size, colour, contrast etc can all be adjusted at the user's discretion, and many modern browsers allow even more user control over page appearance. All an author can do is suggest appearance. Different browsers and applications will render the same markup differently. The same page may display slightly differently in Internet Explorer and Firefox on a high-resolution screen, but it will look very different in the perfectly valid text-only Lynx browser. Usability in a speech or braille browser, or via a screen-reader working with a conventional browser, will place demands on entirely different aspects of the underlying HTML. Printing the page, via different browsers and different printers onto various paper sizes, around the world, places other demands. With the correct use of modern HTML and CSS there is no longer any need to provide 'Printable page' links and then have to maintain two versions of the whole site. Nor is there any excuse for pages not fitting the user's preferred paper size and orientation, or wasting ink printing solid background colours unnecessarily, or wasting paper reproducing navigation panels that will be entirely useless once printed out.

Web browsers, like all computer software, have bugs. They may not conform to current standards. Each time a new version of each browser comes out, a significant proportion of the World Wide Web would need re-coding to suit the new bugs and the new fixes.

5.15 SUMMARY

All web pages have an <html> tag at the beginning and the end, telling the browser where the document starts and where it stops. The start tag is often called the opening tag. The end tag is often called the closing tag.

A basic HTML document contain

<html>
<head>
<title>Document name goes here</title>
</head><body> body text
</body>

</html>

Heading Elements

<h1>Largest Heading</h1>

<h6>Smallest Heading</h6>

Text Elements

This is a paragraph
<pre>This text is preformatted</pre>

Logical Styles

This text is emphasized
This text is strong

Physical Styles

Use for bold This text is bold
This text is italic

<u> This text is for underline</u>

Links, Anchors, and Image Elements

This is a Link
<img src="URL" alt="Alternate Text">
A named anchor:
Useful Tips Section
Jump to the Useful Tips Section

Other Elements

<!— This is a comment —>

 ... Defines the beginning and end of an ordered list (numbered).

 ... Unordered list (bulleted).

 List Item. Must appear before each item in any of the above lists to set it apart from other items.

 ...
Centers any item or group of items

 ... Emphasized text (usually italic).

 ... Strong emphasis (usually bold).

 ... Changes the appearance of the text in your page. Can be used with "SIZE", "COLOR" and "FACE" attributes.

<table> ... </table>

Creates Table. Can be used with "BORDER", "ALIGN", and "WIDTH" attributes.

<tr> ... </tr> Table row

<th> ... </th> Table header

<td> ... </td> Table data.

Links

The <font> tag in HTML is deprecated. It is supposed to be removed in a future version of HTML.

5.16 GLOSSARY

HTML (Hyper Text Mark-up Language) While it is not an official computer language such as C++ or pascal, HTML is the way in which computers communicate across the world wide web. It consists of many tags that allow writers to mark-up text documents so that they can be viewed by others using web browsers.

Web Browsers Web browsers are the applications that allow one to view HTML documents from either your own computer or from any other computer connected to the internet.

Tags Tags are the commands that give HTML documents their functionality. They consist of commands placed within < and &gt. Some tags work by placing a start and stop tag at each end of the desired text, such as below <big&gt.This makes the text bigger <big&gt.The stop tags are often the same as the start with the addition of "/" at the beginning of the stop tag. Using both of these tags places the desired text in a container. But not all tags need to use a container, and thus don't need a stop tag. In the glossary below you will find a "</>" next to the tags that require a stop tag

Containers Containers refer to the area enclosed by <start> and </stop> tags where the commands take effect. Some tags, such as <HTML> enclose the entire document, others enclose lists, and others can enclose a single world. One of the more common problems in writing HTML is when one forgets to add a stop tag and else of the container, thus leaving the tag to effect the rest of the document. So try and keep track of each container that you create.

5.17 FURTHER READINGS

1.HTML 2.0 Proposed Standard - RFC 1866 ,T. Berners-Lee, D. Connolly November 1995. ftp://ds.internic.net/rfc/rfc1866.txt.

2.W3C Recommendation for HTML 3.2Dave Ragget.

3.Borenstein N., and N. Freed, "MIME (Multipurpose Internet Mail Extensions) Part One: Mechanisms for Specifying and Describing the Format of Internet at http://www.w3.org/pub/WWW/TR

4.Internet Media Types - RFC 1590,J. Postel. "Media Type Registration Procedure."RFC1590,USC/ISI,March1994,at ftp://ds.internic.net/rfc/rfc1590.txt.

5.18 ANSWERS TO SELF-LEARNING EXERCISES

1. a
2. c
3. a
4. b
5. b

5.19 UNIT END QUESTIONS

1. What do you mean by HTML? How do you show different type of formatting commands?
2. What exactly is HTML? Explain different list commands.
3. How do you make a picture as a background on web page?
4. How do you make it so that someone can mail you by just clicking on text?
5. How do you add scrolling text to my page?
6. How do you show multiple colors of text?
7. How do you make a picture as a link?
8. How can you make your link not have this ugly border?
9. How do you make it so that your web page is just one solid color in the background without using an image file?
10. How do you align pictures so that one may be higher or lower than the other?
11. How do you make a link to another web page?
12. Write and Explain important attributes for the following tags

1. <body>
2. <form>
3. <textarea>
4. <iframe>
5. <applet>

13. Explain different tags and attributes which are use to create HTML table.
14. What is an attribute? Explain different type of attribute with <font> tag.
15. What is a WYSIWYG editor and why should we learn html without them?
16. What is the root element (ie. the first tag) of every html page?
17. Where does the text inside the <title> element appear in a browser?
18. Describe one benefit of separating your content (the information of your page) and your presentation (the way your page is displayed in the browser).

***

UNIT VI

ADVANCE HTML

STRUCTURE OF THE UNIT

6.0 OBJECTIVE:

The objective of this unit to learn more about commands of html. The student can learn about how they add graphics in his document .Enter more effect in his web page so they can make attractive web pages .After learning this unit they can design attractive web pages.

6.1 INTRODUCTION:

HTML keeps everything on the World Wide Web anchored to a common ground. Hyperlinks are what make the Web dynamic. The ability to create a tag that enables users to jump to anywhere in the world by simply clicking their mouse cursor is one of the powerful features of HTML called Hyperlinks. HTML document takes the information provided in the <FORM> fields and sends it to a CGI (Common Gateway Interface) application that depending on how it is written processes the data and returns it to you either on a Web page or through e-mail. This feature of HTML is a very valuable tool in gathering information from

your Web site visitors-and a great way to collect marketing data. The latest creation for Web browsers (Netscape) is the <FRAMESET> tag . The <FRAMESET> tag enables multiple documents to be simultaneously active on a page, giving the visitor several independent windows (or frames) in which to view information. Instead of forcing a Web designer to create huge HTML documents, one Frame document enables the designer to use hyperlinks within the frames of the Frame document to link with other HTML documents.

6.2 USE OF COMMENTING:

The comment tag is used to insert a comment in the source code. A comment will be ignored by the browser. You can use comments to explain your code, which can help you when you edit the source code at a later date. You can also store program-specific information inside comments. The is not visible for the user, but still available to the program. A good practice is to comment the text inside scripts and style elements to prevent older browsers, that do not support scripting or styles, from showing it as plain text. Comments can be inserted in the HTML code to make it more readable and understandable. Comments are ignored by the browser and are not displayed.

Comments are written like this: <! >

Example:

```
<html>
<head><title>My First Web Page</title></head>
<body>
This is my <!—This is a comment —> first Web page.
Notice how the comment does not display.
</body>
</html>
```

Output

This is my first Web page. Notice how the comment does not display.

6.3 HEADERS

The HTML header contains several notable items which include:

1. doctype - This gives a description of the type of HTML document.
2. meta name="description" - This gives a description of the page for search engines.
3. meta name="keywords" - This line sets keywords which search engines may use to find your page.
4. title - Defines the name of your document for your browser.

For example

```
<!DOCTYPE HTML document ">
<html>
<head>
<meta http equiv="Content Type"content="text/html;charset=iso-8859-1">
<meta name="description" content="Advance HTML.">
<meta name="keywords" content="HTML, tags, commands"
<title>The HTML Document </title>
<link href="ABC.css" rel="htmlstylesheet" type="text/css">
 </head>
```

Elements in the Header:

Elements allowed in the HTML 4.0 HEAD element are: BASE - Defines the base location for resources in the current HTML document,, LINK - Used to set relationships of other documents with this document ,META - Used to set specific characteristics of the web page and provide information to readers and search engines, SCRIPT - Used to embed script in the header of an HTML document, STYLE - Used to embed a style sheet in the HTML document, TITLE - Sets the document title and some additional element allowed by the HTML 4.0 transitional standard is ISINDEX (Depreciated) - Allows a single line of text input. Use the INPUT element rather than ISINDEX.

The <META> element which explain later in this unit in detail is used to set specific characteristics of the web page and provide information to readers and search engines. It has no ending tag. Attributes

http-equiv - values which we use with this are:

- **refresh** - The browser will reload the document after the specified seconds specified with the CONTENT value have el lapsed.

Ex: <META HTTP-EQUIV=refresh CONTENT=45>

- **expires** - Gives the date that content in the document is considered unreliable.
- **reply-to** - A an email address of the responsible party for the web page. This attribute is not commonly used. Ex: <META HTTP-EQUIV=reply-to CONTENT="abc@xyz.com">

· **name** - Provides non-critical information about the document possibly useful to someone looking at it. Possible values are:

- **author** - The person who made the page or the HTML editor name . Ex: <META NAME=author CONTENT="korth ">
- **description** - An explanation of the page or its use, used by search engines at times to provide a page summary. Ex: <META NAME=description CONTENT="The abc Home Page">
- **copyright** - A copyright notice for the page. Ex; <METANAME=copyright CONTENT="Copyright 2000, korth">
- **keywords** - A list of keywords which are separated by commas. These keywords are used by search engines. EX: <META name="keywords" content="computer documentation, computers, documentation, computer help">

This section is very important if you want your web page to be found by search engines. The keywords are separated by commas, not spaces and that the words "computer documentation" are treated by search engines as one word. If someone enters the phrase "computer documentation" when doing a search, it gives the web page a much greater chance of being found than just having the separate keywords "computer" and "documentation".

- **date** - <META name="date" content="2010-05-07T09:10:56+00:00">

· **content** - Specifies a property's value such as the content of this document is text/HTML.

· **scheme** - Names a scheme to be used to interpret the property's value.

The title Element

The text between the <title> and </title> tags is the title of the document.

An example:

<title>The HTML Guide</title>

The <base> tag specifies a default address or a default target for all links on a page:

<head>
<base href="http://www.w3schools.com/images/" />

```
<base target="_blank" />
</head>
```

The link Element:

The <link> tag defines the relationship between a document and an external resource.

The <link> tag is most used to link to style sheets:

```
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css" />
</head>
```

The style Element:

The <style> tag is used to define style information for an HTML document.

Inside the style element you specify how HTML elements should render in a browser:

```
<head>
<style type="text/css">
body {background-color:yellow}
p {color:blue}
</style>
</head>
```

6.4 TEXT STYLE:

The early HTML have the limitation on font usage and control of text. Internet Explorer 3.0 has taken the first major step to provide solutions for Web designers. The <STYLE> tag and its attributes enable to specify fonts (more than one so that the browser scans the user's system and finds one that is loaded), margin sizes, indents, and more.

<STYLE> : </STYLE>

The Style Sheets tag is a proposed HTML 3.2 tag that the user can change font sizes in points, set margins, change link colors, and more-all within a section of a document, on the whole Web page, or throughout an entire document by linking to an external style sheet . Unlike most HTML tags, the <STYLE> tag places its attributes within the beginning and ending tags rather than <STYLE=attribute> as in the example given below.

```
<STYLE>
P {font: 14pt Arial; text-indent: 1in}
....
</STYLE>
```

Here is the attribute format to be used within the <STYLE> tags. Notice that there are no brackets < around the tag. The tag is followed by the attributes in brackets ({). To apply more than one attribute, you simply use a semicolon.

The available attributes for the STYLE tag are as follows:

Font: This attribute specifies font attributes such as bold, italic, font size/font leading, and list of font names.

Font-family: Like Times New Roman, Arial etc.

Font-size: This attribute enables you to select font sizes in four different integers: inches (in), centimeters (cm), pixels (px), or the most popular, points (pt). Here are examples:

Font-size: 14pt or font-size: 5px

Font-weight: This attribute is not for weight in pounds. The only two values at this time are bold and normal.

Font-style: For this attribute, italic is the only value currently supported.

Text-decoration: This attribute sets text decoration. Values include none, underline, italic, or line-through. Here is an example: text-decoration: underline

Background: This attribute sets a color or image behind text to highlight it. Values are RGB codes (#FFFFFF), color names (WHITE), or a URL (/images/background.gif).

Margin-left: and margin-right: These attributes set the left and right margins. As with the previous attributes, values can be in inches (in), centimeters (cm), or pixels (px). Here are examples: margin-left: 1in , margin-right: 25px

Text-align: This attribute is pretty straightforward. It uses the values left, right, and center.

Text-indent: This attribute enables you to indent a block of text using the common integers used by previous attributes (inches, centimeters, and pixels). Here is an example: text-indent: .020in.

<SPAN STYLE="text-indent: .20 in">

The STYLE tag can also be used within paragraph tags, like this:

<P STYLE="font-size:32pt>

The paragraph within these beginning and ending tags will be displayed in 32 point type.</P>
If we use <STYLE> Attributes for an Entire Document then <STYLE> tags and attributes must be placed after the<HTML> tag but before the <BODY> tag, for example :

```
<HTML>
<HEAD>
<TITLE> this is my first web page!</TITLE>
</HEAD>
<STYLE>
BODY {background: green; color: blue}
H1 {font: 16pt Arial bold}
A {text-decoration: none; color: red}
</STYLE>
<BODY>
```

Using an External <STYLE> Sheet

If you want to have a specific <STYLE> sheet for an entire Web site and you don't want to have to place the attributes on every page, then we create a text file with the extension .css and include only the attributes that normally go between the<STYLE> tags within the <HEAD> tags of all of the documents that you want to have the style sheet attributes, place the link to your new style sheet, like this:

```
<HTML>
<HEAD>
<TITLE>My web page!</TITLE>
<LINK REL=STYLE TYPE="text/css" SRC="/styles/style1.css">
</HEAD>
```

6. 5 IMAGES OR LINKING HTML GRAPHICS:

The <IMG> tag is used to embed graphics in HTML pages. They may be embedded inside other elements such as anchors. When embedded inside an anchor, then the user left clicks on the image, they will go to the designated link (rather, their browser will load a file from the designated link). The <IMG> element has no ending tag.

IMG Attributes

SRC="../greenhomebutton.gif" - The path and filename of the image which specifies its location.

ALT="Home" - This is a message displayed if the image could not be found.

ALIGN="TOP" - (Depreciated). Sets the image alignment. The image is aligned to the left or right column if the value is LEFT or RIGHT,The values, TOP, MIDDLE, BOTTOM, ABSMIDDLE, and ABSBOTTOM, set the vertical alignment with items in the same line.

VSPACE=3 - (Depreciated). The space between the image and the text above and below it in pixels.

HSPACE=5 - (Depreciated). The space between the image and the text to the left and right of it in pixels.

BORDER=10 - (Depreciated). Sets a border of the specified width in pixels to be drawn around the image.

HEIGHT=33 - The height of the image. If this is not specified, the image will be the size as determined by the gif file. This can be set in pixels or a percentage of the browser window height.

WIDTH=115 - The width of the image. If this is not specified, the image will be the size as determined by the gif file. This can be set in pixels or a percentage of the browser window width.

ISMAP - Identifies the image as an image map. The image map lets the user point and click different parts of the image to load other web pages.

USEMAP - Specifies the client side image map file to be used.

The line break element, <BR> and the horizontal rule element <HR> may be placed inside the <IMG> element.

So the first step to get the image file, the next step is to place it in your HTML document with markup tags. Images in HTML are included by using the <IMG> tag.The basic elements and attributes used when including an <IMG> tag in your document.

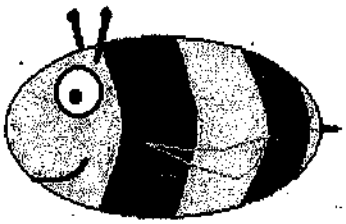
- If you want to link to images that are not your own, be sure to get permission from the copyright holder first.
- You should always use ALT to specify alternate text for an image, so that users without graphical capability will understand what the image is showing.
- Locate the place in your document where you'd like to insert the image.
- You can place images in your HTML document by using the <IMG> tag. To insert an image into your HTML document, type <IMG>. There is no closing </IMG> tag.
- Now you need to specify the URL of the image to load by placing the SRC (source) attribute within the <IMG> tag. If you store your images in the same directory as your HTML files, the URL can simply be the file name of the image. For example, to insert a GIF file named aaa.gif into your HTML document, you would type <IMG SRC="aaa.gif">.
- To link to images that are not in the same directory as the HTML document, use relative URLs to locate them. For example, if you stored the above aaa.gif file in a subdirectory called images in your HTML documents folder, you would type <IMG SRC="images/aaa.gif">.

The ALT attribute allows you to create alternate text for your image that will be shown to users who have browsers that do not support graphics. Some browsers will also display the alternate text while the image is loading. To specify the alternate text, type ALT=, followed by the text in quotes. For example, adding alternate text would change the above image tag to <IMG SRC="images/aaa.gif" ALT="The aaa object.">.

Example :

<img src="bee.gif" alt="Bee" width="173" height="107">

Here is a bumble bee inserted with above code.



6.6 FORMATTING:

Text formatting is already explain in unit 5 here we explain some other formatting including them and related attribute of formatting tag.

These formatting tags are used to format HTML text and provide a description of what they do. Including these there are many tags used to format text. They are listed below:

- .. - Sets bold text.
- <big>..</big> - Sets larger than normal text.
- .. - Sets text in italics and denotes emphasis.
- .. - Sets text in italics.
- <small>..</small> - Makes text smaller than normal.
- <strike>..</strike> - Draws a line through the text as a "strikeout".
- .. - Same as bold but denotes strong emphasis.
- <super>..</super> -Superscript.
- <tt>..</tt> - Monospaced typewriter font.
- <u>..</u> - Underlined text.
- <var>..</var> - Mark a variable.

Examples

Here's the HTML code:

```
This is an example of the <b>&#60;b&#62; tag </b>.<br>
This is an example of the <big>&#60;big&#62; tag</big>.<br>
This is an example of the <em>&#60;em&#62; tag</em><br>
This is an example of the <i>&#60;i&#62; tag</i>.<br>
This is an example of the <small>&#60;small&#62; tag</small>.<br>
This is an example of the <strike>&#60;strike&#62; tag</strike>.<br>
This is an example of the <strong>&#60;strong&#62; tag<strong>.<br>
This is an example of the <sup>&#60;sup&#62; tag<sup>.<br>
This is an example of the <sub>&#60;sub&#62; tag<sub>.<br>
```

This is an example of the <tt><tt> tag<tt>.
This is an example of the <u><u> tag</u>
This is an example of the <var><var> tag</var>

Here Entities

> Greater than > Or >

< Less than < or <

Which are explain later in special characters.

The output is as follows:

This is an example of the **<b> tag.**
This is an example of the <big> tag.
This is an example of the * tag.*
This is an example of the *<i> tag.*
This is an example of the <small> tag.
This is an example of the ~~<strike> tag.~~
This is an example of the ** tag.**
This is an example of the <sup> tag.
This is an example of the <sub> tag.
This is an example of the <TT> tag.
This is an example of the <u> tag.
This is an example of the *<var> tag.*

Other tags associated with text are:

- ABBREV - Denotes an abbreviation
- AU - Author
- CODE - Denotes program code and should be set in the same format as the PRE tag, but does not work either with all browsers or all HTML versions.
- DEL - Denotes deleted text.
- DFN - Denotes the definition of a term
- INS - Denotes inserted text
- KBD - Text to be typed at the keyboard, such as a computer command. The test is displayed in a mono spaced format.
- Q - Quotation.
- SAMP - Denotes sample text.

Each of these tags require an ending tag.

FONT Attributes and Tags

The FONT tag is another text formatting feature. It allows you to adjust the size and color of your text.

The properties of a FONT tag are :
<FONT> - Begins the FONT element.

o SIZE : A number 1 to 7 for height and thickness. Using a + or a - before the number will adjust the size against the default. SIZE ="4" - Sets the font size using a value, between 1 and 7. The default value is 3. It can be specified with a "+n" value to set the size relative to the current size.

o COLOR: Name/hex number set for color. For example ,Color ="blue" - Sets the text color.

- FACE="roman" - The font name to be used. If there is more than one font name separated by commas the first font that can be found is used.

</FONT> - Ends the FONT element.

- <BASEFONT> - Used to set the default font size on the current page.
- SIZE="2" - Specifies default font size with a value between 1 and 7.

Example:

```
<html>
<head>
<title> Welcome to my web page. </title>
</head>
<body>
<P>
<font color="#ff0000">
Hi there! Thanks for visiting my web page. The text in this section is red.
</font>
</p>
<b>This text is bold</b>
<br>
<font size="+3">
<i>This text is in italic and font sizes 3 larger than the normal sized font.</i>
</font>
<br>
<u>This text is underlined. This text is black and is a normal size.</u>
<br>
This text is back to normal.
<hr>
<p>
<b><i>This text is bold and italisized.</i></b>
<br>
<u><b>This text is underlined and bold.</b></u>
</p>
</font>
</p>
<p>
<font size="5">
This text is red and size 5.
</font>
</p>
</body>
</html>
```

Output

Hi there! Thanks for visiting my web page. The text in this section is red.

This text is bold

This text is in italic and font sizes 3 larger than the normal sized font.

<u>This text is underlined. This text is black and is a normal size.</u>
This text is back to normal.

This text is bold and italisized.
<u>This text is underlined and bold.</u>

This text is size 5.

<FONT FACE=>

The FACE attribute enables you to actually specify a font from the machine on which the browser is installed. The you can actually select several fonts separated by commas. This is an Internet Explorer-only tag. Here is an example:

<FONT FACE="Times, Arial, Friz Quadrata>TNT Media</FONT>

If the user's machine does not have any of the fonts installed, the browser simply displays TNT Media in the default font as set in the user's browser preferences. One of the good things about using the <FONT> tag or the font-family: and font: attributes is that they are safe to use. This is true because they enable you to choose several fonts. Therefore, if the first font isn't available on the visitor's machine, the machine chooses the next one, and so on. If none of the fonts are available, the machine ignores the tag or attribute altogether and uses the visitor's browser's default font. So, you can only win by utilizing these features. Your design will succeed either way without showing an error or broken page.

Color Values

Previously, to specify a color value, you either had to have a chart of HTML-supported color tags (Pantone's RGB values) or you had to keep running to an HTML resource Web site to find the correct values. All of that has now changed because Explorer uses color names instead of the code values. Although Netscape Navigator currently supports the color names in , the list reflects Internet Explorer-only supported names as specified at the time of this writing so that if you are authoring Web sites specifically for Internet Explorer users, your colors will be correctly displayed.

RGB color names.

Microsoft Internet Explorer supported color values

Aqua		Black
Blue	Fuchsia	
Gray		Green
Lime	Maroon	
Navy	Olive	
Purple	Red	
Silver		Teal
Yellow	White	

6.7 SPECIAL CHARACTER:

Special characters are placed on your page by using a special reference to the character you want to use. The reference will begin with an ampersand (&), will be followed by some text or numbers, and end with a semicolon(;)

Space : to add extra space on your page. For example, if we add extra space between two words. To do this, you place the reference   where you would like to add the extra space. Here is what you would do:

Hello how are you!

This gives us two spaces between "Hello" and "there!", like this:

Hello how are you!

The first space is added just using the "space" bar on the keyboard. The Web browser will see the first space, but after that additional spaces will make no difference—you will only see one space in the browser. By adding the   reference, we forced the browser to add an extra space between the two words. You can add as many spaces as you would like by repeating the   reference, like this:

Hello   how are you!

This will create the first space, and 4 additional spaces between the two words, for a total of five spaces. It will be displayed like this:

Hello how are you!

Copyright symbol (©) : To add copyright symbol. we use it the same way as an extra space, by placing its reference where you would like to see the symbol on the page. The reference for a copyright symbol is **©**. For example :

This page Copyright © 2010 by me!

This page Copyright © 2010 by me!

The list of special characters is given below:

Character	Description	Name string	Numeric string
&	Ampersand	&	&
©	Copyright	©	¨
"	Quotation	"	"
>	Greater than	>	>
<	Less than	<	<
¢	Cent	¢	¢
£	Sterling pound	£	£
°	Degree sign	°	°
®	Trademark sign	®	®
±	Plus/minus signs	±	±
×	Multiply sign		×
÷	Divide sign		÷
¦	Broken vertical bar	¦	¦
§	Section sign	§	§
¹	Superscript 1	¹	¹
²	Superscript 2	²	²
³	Superscript 3	³	³
½	1/2 fraction	½	½
¼	1/4 fraction	¼	¼

¾	3/4 fraction	¾	·
Æ	Capital AE	Æ	Æ
æ	Small AE	æ	æ
É	Capital E accented	É	É
é	Small e accented	é	é

Although these special characters may displayed without the semicolon at the end, it is the proper standard to use the semicolon.

6.8 HORIZONTAL RULES:

The horizontal rule creates a visible line that enables you to easily separate sections of your page. The default line looks like it is embedded into the page with a 3-D look. The <HR> tag automatically creates a line break causing text to begin underneath the line.

The following are the available attributes for the <HR> tag:

<HR SIZE=>

This attribute enables you to thicken the line by pixels. <HR SIZE=5> would be a line that is 5 pixels high.

<HR NOSHADE>

This creates a 2-D flat black line that can be used in combination with the SIZE, WIDTH, and ALIGN attributes.

<HR WIDTH=>

This attribute enables you to select the width of the line that is centered by default (other justifications are covered next). This attribute's value can be in pixels or a percentage of the document width. Just as with the other attributes for the <HR> tag, this can be used in combination with the others. For example, this is how to select the width by pixel:

<HR WIDTH="340">

Here is how to select by percentage:

<HR WIDTH="66%">

<HR ALIGN=>

Internet Explorer and Navigator enable three values for this attribute: LEFT, CENTER, and RIGHT. The default is CENTER. Again, this can be used in combination with all other <HR> attributes.

The HR element has no ending tag

SIZE=7 - (Depreciated). Sets the thickness or size of the line in pixels.

ALIGN="RIGHT" - (Depreciated). Sets the alignment of the line on the page to LEFT, RIGHT, or CENTER. The default is CENTER. The alignment is without purpose if the line width is 100%.

- WIDTH="50%" - (Depreciated). Sets the width of the line across the page as a % or in pixels. The default is 100%.
- COLOR="green"; - (Depreciated). Sets the color of the line. It may be expressed as one of the words, red, blue, green, etcetera, but may also be expressed in the #RRGGBB color format.
- NOSHADE - (Depreciated). A boolean value to set the line to a solid line.

An example using the HTML HR element

Here's a colored line in HTML code (The top coding example uses HTML 3.2 without embedded style commands and the bottom coding uses HTML 4.01 with embedded style commands:

<hr size="15" align="left" width="50%" color="blue">
<hr style="color: 'blue'; height: '15'; text-align: 'left'; width: '50%'">

Here's how it looks:

Here's another colored line in HTML code (The second line uses style commands to set attributes rather than directly using some of the older attributes that are being depreciated):

<hr size="15" align="left" width="100%" color="#FF0000">
<hr style="height: '15'; text-align: 'left'; color: '#FF0000'; width: '100%'">

Here's how it looks:

6.8 LINE BREAKS:

The line break inserts a line break smaller than the paragraph break. It can be placed at the beginning or end of a line. HTML elements without content are called empty elements. Empty elements can be closed in the start tag.
 is an empty element without a closing tag (it defines a line break).

In XHTML, XML, and future versions of HTML, all elements must be closed.

Adding a slash to the start tag, like <br />, is the proper way of closing empty elements, accepted by HTML, XHTML and XML.

Even if <br> works in all browsers, writing <br /> instead is more future proof.

An available attribute is <BR CLEAR=>

Instead of stopping all text flow as with the <BR> tag alone, this attribute stops text from flowing to either side of a graphic that is aligned to the left or right and resumes the text below the graphic. Here is an example:

<BR CLEAR=LEFT>

This is used when a graphic is aligned to the left, which forces the text below the graphic instead of enabling it to run alongside the graphic in the right margin. Also,<BR CLEAR=RIGHT> and <BR CLEAR=ALL> are each related to the margin.

The BR element has no ending tag. Here are two lines as they may be written without using a <br> tag.

This is what you would see:

This is line 1. This is line 2.

Here are the same two lines as they are written with a <br> tag.

This is line 1.
This is line 2.

The output is like this :

This is line 1.
This is line 2.

6.9 TABLE:

Table tag is already explain in Unit 5 here I explain some example to draw tables.

HTML Table 1x1:

<table border=1>

<tr>

<th>1st Col </th>

</tr>

</table>

The table codes all reside within the <table></table> tags. The border=1 modifier makes the lines around the table and also between the cells. To turn off border we use <table border=0 >.

HTML Table 1x3:

<table border=1>

<tr>

<th>1st Col </th>

<th>2nd Col </th>

<th>3rd Col </th>

</tr>

</table>

Web page should look like this.1st Col2nd Col3rd ColColor a row or cell:

<table border=1>

<tr bgcolor="#ff0000" >

<th>1st Col </th>

<th>2nd Col </th>

<th>3rd Col </th>

</tr>

<tr>

<td bgcolor="#00ff00" > A text </td>

<td>B text </td>

<td>C text </td>

</tr></table>

We use following attribute with table tag.

<TABLE BGCOLOR=>This attribute enables you to make the table background color different from the background of the rest of the HTML document. As with other color attributes, the value is either RGB codes or color names). Individual table cells can be changed even from the table background color by adding the BGCOLOR attribute to the individual cell.

With Internet Explorer 3.0, authors can now place a graphic behind an entire table for a very unique effect. Just as with the BACKGROUND attribute in the <BODY> tag, you simply point to the URL of the graphic, like this:

<TABLE BACKGROUND="xyx.jpg">

<TABLE RULES=ROWS>

Use this attribute if you want borders only between the table rows. For borders only between the columns, use RULES=COLS. To create a table with no borders inside the rows and columns (the BORDER= attribute still defines the outside border) use RULES =NONE.

<TABLE BORDERCOLOR= BORDERCOLORLIGHT= BORDERDARK=>

These attributes enable you to change the color of the border surrounding the table. Again, the values are in RGB code or color names. BORDERCOLOR shades the middle part of the border, and BORDERCOLORLIGHT and BORDERCOLORDARK give the border a 3-D effect.

<TABLE VALIGN=>

This attribute sets the vertical alignment of text within its cell for the whole table. Values are TOP, BOTTOM, and MIDDLE.

<TD>

Table Data (<TD>) and Table Rows (<TR>) are simple tags, yet they can be used to really enhance information that is displayed in tables. The following attribute are used with TD and TR

BGCOLOR set background color , VALIGN=BASELINE this attribute is used to align the baselines of different font sizes of text in a table ,BORDERCOLOR may be BORDERCOLORLIGHT or BORDERCOLORDARK these attributes enable you to change the color of the border .

6.11 FORMS:

A form is an area that can contain form elements. Form elements are elements that allow the user to enter information (like text fields, text area fields, drop-down menus, radio buttons, checkboxes, etc.) in a form.

A form is defined with the <form> tag.

```
<form>
.
input elements
.
</form>
```

Input:

The most used form tag is the <input> tag. The type of input is specified with the type attribute. The most commonly used input types is Text Fields. Text fields are used when you want the user to type letters, numbers, etc. in a form. For example

```
<form>
First name:
<input type="text" name="Name:" />
<br />
Password:
<input type="text" name="Password:" />
</form>
```

How it looks in a browser:

Top of Form

Name:

Password:

Bottom of Form

Text box allow the user to enter a single line of text. Here it is:

<input type="text" name="yourname" size="25" maxlength="60" />

This tag will display an input box on your page like this:

Top of Form

Bottom of Form

We can also define text areasSo that we get big spaces for people to write in more than one line. Use a <textarea> tag in such a way .

<textarea name="comments" rows="4" cols="20"></textarea>

This will give you a textarea like this:

Top of Form

Bottom of Form

The form itself is not visible in most browsers, the width of the text field is 20 characters by default.

Radio Buttons:

Radio Buttons are used when you want the user to select one of a limited number of choices or only one option can be chosen.

```
<form>
<input type="radio" name="sex" value="male" /> Male
<br />
<input type="radio" name="sex" value="female" /> Female
</form>
```

How it looks in a browser:

Top of Form

Male

Female

Bottom of Form

Checkboxes :

Checkboxes are used when you want the user to select one or more options of a limited number of choices.

```
<form>
I have a DBMS book:
<input type="checkbox" name="book name " value="DBMS" />
<br />
I have a HTML. book:
<input type="checkbox" name="book name" value="HTML" />
<br />
```

I have a Computer Graphics book:
<input type="checkbox" name="book name" value="Computer Graphics " />
</form>

How it looks in a browser:

Top of Form

I have a DBMS book :

I have a HTML book :

I have a Computer Graphics book :

Bottom of Form

Drop-Down Menus

Well, how about those drop down menus? This is done with the <select> tag:

<select name="select book">
<option selected="selected">DBMS</option>
<option>HTML</option>
<option>CG</option>
</select>

This will give you the following drop down menu. Click the arrow on the right side to view your choices!

Top of Form

DBMS

Bottom of Form

<select name="select book"> tells the browser to display a selectable list, and give the list the name "select book".

<option selected="selected"> Lets you specify which option will be displayed as the default value on the screen.

<option> Allows you to add another choice to the list. Use as many of these as you need.

</select> Ends the drop down menu.

Button(Submit):

When the user clicks on the "Submit" button, the content of the form is sent to the server. The "reset" button allows the user to clear the entire form and start over.The form's action attribute defines the name of the file to send the content to. The file defined in the action attribute usually does something with the received input.

<form name="input" action="html_form_submit.asp" method="get">
Username:
<input type="text" name="user" />
<input type="submit" value="Submit" />
<input type="reset" value="Reset"/>

</form>

How it looks in a browser:

Top of Form

Username: Submit Reset

Bottom of Form

If you type some characters in the text field above, and click the "Submit" button, the browser will send your input to a page called "html_form_submit.asp". The page will show you the received input.

If you want the buttons to say something different than "Submit " and "Reset", you can add the value=" " command to either or both of the tags. So, If I wanted to change the "Submit Query" to "Send Now!", I would do this:

<input type="submit" value="Send Now!" />

And I would get this beautiful button:

Top of Form

Send Now!

Adding Forms to Your Page:

To use a form on your page, you will need two things: The HTML for the form and a CGI program to handle the form when it is submitted. There are a couple of ways to get a CGI program for your form:

1. You can program it yourself, or find one in the public domain, and upload the program to the directory you keep CGI programs in. A good place to find CGI programs is The CGI Resource Index.

2. You can see if your Web server has one available for your use, and find out from them how to use it in your HTML form code.

It is usually easier to go with the second choice. Most Web servers offer CGI programs for you to use for free. The most common program to handle a form is one that sends you the results via email, and this is the program most servers will provide. Following are the tag that are use for creating a form:

<form method="post" action="/cgi-bin/mailme.cgi">
...Your form stuff...
</form>

The method command will almost always be set to "post". The other value is "get", but if you are using a program from your Web server, you will likely be instructed to use method="post". The action command is asking for the address of a CGI program that will handle the form once it is submitted. You will replace the "/cgi-bin/mailme" above with the address your server gives you to use their CGI program. If you are using your own program, upload the program to your server and use the address of your program. Before you upload a CGI program, be sure your server allows you to use your own CGI programs. If not, don't do it. See if they have one you can use. If they don't have that, get another server.

6.12 META TAGS:

Meta tags are used to help some search engines index your page, especially if your page has frames. Meta tags should be placed between the <head> and </head> tags of your document. The most common meta tags are going to look like this:

<head>
<title>Meta examples</title>
<meta name=" " content=" " />
</head>

The name=" " will indicate what type of meta tag you are using. The content=" " will be the content of the tag you provide for the search engine. To make more sense of this, lets look at the meta "keywords" tag.

Meta Keywords Tag:

<meta name="keywords" content="meta tags, search, homepage, web sites" />

1. name="keywords"

Informs the search engine's spider that a group of keywords should be in this tag.

2. content="meta tags, search, homepage, web sites"

Your list of keywords and key phrases. In the "keywords" tag, you separate each keyword or key phrase by placing a comma between them.

Be careful not to repeat the same thing too many times here, and be sure the keywords are relevant to the content on your page. The Search Engines are attempting to crack down on people who use these tags to repeat the same word over and over in order to get a better listing, or using keywords that have nothing to do with the content of the page.

Meta Description Tag

The next useful meta tag gives a description of your page. Here it is:

<meta name="description" content="How to add meta tags to your page." />

1. name="description"

Tells the search engine's spider a description of the page is to follow.

2. content="How to add meta tags to your page."

Your very own description of your Web page. Type in what you want the description of your page to be, and use some of your key phrases as part of the description. Many of the search engines use this as the description that will appear in their listings.

Other META Tags

The above tags are the two most useful and popular meta tags. There are a couple more that I will mention here, just in case you want to use them.

<meta http-equiv="Content-Language" content="en-us" />

This tag allows you to specify the language the Web page uses.

<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />

This one declares the content type and character set.

<meta name="author" content="Your Name" />

This tag lets you specify the author of the Web page. Just insert your name and anyone viewing the source code will know you wrote it. I haven't seen a search engine make use of this tag for indexing purposes yet.

<meta name="generator" content="Notepad" />

The Meta Refresh

If your page has moved, or you have a need to redirect your visitors automatically, you can use a meta refresh to send them the page of your choice. Be careful when using this, though, especially on your main page. Some search engines are trained to look for a meta refresh that leads from a page stuffed with keywords to the real page, redirecting the user so quickly that they never see the keyword-loaded page. Thus, if you refresh too quickly (in some cases anything less than 10 seconds is too quickly) you stand the chance of having the page pulled from the listings.

```
<html>
<head>
<meta http-equiv="refresh" content="2;url=http://www.yoursite.com/newpage.htm" />
<title>Page has moved</title>
</head>
```

```
<body>
whatever you want to write
</body>
</html>
```

Notice that the refresh tag comes before your title tag. The content=" " command does two things. It tells the browser how many seconds to wait before executing the refresh, and then what URL it should be redirected to. Be careful when you write this... the quote marks are around the entire content=" " command, not around the number of seconds or url individually. They are separated by a single semicolon (;).

Of course, you are allowed to write whatever you need in your body section. So, if you have a user with a really old browser, you may add a manual link to the new page inside the body section of your page:

```
<html>
<head>
<meta http-equiv="refresh" content="2;url=http://www.yoursite.com/newpage.htm" />
<title>Page has moved</title>
</head>
<body>
This page has moved. If your browser does not automatically redirect you in a few seconds, click <a
bref="http://www.yoursite.com/newpage.htm">here</a> to go to the new page.
</body>
</html>
```

6.13 FRAME & FRAMESET TAGS:

To use frames on your Web site, you must know how frames work. A page with frames is really a page split into 2 or more sections, each containing its own HTML document.

Just as it says, both frames are actually HTML pages. The page that houses the two frames is also its own HTML document. So let's begin by looking at how the main page can create frames. This is done by using the <frameset> tag rather than the body tag at the beginning of the document. Here is an example of HTML code that will produce 2 frames, splitting the page down the middle:

```
<html>
<head>
<title>My cool page, now with frames!</title>
</head>
<frameset cols="50%,50%">
<frame src="page1.htm" />
<frame src="page2.htm" />
</frameset>
</html>
```

1. <frameset>

This tag tells the Web browser to expect a series of frames rather than a normal page.

2. cols="50%,50%"

This command inside the frameset tag tells the browser to split the page into two columns. In this case, the columns would each take up 50% of the space on the screen. You can change the percentages to anything you like. You can also use pixels rather than percentages if you wish. If you use percentages, be sure to keep the % sign after each number, or the browser will read the number as a pixel value.

3. <frame src="page1.htm" />

This tag lets you tell the browser the url of the document in the frame farthest to the left.

4. <frame src="page2.htm" />

This tag will specify the url of the next frame, going from left to right.

The browser will read your frame src tags for the columns from left to right, so be sure to keep everything in the order you want it to appear. Now, suppose you wanted three frames across the page, and not two? Well, all you need to do is modify your frameset tag and add another frame src tag for the third frame, like this:

```
<frameset cols="33%,33%,33%">
<frame src="page1.htm" />
<frame src="page2.htm" />
<frame src="page3.htm" />
</frameset>
```

Now you will have three columns on the page, each column would be 33% fo the width of the page. Where does the other 1% go then? The browser will make up the space on its own the way it feels would be best. If you don't want to leave it up to the browser, you can change one value to 34% or define the value in pixels instead.

So what about adding frames that go from top to bottom? Maybe you want something that looks similar to this:

Frame 1 Frame2

Frame 3

Well, now what we do is add another frameset tag, but this time we use the "rows" command. Here the code to get a page divided like the example above:

```
<frameset cols="50%,50%">
<frame src="page1.htm" />
<frameset rows="50%,50%" />
 <frame src="page2.htm" />
 <frame src="page3.htm" />
</frameset>
</frameset>
```

The rows command reads from top to bottom, like the cols command reads from left to right. You can have as many columns or rows as you like, but be sure to nest your frameset tags the way you want the frames to appear. In the example above:

§ The first frameset tag tells the browser to divide the page into 2 columns.

§ The frame src tag following it tells the browser the first column should be filled with page1.htm.

§ The next framset tag is nested inside the first frameset tag. This tag tells the browser to divide the second column into two rows, rather than using a single HTML page to fill the column.

§ The next two frame src tags tell the browser to fill the two rows with page2.htm on the topmost row and page3.htm on the following row, moving from top to bottom.

§ Be sure to close all of your frameset tags after they have been used.

Invisible Frames

Making the scrollbars and lines disappear

To give your page invisible frames, you will need to add some commands to your frameset tag, and adjust your frame tags to your liking. Here some code that will give you two frames, and the border between them will be invisible.

```
<frameset cols="20%,80%" border="0" framespacing="0" frameborder="0">
<frame src="page1.htm" name="left_frame" scrolling="no" />
<frame src="page2.htm" name="right_frame" />
</frameset>
```

As you can see, there are three new commands in the frameset tag:

1. **border="0"**

Sets the borders to zero so they do not appear.

2. **frameborder="0"**

Sets the frameborders to zero so they do not show up.

3. **framespacing="0"**

Sets the spacing of the frames so that there won't be a gap between frames.

Also remember to set the scrolling attribute to "no" in one or all of the frame tags. In the example, I set the left frame for no scrolling, so the frame would be invisible. I let the right frame use the default, so scrollers are only added as needed for the right frame.

How to add an inline frame to your HTML page

Inline frames are frames all by themselves in the middle of a page. We use following code.

```
<iframe src="whatsnew.htm" width="350" height="200" frameborder="10"></iframe>
```

1. **<iframe>**

This is the tag that tells the browser an inline frame will go here.

2. **src="whatsnew.htm"**

This lets you specify the URL of the document in the frame.

3. **width="350"**

Lets you give the frame a length, in pixels.

4. **height="200"**

Lets you give the frame its height, in pixels.

5. **frameborder="1"**

Allows you to give the frame a border. Set this as large or as small as you like.

Also, this frame uses links just like any other frame. You can give the inline frame a name, and target the frame with a link on your page outside the frame! Here's How:

First, add the name command to your iframe tag:

```
<iframe src="whatsnew.htm" name="inside_frame" width="350" height="200" frameborder="1">
</iframe>
```

Now, target a link on your page to show up in the frame:

```
<a href="linkus.htm" target="inside_frame">Link to us!</a>
```

Changing Two Frames With One Click

If you want to change more than one frame at a time then first thing you will need is a frameset to get you started. For simplicity, we use a frameset with two frames. Here is the code for the frameset page:

```
<html>
<head>
<title>Frames Example 5</title>
</head>
<frameset cols="20%,80%">
<frame src="page1.htm" name="left_frame">
```

<frame src="page2.htm" name="right_frame">
</frameset>
</html>

Be sure you give each frame a name using the name=" " attribute. Here we named the frames above "left_frame" and "right_frame".

6.14 FILE & IMAGE FORMATS:

Generally are three image formats in constant use on the net — GIF (Graphics Interchange Format), JPG(Joint Photographic Experts Group) and PNG(Portable Network Graphics). Another format which is TIF cannot be used in internet browsers. Each is suited to a specific type of image, and matching your image to the correct format should result in a small, fast-loading graphic. Saving and exporting into these formats will require a decent image editor. When choosing the format for your image we must consider both the image's **quality and filesize**. All editor programs like Adobe Photoshop or Adobe Elements support these file formats, which will generally support and store images in the following color modes:

The list of Web File Types - File extensions used for web files are given below.

Extension	File Description	Popularity
.asp	Active Server Page	Very Common
.aspx	Active Server Page Extended File	Common
.chm	Compiled HTML Help File	Average
.css	Cascading Style Sheet	Very Common
.dhtml	Dynamic HTML file	Average
.dll	DLL Dynamic Web Page	Average
.hdm	HDML File	Rare
.htm	Hypertext Markup Language File	Very Common
.html	Hypertext Markup Language File	Very Common
.htx	HTML Extension File	Average
.jhtml	Java HTML Web Page	Average
.jnlp	Java Web Start File	Average
.sht	HTML File with Server Side Includes	Uncommon
.shtm	HTML Server Side Include File	Average
.shtml	Server Side Include HTML File	Average

6.15 FORMATTING WEB PAGES BY DIFFERENT FILE FORMAT:

The two most common image file formats in use on the World Wide Web are GIF (.GIF) and JPEG (.JPG) files. The GIF format is directly supported by every graphical Web browser, while JPEG is still gaining acceptance as a standard image format on the World Wide Web. Although both GIF and JPEG files can be used in your HTML documents, there are a few important differences between the two formats. The GIF format, developed by CompuServe, is a cross-platform format, which means it can be viewed on almost any type of computer system, making it ideal for use on the World Wide Web. The one significant limitation of the GIF format is that images are limited to 256 colors. There are two different formats for GIF images: the GIF87 format and the GIF89a format. The first format is the original format, and is no longer widely used. The GIF89a format takes advantage of new enhancements, including transparency and interlacing, which are used extensively by HTML authors.Remember that JPEG images are 24-bit color, and require the appropriate video hardware to view properly. If the user's system can only support 256 colors, the images will be

automatically adjusted to 256 colors by the Web browser or external viewer through a process known as color dithering. This will always degrade the quality of the image, and may lead to results you did not anticipate. Therefore, it's best to use 24-bit JPEG images only when absolutely necessary. Images take a considerable amount of time to load in an HTML document, especially when the reader has a slow modem connection to the Internet. Try to keep your images as compact as possible. Crop the images wherever possible to show only the relevant portions, thereby reducing the image size. Color depth also plays a huge role in overall image size. Consider decreasing the number of colors to 16 or 256 if it won't adversely affect the image.

GIF — Graphics Interchange Format

GIF files contain no dpi information for printing purposes. Compuserve's 8-bit GIF format has long been the most popular on the Internet, mainly because of its small size. It is ideal for small navigational icons and simple diagrams and illustrations where accuracy is required, or graphics with large blocks of a single color. The format is loss-less, meaning it does not get blurry or messy. GIFs use a simple technique called LZW compression to reduce the filesizes of images by finding repeated patterns of pixels, but this compression never degrades the image quality. GIF files can be saved with a maximum of 256 colours. This makes it a poor format for photographic images. Because this can sometimes be tight, GIFs have the option to dither, and will mix pixels of two different available colours to create a suggestion of another colour. GIFs can be animated, which is another reason they became so successful. Most animated banner ads are GIFs. You will need an animation program to make your own animations. GIFs allow single-bit transparency, which means when you are creating your image, you can specify one colour to be transparent. This allows the background colours of the web page to show through the image. GIFs can also be interlaced, which is a way of saving a graphic so that it loads progressively — first a blurry, low-detail version is loaded, and then successive layers of detail are added. This usually means a larger overall filesize, but it means that a version of the image gets placed onto the viewer's screen much quicker, and so is beneficial in many situations, as it gives the impression of a speedier download.

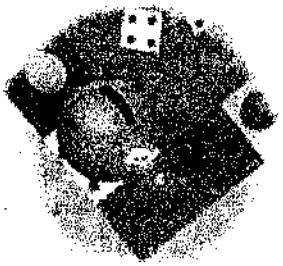
GIFs (variously pronounced "gif" or "jif") are a very good format for most of the graphics you'll be using on your site, though PNGs below are better in many regards. Experimentation is the key to success.

JPEG — Joint Photographic Experts Group

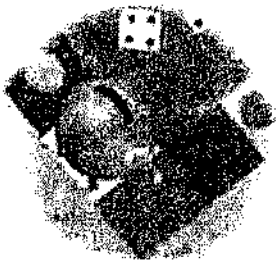
JPEG always uses lossy JPG compression, but its degree is selectable, for higher quality and larger files, or lower quality and smaller files. The 16-bit JPEG format (usually written without the E), was designed with photographs in mind. It is capable of displaying millions of colours at once, without the need for dithering, allowing for the complex blend of hues that occur in photographic images. JPGs use a complex compression algorithm, which can be applied on a sliding scale. Compression is achieved by 'forgetting' certain details about the image, which the JPG will then try to fill in later when it is being displayed. You can save a JPG with 0% compression for a perfect image with a large filesize; or with 80% compression for a small but noticeably degraded image. In practical use, a compression setting of about 60% will result in the optimum balance of quality and filesize, without letting the lossy compression do too much damage. Though JPGs can be interlaced, they lack many of the other special abilities of GIFs, like animation and transparency. Simple graphics with large blocks of colour should not be saved as JPGs because the edges get all smudgy.

The JPEG ("jay-peg") format is likely to be replaced at some point in the future by the updated JPEG2000 format.

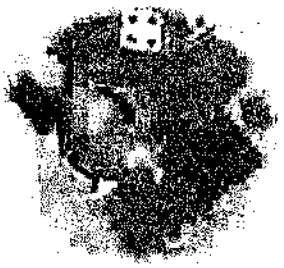
0% compression



60% compression



80% compression



99% compression

JPEG Examples

0% compression 60% compression

80% compression 99% compression

PNG — Portable Network Graphics

PNG uses ZIP compression which is lossless, and slightly more effective than LZW (slightly smaller files). PNG is a newer format, designed to be both verstile and royalty free, back when the LZW patent was disputed. PNG is a format specifically for the web in response to a licensing scheme introduced which meant the creators of any software that supported the GIF format had to pay five thousand dollars for the privilege (this tax has since expired). While they were at it however, the creators of PNG ("ping") went ahead and created a format superior to GIF in almost every way.One version of the format, PNG-8, is similar to the GIF format. It can be saved with a maximum of 256 colours and supports 1-bit transparency. Filesizes when saved in a capable image editor like FireWorks will be noticeably smaller than the GIF counterpart, as PNGs save their colour data more efficiently.PNG-24 is another flavour of PNG, with 24-bit colour support, allowing ranges of colour akin to a high colour JPG. PNG-24 is in no way a replacement format for JPG, however, because it is a loss-less compression format. This means that filesizes can be rather big against a comparable JPG. PNG's main draw are alpha-channels. Instead of the rudimentary transparency options in other formats (where a pixel is either transparent or opaque), an alpha channel can specify the opacity of any pixel from 0–255, where 0 is fully transparent and 255 is fully opaque. This allows you to create a graphic that can be placed on top of any background colour and will retain a translucent effect, with the background showing through the pixels that are not opaque.The problem with this — and there had to be one — is that IE6 doesn't support alpha-channels. Once a new version of IE comes out with this vital support, you should see the effect springing up on trendy designers' sites across the web. PNG can be made into multi-image files through the MNG extension of the format, but browser support is patchy for this format. Stick with GIFs for your animations.

6.16 CLINT & SERVER SIDE SCRIPTING :

The difference between server and client side operations is a very important concept to understand when it comes to designing the architecture of a web site.

Client-side scripts are often embedded within an HTML document (hence known as an "embedded script"), but they may also be contained in a separate file, which is referenced by the document (or documents) that use it (hence known as an "external script"). Upon request, the necessary files are sent to the user's computer by the web server (or servers) on which they reside. The user's web browser executes the script, then displays the document, including any visible output from the script. Client-side scripts may also contain instructions for the browser to follow in response to certain user actions, (e.g., clicking a button). Often, these instructions can be followed without further communication with the server.

By viewing the file that contains the script, users may be able to see its source code. In contrast, server-side scripts, written in languages such as Perl, PHP, and server-side VBScript, are executed by the web server when the user requests a document. They produce output in a format understandable by web browsers (usually HTML), which is then sent to the user's computer. The user cannot see the script's source code (unless the author publishes the code separately), and may not even be aware that a script was executed. Documents produced by server-side scripts may, in turn, contain client-side scripts.

Client-side scripts have greater access to the information and functions available on the user's browser, whereas server-side scripts have greater access to the information and functions available on the server. Server-side scripts require that their language's interpreter be installed on the server, and produce the same output regardless of the client's browser, operating system, or other system details. Client-side scripts do not require additional software on the server (making them popular with authors who lack administrative access to their servers); however, they do require that the user's web browser understands the scripting language in which they are written. It is therefore impractical for an author to write scripts in a language that is not supported by popular web browsers.

Due to security restrictions, client-side scripts may not be allowed to access the user's computer beyond the web browser application. Techniques like ActiveX controls can be used to sidestep this restriction.

Self Learning Exercises

1.How do you center a table?

2.How do you create a link that opens a new window?

3. How do you get a button which takes me to a new page?

4. How do you indent the first line in my paragraphs?

5.How do I right align text or images?

6.17 TILE AND FOOTERS:

Tiles is used to create reusable presentation components. With Tiles, we first define a base layout with different sections after that we define which jsp page should fill in the corresponding regions in an externals configuration file. The same layout can be reused any number of times by specifying different jsp pages.

To use Tiles in the Struts application, we need to add the following <plug-in> definition to the struts-config.xml file.

<plug-in className="org.apache.struts.tiles.TilesPlugin">

<set-property property="definitions-config" value="/WEB-INF/tiles-defs.xml" />

<set-property property="moduleAware" value="true" />

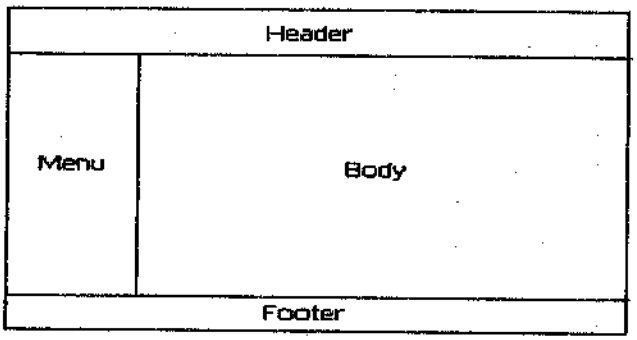
</plug-in>

There are two ways in which you can specify the Tiles definition and their attributes. One is using JSP Tile Definition and the other way is using XML Tile Definition.

All JSP pages that uses Tiles should have the following taglib extension.

%@taglib uri="/WEB-INF/struts-tiles.tld" prefix="tiles" %

Lets first design the base layout page using tiles. The base layout page is a normal jsp page, which defines different sections. A region is defined using the <tiles:insert> tag. The attribute value hold the name of the region.



The layout shown above can be created using the following code.

```
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title><tiles:getAsString name="title" ignore="true" /></title>
</head>
<body>
<table border="1" cellpadding="2" cellspacing="2" align="center">
<tr>
<td height="20%" colspan="2">
<tiles:insert attribute="header" ignore="true" />
</td>
</tr>
<tr>
<td width="20%" height="250">
<tiles:insert attribute="menu" />
</td>
<td>
<tiles:insert attribute="body" />
</td>
</tr>
<tr>
```

<td height="20%" colspan="2">

<tiles:insert attribute="footer" />

</td>

</tr>

</table>

</body>

</html>

If the ignore attribute is set to true, then that region is optional. Even if the attribute is not specified the code will work fine.

To create our home page we need to insert title, header, menu, body and footer jsp pages. The following code is used to create our home page.

<%@taglib uri="/WEB-INF/struts-tiles.tld" prefix="tiles" %>

<tiles:insert page="/baseLayout.jsp" flush="true">

<tiles:put name="title" value="Tiles Example" />

<tiles:put name="header" value="/header.jsp" />

<tiles:put name="menu" value="/menu.jsp" />

<tiles:put name="body" value="/body.jsp" />

<tiles:put name="footer" value="/footer.jsp" />

</tiles:insert>

The name attribute of the put tag specifies the region in the baseLayout in which the corresponding page specified by the value attribute should be displayed. In our example the header region is occupied by the header.jsp page, the menu part is occupied by the menu.jsp page, the body part by the body.jsp page and the footer by the footer.jsp page. The only section that will be changing when the user request a different page is the body part.

On executing the application the following home page is displayed. The table border is set to 1 inorder to give a clear separation between the regions. On clicking the links in the left menu, only the body part of the page should change. So instead of forwarding each link to a jsp page, we forward it to a Tile definition.

A Tile definition can be added in the following way.

<definition name="baseLayout" path="/baseLayout.jsp">

<put name="title" value="Tiles Example" />

<put name="header" value="/header.jsp" />

<put name="menu" value="/menu.jsp" />

<put name="body" value="/body.jsp" />

<put name="footer" value="/footer.jsp" />

</definition>

The name of the Tile definition is "baseLayout" and it contains one jsp page for each region. Since the title region is specified using getAsString tag, we provide a String variable instead of a jsp page. When an action is forwarded to the Tile definition baseLayout, then the baseLayout.jsp page will be displayed with corresponding jsp pages in the Tile definition .Tiles make the separation of layout from contents,

JSP pages and Layouts are reusable, it is a superset of JSP templates with more features, it is extends concept of JSP templates with "parameterized components" or "Tiles"

6.18 SUMMARY:

HTML is a programming language. The instructions are not compiled by a traditional compiler but rather by a WWW browser. The Web browser interprets the elements in the file and displays the file according to those elements. HTML head ElementsTagDescription<head>Defines information about the document<title>Defines the title of a document<base />Defines a default address or a default target for all links on a page<link />Defines the relationship between a document and an external resource<meta / >Defines metadata about an HTML document<script>Defines a client-side script<style>Defines style information for a document

6.19 GLOSSARY

Containers :Containers refer to the area enclosed by <start> and </stop> tags where the commands take effect. Some tags, such as <HTML> enclose the entire document, others enclose lists, and others can enclose a single world. One of the more common problems in writing HTML is when one forgets to add a stop tag and else of the container, thus leaving the tag to effect the rest of the document. So try and keep track of each container that you create.

HTML :(Hyper Text Mark-up Language) While it is not an official computer language such as C++ or pascal, HTML is the way in which computers communicate across the world wide web. It consists of many tags that allow writers to mark-up text documents so that they can be viewed by others using web browsers.

Pixels :Pixels are a method of measurement used in the computer world. Your computer screen's resolution is measured in pixels, 832*624, 640*480, etc. They are the number of "dots, or pixels, that computer displays horizontally and vertically. This allows for a standard to be set, so that a 100*50 picture always comes up as the same relative size, but could vary in absolute size depending on the resolution of your monitor

Tags :Tags are the commands that give HTML documents their functionality. They consist of commands placed within < and >. Some tags work by placing a start and stop tag at each end of the desired text, such as below <big>.This makes the text bigger <big>.The stop tags are often the same as the start with the addition of "/" at the beginning of the stop tag. Using both of these tags places the desired text in a container. But not all tags need to use a container, and thus don't need a stop tag. In the glossary below you will find a "</>" next to the tags that require a stop tag.

Web Browsers :Web browsers are the applications that allow one to view HTML documents from either your own computer or from any other computer connected to the internet.

6.20 FURTHER READINGS:

1. HTML 2.0 Proposed Standard - RFC 1866

2. Borenstein N., and N. Freed, "MIME (Multipurpose Internet Mail Extensions) Part One: Mechanisms for Specifying and Describing the Format of Internet at http://www.w3.org/pub/WWW/TR

3. Internet Media Types - RFC 1590

4. J. Postel. "Media Type Registration Procedure." RFC 1590, USC/ISI, March 1994. ftp://ds.internic.net/rfc/rfc1590.txt.

6.21 ANSWERS TO SELF LEARNING EXERCISES

1.To center a table we use <TABLE ALIGN=CENTER>, but this doesn't work in several popular browsers. Put <CENTER>; around the entire table for those browsers.

2..<A TARGET="_blank" HREF=...> opens a new, unnamed window.

<A TARGET="abc" HREF=...> opens a new window named "abc", provided that a window or frame by that name does not already exist.

3.This is best done with a small form:

<FORM ACTION="http://url.you.want.to.go.to/" METHOD=GET>
<INPUT TYPE=submit VALUE="Text on button" NAME=foo>
</FORM>

4. Use a style sheet with the following ruleset:

P { text-indent: 5% }

5.You can use the ALIGN=right attribute on paragraphs, divisions, and headers, just as you use ALIGN=center to create centered paragraphs and such. This will right align your text (ragged left). Perhaps what you really want is justified text, in which the left and right edges are both aligned so that all lines are the same length. (This is sometimes incorrectly called "right justify".) There's no way to justify text in HTML 3.2, but it can be done in a CSS1 style sheet with "text-align: justify". (Before you do that, a caveat: though justified text may look pretty, human factors analysis shows that ragged right is actually easier to read and understand.)

6.22 UNIT END QUESTIONS:

1. What is TT command ?
2. Explain Tile and Footers with an example.
3. How do you design a table of 3X2 ?
5. Explain about iframe.
6. What is a MARQUEE element?
7. Describe about server side and client side image map?
8. What is META tag ? Explain different attributes of META tag.
9. Explain different type of special characters.
10. How do you place text over an image?
11. How can you place two paragraphs next to each other?
12. What is imported Style Sheet? How to link?
13. How do you combine multiple sheets into one?
14. Can Style Sheets and HTML stylistic elements be used in the same document?
15. How do you create frames? What is a frameset?
16. What is a Hypertext link?
17. What is a DOCTYPE? Which one do I use?
18. How can you nest tables within tables?
19. How do you create a link that opens a new window?
20. How do you remove the border around frames?

UNIT VII
JAVA SCRIPT

STRUCTURE OF THE UNIT

7.0 OBJECTIVE

At the end of unit, you will be able to:

- Understand the basic concepts of JavaScript.
- Procedure for writing JavaScript in HTML page
- Basics of JavaScript as programming language

- Decision making statements in JavaScript like If, Switch
- Different types of loops

7.1 INTRODUCTION:

HTML creates static web pages. HTML tags are just instructions on document layout and structure; the display of the document in the window is dependent on the browser. They are useful and can be entertaining or informative, but with no interactivity and negligible user involvement. Interactive pages can be described as those that understand and process user behavior (actions) like mouse movements,mouse button clicks, HTML button clicks etc. Interactive pages cannot be built with only HTML, we need a programming language. Further, since the response time to user actions should be quick, the programming language has to be embedded in the browser itself. (Programs residing on servers cannot bring about interactivity due to the time taken for sending the user input and receiving the response). Keeping these things in mind, the people at Netscape came out with a client-side (read browser) language that was integrated with version 2 of Netscape Navigator. They called this language **JavaScript.**

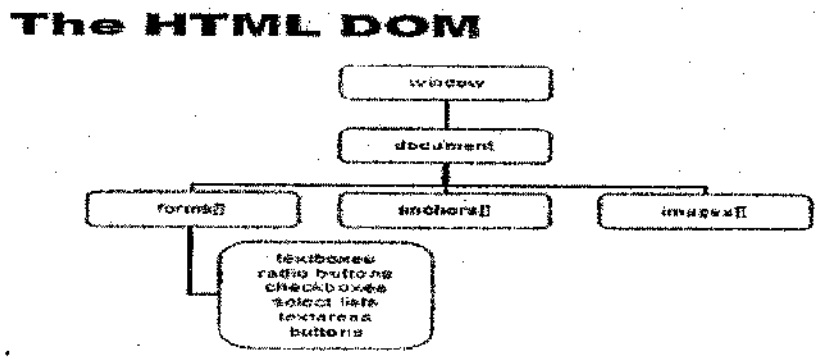
JavaScript is a scripting language based on Java. A scripting language is a light weight programming language. It is an object based language that allows creation of interactive Web Pages, i.e. JavaScript was designed to add interactivity to HTML page. It allows user entries, which are loaded into an HTML form to be processed as required. This empowers a web site to return site information according to user's request. Java is programming language and JavaScript is scripting language. There are some basic difference between programming language and scripting language:

- Programming languages are mainly based on compilation, while scripts are interpreted.
- Programming languages run independently, while scripting languages run inside another program.
- Some languages are platform dependent, but scripting languages are always platform independent.

Since the development environment in JavaScript is object oriented it will provide an object hierarchy to work with an Object Oriented Programming (OOP) environment and always offers event driven programming. This means that the programming environment will recognize object based events and allow the connection of code parts to these events. When an event occurs, the part will execute. With the help of HTML DOM JavaScript ,uses all the above facilities of OOP. So first let's understand HTML DOM.

7.1.1 HTML DOM

The HTML Document Object Model (DOM) is the browser's view of an HTML page as an object hierarchy, starting with the browser window itself and moving deeper into the page, including all of the elements on the page and their attributes. Below is a simplified version of the HTML DOM.



As shown, the top-level object is window. The document object is a child of window and all the objects (i.e, elements) that appear on the page (e.g, forms, links, images, tables, etc.) are descendants of the document object. These objects can have children of their own. For example, form objects generally have several child objects, including textboxes, radio buttons, and select menus.

7.1.2 Advantages

- JavaScript is an interpreted language, which requires no compilation steps.
- It dose not require any special editor. It can be written in any text editor(for example Notepad) and saved as HTML file that can be read and interpreted by any browser that is JavaScript enabled(like Netscape, Internet Explorer).
- It is easy to learn and can be developed in a short period of time.
- JavaScript is Object/Event based programming language, so JavaScript can recognize any event(like Button Pressed, Mouse Click etc) and execute code accordingly.
- Being an interpreted language, scripts in JavaScript are tested line by line and the errors are listed as they are encountered, so it is easy to locate errors, make changes and test it again.
- JavaScript is platform independent, it means it is completely independent of the hardware on which it works. We just need any JavaScript enabled web browser.

7.1.3 Applications

With the help of JavaScript we can do so,many things. Some examples are:

- Change page contents dynamically.
- Validate forms at the client-side saving both the precious server resources and time.
- Create mouseover effects, change background color of a document with a click of a button
- Customize graphics selection
- Move HTML elements around pages.
- Load content in new browser windows and frames.
- Make online games.
- Add special effects to web page

7.1.4 Basic Rules

1 JavaScript statements end with semi-colons.

2 JavaScript is case sensitive.

3 JavaScript has two forms of comments:

Single-line comments begin with a double slash (//).

Multi-line comments begin with "/*" and end with "*/".

Syntax:

// This is a single-line comment

/*

This is

a multi-line

comment.

*/

7.2 SCRIPT WRITING PROCEDURE

JavaScript syntax is embedded into an HTML file. A browser reads HTML file and interprets HTML tags. All JavaScript need to be included as an integral part of an HTML document when required, so the browser needs to be informed that specified section of HTML code is JavaScript. The browser will then use its built-in JavaScript engine to interpret this code. Embedding of JavaScript inside HTML documents can be done in three ways:

- The code is placed between <SCRIPT> ... </SCRIPT> tags.
- Code is included inside an HTML tag.
- The entire code is placed in another file, which is called through the SRC attribute of the <SCRIPT> tag.

7.2.1 Using the <Script> tag

To insert a JavaScript into an HTML page, we use the <script> tag. Inside the <script> tag we use the type attribute to define the scripting language or we can use the language attribute to define scripting language. The <script type="text/javascript"> and </script> tells where the JavaScript starts and ends:

<script type="text/javascript">...</script>'

OR

<script language="javascript">..</script>

Example:

```
<html>
  <body>
     <script type="text/javascript">
          document.write("Hello World!");
     </script>
  </body>
</html>
```

The **document.write** command is a standard JavaScript command for writing output to a page.

By entering the document.write command between the <script> and </script> tags, the browser will recognize it as a JavaScript command and execute the code line. In this case the browser will write Hello World! to the page.

7.2.2 JavaScript code inside HTML tags

To make interactive pages you need to catch or recognize user actions (also called **events**). We will learn about events in next unit in detail. The events generated by the user may be mouse clicks, mouse movement etc. To capture these events, we employ small JavaScript code that is placed right inside an HTML tag. Such code is called an **event handler.**

Example :

 Home Page

Here **onmouseover** is an event handler and it manages a mouse over action. In this case, onmouseover event handler triggers some response whenever the user moves the mouse cursor over the text enclosed between the anchor tags.

7.2.3 Placing JavaScript in another file

In this method we can write JavaScript code in another file. This external file can then be called using the SRC attribute of <SCRIPT> tag.

Example:

```
<script language="javascript" src="myfile.js" type="text/javascript">
<!—
//—>
</script>
```

Note that the external file containing the JavaScript code has **.js** extension. It is included in the HTML document through the **SRC attribute** that takes the URL of the file as its value.
There are three main advantages in using this technique. Firstly, you don't need to place the code in all HTML documents, secondly, if a change is required you have to modify only one file instead of several and thirdly, it protects precious code. However, the main disadvantage is that the server has to locate and open one more file.

7.3 TESTING VISITOR BROWSER

Browsers that do not support JavaScript will display JavaScript as page content. To prevent them from doing this, and as a part of the JavaScript standard, the HTML comment tag should be used to "hide" the JavaScript.

Just add an HTML comment tag <! - - before the first JavaScript statement, and a - - > (end of comment) after the last JavaScript statement, like this:

```
<html>
   <body>
     <script type="text/javascript">
       <!- -
          document.write("Hello World!");
     //- - >
    </script>
  </body>
</html>
```

The two forward slashes at the end of comment line (//) is the JavaScript comment symbol. This prevents JavaScript from executing the —> tag.

<noscript> tags

Another way to deal this situation is use of <noscript> tags. The <noscript> tag is used to provide an alternate content for users that have disabled scripts in their browser or have a browser that doesn't support client-side scripting.

The noscript element can contain all the elements that you can find inside the body element of a normal HTML page.

The content inside the noscript element will only be displayed if scripts are not supported, or are disabled in the user's browser.

```
<html>
 <script language="JavaScript">
   <!—function name() {commands} //—>
 </script>
 <noscript>Your browser doesn't support script codes.</noscript>
</html>
```

7.4 VARIABLES IN JAVASCRIPT

Variables are used to hold values in memory. These values can be changed continually during the script execution. For example, if a variable contains the number 2 as value, we can change it (using operators) to contain something else. JavaScript variables and constant are preferred to be declared in <HEAD>...</HEAD> tags, because the head of an HTML document in always processed before the body. Variables are used to store values that can be used in other parts of a program. Variables always have a name associated with them via they can be referred later. When naming variables, it is good programming practice to structure a descriptive name.

Rules for JavaScript variable names:

- Variable names are case sensitive (y and Y are two different variables)
- Variable name can begin with an uppercase letter (A through Z), lowercase letter(a through z), and underscore character(_).
- If two words are used to name a variable then it is a programming convention to start the first letter of the first word in lower case and the first letter of the second word in uppercase for example, variableName.

Valid variable names
first_name
invo2
_sum
Average
Invalid variable names
100_marks (name starts with a numeral)
rate%_of_inflation (non legal character)

Data types

Variables store data. In JavaScript, this data can be of several types:

- **Number**: an integer or a *floating-point* number.
- **String**: Consists of alphabet, numerals or any other characters (even escape characters).
- **Boolean**: A logical *true* or *false* value.
- **Null**: Consists of a value, *null*.
- **Undefined**: Consists of a value, *undefined*.

Declaration

JavaScript variables are declared with the var keyword

```
var x;
var name;
var age;
```

After the declaration shown above, the variables are empty (they have no values yet).

However, you can also assign values to the variables when you declare them:

```
var x=5.5;
var name="ram";
var age=21;
```

JavaScript is a loosely-typed language. This means that you do not specify the data type of a variable when declaring it. It also means that a single variable can hold different data types at different times and that JavaScript can change the variable type on the fly. For example, the age variable above is an integer. We can store a string value in age, for example:

```
var age="30";
```

If you try to do a math function on age (e.g, multiply it by 5), JavaScript would dynamically change it to an integer. Although this is very convenient, it can also cause unexpected results

Incorporating variables in A Script

Variables declared in HEAD section of HTML page can be used in BODY part. The following example illustrates incorporating variables in a script.

```
<html>
    <head>
        <script type="text/javascript">
            var name = prompt("enter your name","name");
        </script>
    </head>
    <body>
        <script type="text/javascript">
            document.write("<h2> hello"+name+"</h2>");
        </script>
    </body>
</html>
```

The JavaScript **prompt()** method picks up a string from the user which is then assigned to the variable name. The JavaScript code **document.write()** embedded in the **<BODY>...</BODY>** tags writes the contents of the variable *name* to the client browser.

JavaScript Operators

Arithmetic Operators

Operator	Description
+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Modulus (remainder)
++	Increment by one
—	Decrement by one

Assignment Operators

Operator	Description
=	Assignment
+=	One step addition and assignment (a+=3 is the same as a=a+3)
-=	One step subtraction and assignment (a-=3 is the same as a=a-3)
*=	One step multiplication and assignment (a*=3 is the same as a=a*3)
/=	One step division and assignment (a/=3 is the same as a=a/3)
%=	One step modulus and assignment (a%=3 is the same as a=a%3)

String Operators

Operator	Description
+	Concatenation (var greeting = "Hello " + firstname;)
+=	One step concatenation and assignment (var greeting = "Hello "; greeting += firstname;)

Ternary Operator

Operator	Description
?:	Conditional evaluation (var evenOrOdd = (number % 2 == 0) ? "even" : "odd";)

7.5 SCREEN SIZE AND HISTORY PROPERTY

JavaScript supports a window.screen object that contains basic information about the screen of visitor(we will learn more about object in next unit). With this information, pages could be designed to custom fit the particularities of each screen. All screen information is stored in the screen object of JavaScript, a new object. They are in the form of properties:

Properties of the Screen Object

- availHeight - Specifies the height of the screen, in pixels, minus interface features such as the taskbar in Windows.
- availWidth - Specifies the width of the screen, in pixels, minus interface features such as the taskbar in Windows.
- colorDepth - The bit depth of the color palette available for displaying images in bits per pixel.

- Height- The total height of the screen, in pixels.
- pixelDepth- Display screen color resolution (bits per pixel).
- Width- The total width of the screen, in pixels.

Each property is accessed just like any other, first the name of the object, than the property it self:
Example: screen.width

Example: Script to display the width and height of visited browser screen.

```
<head>
<script type="text/javascript">
alert('your screen is:\n\n' + screen.width + ' pixels by ' + screen.height + ' pixels');
</script>
</head>
```

History Properties

The history object contains the URLs visited by the user (within a browser window). The history object is part of the window object and is accessed through the window.history property.

Properties

- current - The current document URL.
- length - The number of entries in the history object.
- next - The URL of the next document in the history object.
- previous - The URL of the last document in the history object.

Methods

- back() - Go to the previous URL entry in the history list. This does the same thing as the browser back button. The following HTML code creates a back button:

```
<form>
<input type="button" value="go back" onclick="history.back()">
</form>
```

- forward()- Go to the next URL entry in the history list. This does the same thing as the browser forward button. This is only effective when there is a next document in the history list. The back function or browser back button must have previously been used for this function to work. The following HTML code creates a forward button:

```
<form>
<input type="button" value="go forward" onclick="history.forward()">
</form>
```

- go(relPos | string) - This function will accept an integer or a string. If an integer is used, the browser will go forward or back (if the value is negative) the number of specified pages in the history object (if the requested entry exists in the history object). The following example will move the browser back one page.

```
<form> <input type="button" value="go back" onclick="history.go(-1)"> </form>
```

7.6 IF STATEMENT

It is one of the conditional statements supported by JavaScript. With the help of If statement we can perform different actions for different decisions. In JavaScript we have the following If statements:

- If statement
- If--else statement
- Nested if--else statement

7.6.1 If statement

This statement is use if we want to execute a set of code when condition is true.

Syntax:

```
if(condition)
{
    Statements;
}
```

Example:

```
var a = 5;
var b = 5;
if(a == b)
{
alert("The two quantities are equal");
 }
```

First, two variables are initialized and assigned the same numeric value (5). The *if* statement then checks for their equality and pops-up an alert box

if the two variables are equal. The == *comparison operator* does the job of checking the two variables.

7.6.2 If..else statement

This statement is used if we want to select one of set of two sets of action to execute depending on whether condition is true or false.

Syntax:

```
if(condition)
{
    Statements;
}
else
{
    Statements;
}
```

Example:

```
var n ="10";
if(n%2)
{
        alert("Number is Odd");
}
else
{
        alert("Number is even");
}
```

Conditions in JavaScript can either be **true** or **false**. A false condition is one in which the result is zero or null. In the code above, the remainder left after dividing an even number by 2 will be zero (number modulus 2 = 0), hence the condition will evaluate to false. However, if the number is odd, the remainder left after dividing the number by 2 will be 1 and the condition will evaluate to true. Thus, the code block inside *else* will be executed when the number is even.

7.6.3 Nested if..else statement

When a series of conditions are involved in the statement, we may have to use more than one..else statement in nested forum.

Syntax:

```
if(condition)
{
                Statements;
}
else if(condition)
        {
                Statements;
        } else
        {
                Statements;
}
```

Example:

```
if(number > 0)
{
alert("Number is a positive integer");
 }
else if(number < 0)
{
alert("Number is a negative integer");
 }
```

```
else
  {
 alert("Number is 0");
  }
```

Note that the *else if* clause is followed by another condition placed between parenthesis. If this condition is true, the statement inside the *else if* block are executed.

The code above checks the value of variable **number**. When **number** is greater than 0, the statements in *if* block are executed and when **number** is less than 0, the statements in *else if* block take over. Finally, if the number is equal to zero, the conditions in *if* and *else if* are 'false' and the program execution falls to the statements in *else* clause block.

7.7 JAVASCRIPT LOOPS

Looping refers to the ability of a block of code to repeat itself. This repetition can be for a predefined number of times or it can go until certain conditions are met. For instance, a block of code needs to be executed till the value of variable becomes 10 (conditional looping), or a block of code needs to be repeated 5 times.

There are several types of loops in JavaScript.

- while
- do...while
- for
- for...in

7.7.1 While loop

The while loop loops through a block of code while a specified condition is true.

Syntax:

```
while (conditions) {
 statements;
}
```

Example:

The example below defines a loop that starts with i=0. The loop will continue to run as long as **i** is less than, or equal to 10. **i** will increase by 1 each time the loop runs:

```
<html>
<body>
<script type="text/javascript">
var i=0;
while (i<=10)
 {
 document.write("The number is " + i);
 document.write("<br />");
 i++;
 }
```

```
</script>
</body>
</html>
```

7.7.2 Do..While loop

We can consider the ***do-while*** loop as a modified version of the *while* loop. Here, the condition is placed at the end of the loop and hence, the loop is executed at least once.

Syntax:

```
do {
 statements;
} while (conditions);
```

Example:

The example below uses a do...while loop. The do...while loop will always be executed at least once, even if the condition is false, because the statements are executed before the condition is tested:

```
<html>
<body>
<script type="text/javascript">
var i=0;
do
 {
 document.write("The number is " + i);
 document.write("<br />");
 i++;
 }while (i<=10);
</script>
</body>
</html>
```

7.7.3 For loop

In for loop, after the execution of the initialization statements condition is checked. Only when the condition returns 'true', the interpreter enters the loop. After the first iteration, the updation statements are executed and then the condition is evaluated again. This continues till the condition returns 'false' and the loop stops.

Syntax:

```
for (initialization; conditions; change) {
 statements;
}
```

Example:

The example below defines a loop that starts with i=0. The loop will continue to run as long as i is less than, or equal to 10. i will increase by 1 each time the loop runs.

```
<html>
```

```
<body>
<script type="text/javascript">
var i=0;
for (i=0;i<=10;i++)
{
document.write("The number is " + i);
document.write("<br />");
}
</script>
</body>
</html>
```

7.7.4 For..in loops

for...in loops are specifically designed for looping through arrays or through the properties of an object.. It is very useful for control arrays of objects.

Syntax:

```
for (variable in object)
 {
 statements:
 }
```

The code in the body of the for...in loop is executed once for each element/property. The variable argument can be a named variable, an array element, or a property of an object.

Example:

```
<html>
<body>
<script type="text/javascript">
var x;
var mycars = new Array();
mycars[0] = "Zen";
mycars[1] = "Alto";
mycars[2] = "BMW";
for (x in mycars)
 {
 document.write(mycars[x] + "<br />");
 }
</script>
</body>
</html>
```

7.8 SWITCH STATEMENT

In multiway decision, as the number of conditions increases, the complexity of program increases. The Program becomes difficult to read and follow. In this situation switch statement is better than nested if..else. It means, switch statement is used when we want to select one of many blocks of code to be executed.

Syntax:

```
switch(expression)
{
case constant_1:
  statements;
  break;
case constant_2:
  statements;
  break;
default:
  statements;
 }
```

The value of the expression is then compared with the values for each case in the structure. If there is a match, the block of code associated with that case is executed. Use **break** to revent the code from running into the next case automatically.

Example:

```
<script type="text/javascript">
//You will receive a different greeting based
//on what day it is. Note that Sunday=0,
//Monday=1, Tuesday=2, etc.

var d=new Date();
theDay=d.getDay();
switch (theDay)
{
case 5:
 document.write("Finally Friday");
  break;
case 6:
 document.write("Super Saturday");
  break;
case 0:
 document.write("Sleepy Sunday");
  break;
default:
 document.write("I'm looking forward to this weekend!");
}
</script>
```

Self Learning Exercises

Fill in the Blanks

1. JavaScript is a scripting language created by.....
2. JavaScript is embedded between the..... HTML tag.
3. Capturing user requests is traditionally done via a.....

4. ..... object contains basic information about the screen of visitor browser.
5. The ..... statement is used to terminate loops or to exit from a switch.

True or False

1. JavaScript is not a interpreted languages.
2. A user request form can be created with the <FORM></FORM> HTML tag.
3. JavaScript syntax is embedded into a <BODY> </BODY> HTML tag.
4. The history object contains the URLs visited by the user.
5. JavaScript is object based programming language.

7.9 BREAK STATEMENT

The break statement is used to terminate loops or to exit from a switch. When break is encountered inside any loop, control automatically passes to the first statement after the loop. It can be used within a while, a do-while, or a switch statement.

Example:

```
<html>
<body>
<script type="text/javascript">
 var i=0;
 for (i=0;i<=10;i++)
 {
  if (i==3)
  {
   break;
  }
 document.write("The number is " + i);
 document.write("<br />");
 }
</script>
</body>
</html>
```

7.10 SUMMARY

- JavaScript was designed to add interactivity to HTML page.
- The HTML Document Object Model (DOM) is the browser's view of an HTML page as an object hierarchy.
- To insert a JavaScript into an HTML page, we use the <script> tag.
- JavaScript variables and constant are preferred to be declared in <HEAD>...</HEAD> tags.
- Screen object contains basic information about the screen of visitor browser.
- The history object contains the URLs visited by the user.
- With the help of If statement we can perform different actions for different decisions.

- Looping refers to the ability of a block of code to repeat itself.
- Switch statement is used when we want to select one of many blocks of code to be executed.

7.11 GLOSSARY

address: Usually refers to an Internet machine name; for example, www.machine.com.

anchor: A location within an HTML document that is invisibly "marked" with HTML tags. Links can point to this anchor, and take the user to specific locations within one HTML document.

browser: A program that allows you to navigate the World Wide Web. Browsers can be either text-based or graphical. Some examples of browsers are Netscape Navigator, HotJava, and Microsoft Internet Explorer.

conditional statement: A JavaScript statement that directs program flow based on the validity or invalidity of a comparison. Examples include if...else and while.

HTML: HyperText Markup Language, the formatting language supported by the World Wide Web. Web documents are written using various HTML tags, which control how the information in the document is presented through the browser.

http: HyperText Transfer Protocol, the protocol used by the World Wide Web to transfer HTML documents.

JavaScript: An English-like scripting language that supports much of Java's capabilities but doesn't require extended programming knowledge.

7.12 FURTHER READINGS

- Dynamic HTML: The Definitive Reference
- JavaScript Programmer's Reference, Wrox, Author: Cliff Wootton
- Beginning JavaScript, Wrox, Author: Paul Wilton
- JavaScript: The Definitive Guide, O'Reilly, Author: ,David Flanagan

7.13 ANSWERS TO SELF LEARNING EXERCISES

1. Netscape
2. <SCRIPT></SCRIPT>
3. Form
4. Screen
5. Break
1. False
2. True
3. False
4. True
5. True

7.14 UNIT END QUESTIONS

1. How is JavaScript included in HTML document.
2. What is DOM? How JavaScript is related to it?
3. What data types does JavaScript use?
4. Explain the Screen and History objects.
5. List out the applications of JavaScript.

UNIT VIII

ADVANCE JAVASCRIPT

STRUCTURE OF THE UNIT

8.0 OBJECTIVE

After this unit you will be able to understand:

- Basic elements of advance JavaScript
- Way of declaring and accessing array in JavaScript
- Basics of event handling
- Event associated with different HTML elements
- Declaring user defined functions and use of built in functions
- Different string handling functions
- Requirement of form validation and basic concepts

8.1 INTRODUCTION

JavaScript is an Object Oriented Programming (OOP) language. An OOP language allows you to define your own objects and make your own variable types. (JavaScript is not a true Object Oriented language as C++ or Java but rather an **Object Based** language) some basic defitions related to OOps

Object : An object can be considered a "thing" that can perform a set of related activities. The set of activities that the object performs defines the object's behavior. For example, the hand can grip something or a Student (object) can give the name or address.

Methods: Methods are the actions that can be performed on objects.

Properties : Properties are the values associated with an object.

Examples:

In the following example we are using the length property of the String object to return the number of

characters in a string:

```
<script type="text/javascript">
        var txt="Hello World!";
       document.write(txt.length);
</script> // Output =12
```

In the following example we are using the toUpperCase() method of the String object to display a text in uppercase letters:

```
<script type="text/javascript">
var str="Hello world!";
document.write(str.toUpperCase());
</script> // Output = HELLO WORLD!
```

8.1.1 JavaScript Objects

JavaScript is used to manipulate or get information about objects in the HTML DOM. We have already discussed HTML DOM in previous unit 7. Objects in an HTML page have methods (actions, such as opening a new window or submitting a form) and properties (attributes or qualities, such as color and size).

Examples : Let's describe the browser window object and some of its properties and methods.
A browser window object is created whenever a document is loaded in a browser.

Properties

- Width
- Height
- Name
- The URL of the document it displays

Methods

- Open
- Close
- Resize

So, you can define a **window** object with its properties such as width, height, name etc. The behavior of the window can be controlled using its methods such as open, close, resize etc.
The document displayed by the browser window object is itself an object with its own properties and methods. Thus, the **document** object is contained in the **window** object.

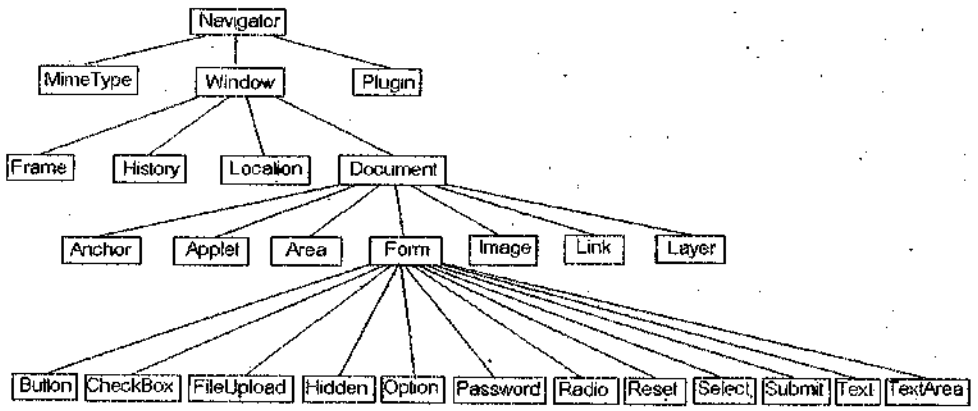
Many JavaScript objects are contained within each other. JavaScript objects have a container to contained object relationship rather than a class and subclass relationship. Properties are not inherited from one type of object to another. There are two main types of JavaScript objects.

- **Language Objects** - Objects provided by the language and are not dependent on other objects.

- **Navigator** - Objects provided by the client browser. These objects are all sub objects to the navigator object.

Beyond that, objects are those created by the programmer.

JavaScript Object Hierarchy



Language object is not actually object, rather it is used to represent the grouping of the objects supported by the JavaScript language. It contains:

- Array
- Boolean
- Date
- Math
- Number
- String

8.2 ARRAYS

Variable can store one value at a time. If we want to store a list of items (a list of names, for example) in a single variable, it could look like this:

Name1="raj";

Name2="ravi";

Name3="adi";

However, what if you want to loop through the names and find a specific one? And what if you had not 3 names, but 300?

This problem can be solved easily with array. An array can hold all your variable values under a single name. And you can access the values by referring to the array name. Each element in the array has its own ID so that it can be easily accessed

Arrays are JavaScript objects that are capable of storing a sequence of values. These values are stored in indexed locations within the array. The length of an array is the number of elements that an array contains. The individual elements of an array are accessed by using the name of the array followed by the index value of the array element enclosed in square brackets. Arrays are declared using the new keyword.

Array can be declared in the following ways:

1: Regular array (add an optional integer argument to control array's size)

```
var names=new Array();
names[0]="raj";
names[1]="ravi";
names[2]="adi";
```

2: Densed array : A dense array is an array that has been created with each of its elements being assigned a specific value. Listing the values of the array elements in the array declaration creates dense array.

```
var names=new Array("raj","ravi","adi");
```

We can refer to a particular element in an array by referring to the name of the array and the index number. The index number starts at 0.

Example:

```
document.write(names[0]);    // display raj
```

Elements of an array

JavaScript does not place any restrictions on the values assigned to the elements of an array. These values could be different types or could refer to other arrays or objects.

Example:

```
multiTypeArray = new array("val1","val2",1,2,true,false,null,new array(3,4)
```

8.3 JAVASCRIPT EVENTS

JavaScript is all about making web pages respond to actions or events. These events can be of two types depending on how they are generated. Actions such as mouse movements or mouse button clicks etc. are brought about by the user while others like page or image loading have lesser user involvement and take place as the document is loaded in the browser window.

Example: A webpage event could be associated with the action of the mouse cursor on the webpage. Such as:

- A mouse click on an object in a web page
- The movement of the mouse cursor across a web page
- The mouse cursor hovering at a specific place on a web page and so on

These will be events recognized by the Window object of the DOM.

Event Handling Process

Main steps for handling events in JavaScript are:

- Identify a web page object
- Choose an appropriate event associated with the object
- Have a standard method of connecting an object's event and JavaScript code snippets. JavaScript **event handler** mapped to an object's event to do this. Event handlers in JavaScript can be divided into two types Interactive and Non Interactive.

o Interactive Event Handler: An interactive event handler depends on user interaction with an HTML page. For example **onMouseOver**. This requires the user to move the mouse mouse cursor over a web page.

o Non-interactive Event Handler : A JavaScript, non-interactive, event handler, does not need user

interaction to be involved. For example **OnLoad**, it automatically executes whenever a form is loaded in to a web page.

HTML Event Handlers		
Event Handler	**Elements Supported**	**Description**
onblur	a, area, button, input, label, select, textarea	the element lost the focus
onchange	input, select, textarea	the element value was changed
onclick	All elements except applet, base, basefont, bdo, br, font, frame, frameset, head, html, iframe, isindex, meta, param, script, style, title	a pointer button was clicked
ondblclick	All elements except applet, base, basefont, bdo, br, font, frame, frameset, head, html, iframe, isindex, meta, param, script, style, title	a pointer button was double clicked
onfocus	a, area, button, input, label, select, textarea	the element received the focus
onkeydown	All elements except applet, base, basefont, bdo, br, font, frame, frameset, head, html, iframe, isindex, meta, param, script, style, title	a key was pressed down
onkeypress	All elements except applet, base, basefont, bdo, br, font, frame, frameset, head, html, iframe, isindex, meta, param, script, style, title	a key was pressed and released
onkeyup	All elements except applet, base, basefont, bdo, br, font, frame, frameset, head, html, iframe, isindex, meta, param, script, style, title	a key was released
onload	frameset	all the frames have been loaded
onload	body	the document has been loaded

HTML Event Handlers		
Event Handler	**Elements Supported**	**Description**
onmousedown	All elements except applet, base, basefont, bdo, br, font, frame, frameset, head, html, iframe, isindex, meta, param, script, style, title	a pointer button was pressed down
onmousemove	All elements except applet, base, basefont, bdo, br, font, frame, frameset, head, html, iframe, isindex, meta, param, script, style, title	a pointer was moved within
onmouseout	All elements except applet, base, basefont, bdo, br, font, frame, frameset, head, html, iframe, isindex, meta, param, script, style, title	a pointer was moved away
onmouseover	All elements except applet, base, basefont, bdo, br, font, frame, frameset, head, html, iframe, isindex, meta, param, script, style, title	a pointer was moved onto
onmouseup	All elements except applet, base, basefont, bdo, br, font, frame, frameset, head, html, iframe, isindex, meta, param, script, style, title	a pointer button was released
onreset	form	the form was reset
onselect	input, textarea	some text was selected
onsubmit	form	the form was submitted
onunload	frameset	all the frames have been removed
onunload	body	the document has been removed

```
 function inform()
  {
alert("Example of event handler");
  }
</script>
  </head>
<body>

<form>
<input type="button" name="test" value="Click me" onclick="inform()">
</form>
</body>
</html>
```

Example 2: JavaScript program that change the background color(using.bgColor property of document object) of form on the click of radio buttons:

```
<html>
<body>
  <form name="go">
<input type="radio" name="C1" onclick="document.bgColor='lightblue'">
<input type="radio" name="C2" onclick="document.bgColor='lightyellow'">
<input type="radio" name="C3" onclick="document.bgColor='lightgreen'">
  </form>
</body>
</html>
```

8.4 JAVASCRIPT FUNCTION

Functions are blocks of code that perform a specific task and often return a value. A JavaScript function may take zero or more parameters. There are two types of function in JavaScript:

- Built-in functions
- User Defined Functions

Built –in Functions:

JavaScript provides several built-in functions that can be used to perform explicit type conversion. Some of functions are listed below:

Number() : The Number() function takes one argument: an object, which it attempts to convert to a number. If it cannot, it returns NaN, for "Not a Number."

```
 var str1 = "1", str2 = "2";
 var str_sum = str1 + str2 //returns 12
 alert(str_sum);
 var num1 = Number(str1);
```

```
var num2 = Number(str2);
var int_sum = num1 + num2; //returns 3
alert(int_sum);
```

String(): The String() function takes one argument: an object, which it converts to a string.

```
var num1 = 1;
var num2 = 2;
var int_sum = num1 + num2; //returns 3
alert(int_sum);
var str1 = String(num1);
var str2 = String(num2);
var str_sum = str1 + str2 //returns 12
 alert(str_sum);
```

isNaN(): The isNaN() function takes one argument: an object. The function checks if the object is *not* a number (or cannot be converted to a number). It returns true if the object is not a number and false if it is a number.

```
isNaN("Hello"); //return true
isNaN(4); //false
isNaN("4"); //false
```

eval() : The eval() function can be used to convert a string expression to a numeric value.

Example: var total = eval("10*10+5"); // return 105 in total

parseFloat(): The parseFloat() function takes one argument: a string. If the string begins with a number, the function reads through the string until it finds the end of the number, hacks off the remainder of the string, and returns the result. If the string does not begin with a number, the function returns NaN.

```
Var str2Num = parseFloat("1.2xyz"); //return 1.2 into str2Num
Var str2Num = parseFloat("xyz"); //return NaN
```

parseInt() : The parseInt() function also takes one argument: a string. If the string begins with an integer, the function reads through the string until it finds the end of the integer, hacks off the remainder of the string, and returns the result. If the string does not begin with an integer, the function returns NaN.

```
Var str2Num = parseInt("123xyz"); // return 123 in str2Num
Var str2Num = parseInt("xyz"); // return NaN
```

alert() : The alert() function is used to display alert box. An alert box is often used if you want to make sure information comes through to the user.

```
alert("hello");
```

prompt(): The prompt() function is used to display prompt box. A prompt box is often used if you want the

user to input a value before entering a page. When a prompt box pops up, the user will have to click either "OK" or "Cancel" to proceed after entering an input value. If the user clicks "OK" the box returns the input value. If the user clicks "Cancel" the box returns null.

```
prompt("Enter any number","0");
```

confirm(): The confirm() function is used to display confirm box. A confirm box is often used if you want the user to verify or accept something. When a confirm box pops up, the user will have to click either "OK" or "Cancel" to proceed. If the user clicks "OK", the box returns true. If the user clicks "Cancel", the box returns false

```
var r=confirm("Press a button");
if (r==true)
  {
 alert("You pressed OK!");
  }
else
  {
 alert("You pressed Cancel!");
}
  }
```

User Defined Functions:

A function contains code that will be executed by an event or by a call to the function. You may call a function from anywhere within a page. Functions can be defined both in the <head> and inthe <body> section of a document. However, to assure that a function is read/loaded by the browser before it is called, it could be wise to put functions in the <head> section. Functions are declared and created using the function keyword. A function can comprise of the following:

§ A name for the function

§ A list of parameters

§ A block of JavaScript code that defines what the function does

Syntax

function *functionname*(*var1,var2,...,varn*)
{
statements;

}

The parameters var1, var2, etc. are variables or values passed into the function.

Basic rules:

- Should define the { and the } at the start and end of the function.
- A function with no parameters must include the parentheses () after the function name.
- The word function must be written in lowercase letters.
- Also note that you must call a function with the exact same capitals as in the function name.
- Functions that are going to return a value must use the return statement.

Example:

```
<html>
<head>
<script type="text/javascript">
function sum(a,b)
{
return a+b;
}
</script>
</head>
<body>
<script type="text/javascript">
document.write(sum(2,3));
</script>
</body>
</html>
```

Self Learning Exercises

Fill in the blanks

1. ..... are block of code that perform a specific task and return a value.
2. A..... array is an array that has been created with each of its elements being assigned a specific value.
3. The form tag has two properties namely..... and .....
4. JavaScript .....mapped an object's events to respective code.
5. The ..... object is contained in the window object.
6. The ..... function can be used to convert a string expression to a numeric value.

State True and False

1. JavaScript permits the creation of user defined functions.
2. parseInt() function converts float into string.
3. The String object is used to manipulate a stored piece of text
4. onMouseOver event is realted to keyboard.
5. A submit object used to reset a form back to default values

8.5 STRING HANDLING

The String object is used to manipulate a stored piece of text. To handle strings in JavaScript methods of the String object that are used, such as looking up a particular substring withina a string, splitting it into var

```
message="Hello";
    alert(message.charAt(1)) // return e
```

many, and more.

Here are the string handling related methods of the String object:

charAt(x) - Returns the character at the "x" position within the string.

Example :

concat(v1, v2,...)- Combines one or more strings (arguments v1, v2 etc) into the existing one and returns the combined string. Original string is not modified.

Example :

```
var message = "good";
alert( message.concat("morning")); // return good morning
```

indexOf(substr, [start])- Searches and (if found) returns the index number of the searched character or substring within the string. If not found, -1 is returned. "Start" is an optional argument specifying the position within string to begin the search. Default is 0.

Example:

```
var str1 = "welcome";
alert("str1.indexof("come")); // return 3
```

lastIndexOf(substr, [start])- Searches and (if found) returns the index number of the searched character or substring within the string. Searches the string from end to beginning. If not found, -1 is returned. "Start" is an optional argument specifying the position within string to begin the search. Default is string.length-1.

Example:

```
var str1 = "welcome";
alert("str1.lastindexof("e")); // return 3
```

slice(start, [end])- Returns a substring of the string based on the "start" and "end" index arguments, NOT including the "end" index itself. "End" is optional, and if none is specified, the slice includes all characters from "start" to end of string.

Example:

```
var text ="excellent";
text.slice(0,4); // return exce
text.slice(2,4); // return ce
```

split(delimiter, [limit]) - Splits a string into many according to the specified delimiter, and returns an array containing each element. The optional "limit" is an integer that lets you specify the maximum number of elements to return.

Example:

```
var msg =" welcome to javascript world";
var word =msg.split(" "); // return word[0]="welcome", word[1]="to" etc
```

substr(start, [length]) - Returns the characters in a string beginning at "start" and through the specified number of characters, "length". "Length" is optional, and if omitted, up to the end of the string is assumed.

Example:

```
var str="welcome";
str.substr(3,2); //return co
```

substring(from, [to])- Returns the characters in a string between "from" and "to" indexes, NOT including "to" itself. "To" is optional, and if omitted, up to the end of the string is assumed.

Example.

```
var text ="excellent";
text.substring(0,4); // return exce
text.substring(2,4); // return ce
```

toLowerCase()-Returns the string with all of its characters converted to lowercase.

toUpperCase()-Returns the string with all of its characters converted to uppercase.

8.6 FORM VALIDATION

Form validation is used to check the contents of form before sending them to server side programs.

JavaScript is one of the scripting language that was developed specially for this purpose. To validate form entries using JavaScript mainly two primary approaches are used.

- The first involves checking each field as it is filled in.
- The second approach is to check all the fields of a form on submission.

Form data that typically are checked by a JavaScript could be:

- **Checking for non empty :** has the user left required fields empty?
- **Email validation:** has the user entered a valid e-mail address?
- **Checking for valid date**: has the user entered a valid date?
- **Checking for all numbers** : has the user entered text in a numeric field?

For form validation, we have to access <form> tag of HTML page. Let's take a look at how to access the <form> tag using JavaScript.

Form Basics

JavaScript can access forms within an HTML document through the **Form** object, which is a child of the **Document** object. Main properties, methods and events associated with form objects are:

Properties:

- action – Holds the value of the **action** attribute in a form indicating the page reference(URL) where the form data is to be submitted.
- elements - An array of fields and elements in the form.
- length - The number of fields in the elements array, i.e. the length of the elements array.
- method - Holds the value of the **method** attribute , should be either GET or POST.
- name - The form name as defined by its **name** attribute..
- target - The name of the frame or window the form submission response is sent to by the server. Corresponds to the **target** attribute.

Methods:

- Reset() – Reset all the entries of form.
- Submit() – Submit the form to specified page.

Events:

- onreset() – This event occur when reset button is clicked.
- onsubmit()-This event occur when submit button is clicked.

Example:

<form name="form1" action="submit.html" method="get" onreset="return true" onsubmit="return validate(this);">

The this object refers to the current object - whatever object (or element) the this keyword appears in. In the case above, the this object refers to the form object. So the entire form object is passed to the validate() function.

Accessing Form Data

All forms on a web page are stored in the document.forms[] array. The first form on a page is document.forms[0], the second form is document.forms[1], and so on. Another way is use of form names, given to different forms. For example, a form named LoginForm can be referenced as document.LoginForm. The major advantage of naming forms is that the forms can be repositioned on the page without affecting the JavaScript. Elements within a form are properties of that form and are referenced as follows:

Syntax:

document.FormName.ElementName

Form fields

HTML supports a variety of form elements, including single line and multiline text boxes, password field, radio button, buttons. checkboxes and so on. We are specifying some of important element and their associated properties and methods

·button - A pushbutton control. Methods are click(), blur(), and focus(). Attributes:

name - The name of the button

type - The object's type. In this case, "button".

value - The string displayed on the button.

·checkbox - A check box control. Methods are click(), blur(), and focus(). Attributes:

checked - Indicates whether the checkbox is checked. This is a read or write value.

defaultChecked - Indicates whether the checkbox is checked by default. This is a read only value.

name - The name of the checkbox.

type - Type is "checkbox".

value - A read or write string that specifies the value returned when the checkbox is selected.

·FileUpload - This is created with the INPUT type="file". This is the same as the text element with the addition of a directory browser. Methods are blur(), and focus(). Attributes:

name - The name of the FileUpload object.

type - Type is "file".

value - The string entered which is returned when the form is submitted.

hidden - An object that represents a hidden form field and is used for client/server communications. No methods exist for this object. Attributes:

name - The name of the Hidden object.

type - Type is "hidden".

value - A read or write string that is sent to the server when the form is submitted.

· password - A text field used to send sensitive data to the server. Methods are blur(), focus(), and select(). Attributes:

defaultValue - The default value.

name - The name of the password object."

type - Type is "password".

value - A read or write string that is sent to the server when the form is submitted.

· radio - A radio button control. Methods are click(), blur(), and focus(). Attributes:

checked - Indicates whether the radio button is checked. This is a read or write value.

defaultChecked - Indicates whether the radio button is checked by default.

This is a read only value.

length - The number of radio buttons in a group.

name - The name of the radio button.

type - Type is "radio".

value - A read or write string that specifies the value returned when the radio button is selected.

- reset - A button object used to reset a form back to default values. Methods are click(), blur(), and focus(). Attributes:

  name - The name of the reset object.

  type - Type is "reset".

  value - The text that appears on the button. By default it is "reset".

- select - A selection list. This is basically a drop down list. Methods are blur(), and focus(). Attributes:

  length - The number of elements contained in the options array.

  name - The name of the selection list.

ooptions - An array each of which identifies an options that may be selected in the list.

  selectedIndex - Specifies the current selected option within the select list

  type - Type is "select".

- submit - A submit button object. Methods are click(), blur(), and focus(). Attributes:

  name - The name of the submit button.

  type - Type is "submit".

  value - The text that will appear on the button.

- text - A text field object. Methods are blur(), focus(), and select(). Attributes:

  defaultValue - The text default value of the text field.

  name - The name of the text field.

  type - Type is "text".

  value - The text that is entered and appears in the text field. It is sent to the server when the form is submitted.

- textarea - A text area field object. Methods are blur(), focus(), and select(). Attributes:

  defaultValue - The text default value of the text area field.

  name - The name of the text area.

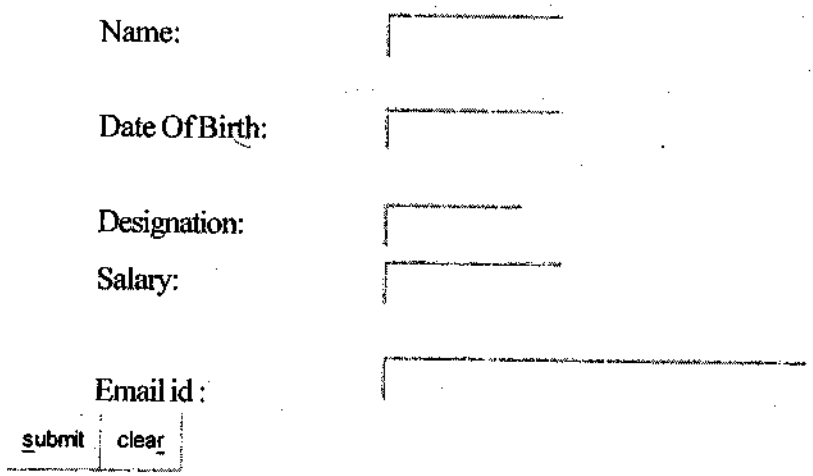
  type - Type is textarea.

  value- The text that is entered and appears in the text area field. It is sent to the server when the form is submitted.

Example:

Design a html page with following inputs :- Name, dob, designation, salary, emailid. perform following

validation:- isEmpty(Name,dob,designation,salary), isNumeric(salary), isValid(emailid).




```
<html>
<head>
<title> FORMS VALIDATION </title>
<script type="text/javascript">
<!—
      function check()
{
      if (form1.Name.value.length == 0) {
      alert("enter the " + form1.Name.name);
       form1.Name.focus();
       return false;
        }
     else if (form1.dob.value.length == 0) {
      alert("enter the " + form1.dob.name);
      form1.dob.focus();
      return false;
      }
   else if (form1.designation.value.length == 0) {
      alert("enter the " + form1.designation.name);
       form1.designation.focus();
        return false;
     }
   else if (form1.salary.value.length == 0) {
      alert("enter the " + form1.salary.name);
       form1.salary.focus();
```

```
        return false;
      }
    else if (isNaN(form1.salary.value)) {
       alert("salary must be numeric");
        form1.salary.focus();
        return false;
      }
    else if (form1.email.value.length == 0) {
      alert("enter the " + form1.email.name);
       form1.email.focus();
        return false;
      }
    else if ((form1.email.value.indexOf("@") == -1) && (form1.email.value.indexOf(".") == -1)) {
        alert(" not a valid email id ");
        form1.email.focus();
        return false;
      }
    else if ((form1.email.value.indexOf("@") == (form1.email.value.indexOf(".") + 1)) ||
(form1.email.value.indexOf(".") == (form1.email.value.indexOf("@") + 1))) {
        alert(" not a valid email id ");
        form1.email.focus();
        return false;
      }
     return true;

   }
  //-->
  </script>
 </head>
 <body background="file://F:\HTML\15037.JPG">
  <form name="form1" method="post" onclick="return check()">
      Name:    <input type="text" name="Name" value=""
   size=15 maxlength=10> <br><br>   
   Date Of Birth:    <input type="text" name="dob" value="" size=15
   maxlength=15> <br><br>   
   Designation:    <input type="text" name="designation" value=""
   size=20 maxlength=20> <br><br>
```

```
   Salary:   <input type="text" name="salary" value=""
size=15 maxlength=15> <br><br>   
Email id :    <input type="text" name="email" value="" size=40
maxlength=30> <br><br>   
<input type="submit" name="submit" value="submit" >
<input type="reset" name="clear" value="clear">
</form>

</body>
</html>
```

8.7 SUMMARY

- JavaScript is basically object based programming language.
- Basic elements of OOP are objects, methods and properties.
- JavaScript is used to manipulate or get information about objects in the HTML DOM.
- JavaScript has to main objects : Language objects and Navigator objects.
- JavaScript **event handler** mapped an object's events to respective code.
- The String object is used to manipulate a stored piece of text.
- All forms on a web page are stored in the document.forms[] array.
- HTML supports a variety of form elements, including single line and multiline text boxes, password field, radio button, buttons, checkboxes and so on.
- Form validation is used to check the contents of form before sending them to server side programs.

8.8 GLOSSARY

browser: A program that allows you to navigate the World Wide Web. Browsers can be either text-based or graphical. Some examples of browsers are Netscape Navigator, HotJava, and Microsoft Internet Explorer.

event handler: A JavaScript structure that responds to (handles) a particular event or response

event watching: When JavaScript keeps an "eye out" for an event to happen. Defining an event handler for an event tells JavaScript to event watch.

FTP: File Transfer Protocol. A protocol that defines how files are transferred from one computer to another.

scripting language: The set of rules and keywords that comprise a functional script. Same as a programming language, except that scripting languages are traditionally less strict and simpler to learn.

surf: The act of viewing Web pages. Often implies moving from one to another to another via links. Surfing is supposed to make you cool.

8.9 FURTHER READINGS

- Dynamic HTML: The Definitive Reference

- JavaScript Programmer's Reference, Wrox, Author: Cliff Wootton
- Beginning JavaScript, Wrox, Author: Paul Wilton
- JavaScript: The Definitive Guide, O'Reilly, Author: ,David Flanagan

8.10 ANSWERS TO SELF LEARNING EXERCISES

Fill in the Blanks

1. Functions
2. Dense
3. Method , action
4. event handler
5. document
6. eval()

True and False

1. True
2. False
3. True
4. False
5. False

8.11 UNIT END QUESTIONS

1. What do you mean by array? How many ways an array can be created?
2. What are events? What events can JavaScript handle?
3. List out all the events associated with text and checkbox.
4. Write the user defined function declaration syntax in JavaScript. Explain different in-built functions.
5. What is the need of form validation? Discuss the process in JavaScript.

***

UNIT IX

DHTML

STRUCTURE OF THE UNIT

9.0 OBJECTIVE

At the end of unit, you will be able to understand

- What is DHTML?
- Uses of DHTML.
- What is typography? How we can achieve it in DHTML?
- Importance of consistency in web site design.
- Different types of style sheets.
- Concept of class in HTML.
- Text rollover effect using CSS

9.1 INTRODUCTION

DHTML is a new and emerging technology that has evolved to meet the increasing demand for eye-catching and mind-catching web sites.

Dynamic HTML gives authors creative control so they can manipulate any page element and change styles, positioning, and content at any time. It provides a richer, more dynamic experience on web pages, making them more like dynamic applications and less like static content. Dynamic HTML presents richly formatted pages and lets you interact with the content on those pages without having to download additional content from the server. This means that a page can respond immediately to user actions, such as a mouse click, without having to retrieve an entire new page from the server. For DHTML, Netscape bases much of its

approach on the new LAYER tag and Microsoft bases on CSS (Cascading Style Sheets) and Microsoft's DOM.

DHTM is basically combination of following four components:

HTML language : To manipulating XHTML tags that dynamic changes take place in the browser

Cascading Style Sheets(CSS) : Style sheets are powerful mechanism for adding style(e.g. fonts, colors, spacing) to Web document. It is used for dynamic changes to style properties account for a large portion of the dynamism on a Web page, whether in styling changes or in content changes.

DOM: To supplies the programming interface to elements enclosing and composing a Web page, and it is by manipulating the built-in properties and methods of these elements that changes are made and dynamism results.

JavaScript: For o writing and processing **scripts** to manipulate page elements through the DOM interface.

Object Model and Collections

The object model gives access to all elements of a Web page, whose properties and attributes can thus be retrieved or modified by scripting. The value of the id attribute of an element becomes the name of the object representing that element. The various HTML attributes of the element become properties of this object (which can be modified). For example, the value of the innerText property of a p element is the text within that element. So, if we have a P element with id pText, we can dynamically change the rendering of this element with, e.g.,

P1.innerText = "Good bye!";

This is *dynamic content.*

In the following example, the function (not the window method) alert is used to pop up an alert box.

```
<html>
<head>
<title>object model</title>
<script type = "text/javascript">
function start()
{
alert( p1.innerText );
p1.innerText = "Good bye!";
}
</script>
</head>
<body onload = "start()">
<p id = "p1">hello!</p>
</body>
</html>
```

When the page is loaded, the following appears both in the window and in an alert box:

Hello!

After the alert box is dismissed, the following appears in the window:

Good Bye!

Collections

A *collection* is an array of related objects on a page. The collection of an element (syntactically a property) is a collection of all the elements in it in order of appearance. This gives us reference even to elements that lack ID attributes. Like all collections, it has a length property. For example,

document.all[i]

references the *i*th element in the document. The following are needed for the next example. The innerHTML property of a p element is like the innerText property but may contain HTML formatting.

The tagName property of an element is the name of the HTML element.

```
<html>
<!— Using the all collection —>
<head>
<title>Object Model</title>
<script type = "text/javascript">
var elements = "";
function start()
{
for ( var loop = 0;
loop < document.all.length; ++loop )
elements += "<BR>" +
document.all[ loop ].tagName;
p1.innerHTML += elements;
}
</script>
</head>
<body onload = "start()">
<p id = "p1">Elements on this Web page:</p>
</body>
</html>
```

Elements on this Web page:

HTML

HEAD

TITLE

!

SCRIPT

BODY

P

The children collection for an object is like the all collection but contains only the next level down in the hierarchy. For example, an HTML element has a head and a body child. In the following example, function

child(object) does a preorder traversal of the part of the object hierarchy rooted at object. For every object with children, it appends on to global variable

elements

- ,
- the name of the HTML element represented by the object,
- ,
- similar information for the children (iteratively) and more
- distant descendants (recursively) of the object, and
-

The body tag is

<body onload = "child(document.all[1]);
myDisplay.outerHTML += elements;">

When the page is loaded, this calls child, passing it the second object in the hierarchy. (The first element is the comment at the top of the file.) When control returns from the call, the string in global variable elements (containing the hierarchical description of the objects) is appended to the value of the outerHTML property of P element myDisplay. Property outerHTML is like innerHTML but includes the enclosing tags.

```
<html>
<!— The children collection —>
<head>
  <title>Object Model</title>
      <script type = "text/javascript">
          var elements = "<ul>";
          function child( object )
           {
var loop = 0;
elements += "<LI>" + object.tagName + "<UL>";
for( loop = 0; loop < object.children.length; loop++ )
if ( object.children[loop].children.length )
child( object.children[ loop ] );
else
elements += "<LI>" + object.children[ loop ].tagName + "</LI>";
elements += " </UL> ";
}
</script>
  </head>
 <body onload = "child( document.all[ 1 ] ); myDisplay.outerHTML += elements;">
```

```
<p>Welcome to our <strong>Web</strong> page!</p>
<p id = "myDisplay">Elements on this Web page:
</p>
  </body>
</html>
```

Output:

Welcome to our **Web** page!
Elements on this Web page:
HTML
    HEAD
        TITLE
        SCRIPT
    BODY
        P
            STRONG
        P

9.2 USES OF DHTML

DTML are basically used to provide visual clues to assist the user in navigating the page and to provide interactive applications. Some of the applications of DHTML are:

- **Changing the tags and properties**

This is one of the most common uses of DHTML. It allows you to change the qualities of an HTML tag depending on an event outside of the browser (such as a mouse click, time, or date, and so on). You can use this to preload information onto a page, and not display it unless the reader clicks on a specific link.

- **Real-time positioning**

When most people think of DHTML this is what they expect. Objects, images, and text moving around the Web page. This can allow you to play interactive games with your readers or animate portions of your screen.

- **Dynamic Fonts**

This is a Netscape only feature. Netscape developed this to get around the problem designers had with not knowing what fonts would be on a reader's system. With dynamic fonts, the fonts are encoded and downloaded with the page, so that the page always looks how the designer intended it to.

- **Data binding**

This is an IE only feature. Microsoft developed this to allow easier access to databases from Web sites. It is very similar to using a CGI to access a database, but uses an ActiveX control to function. This feature is very advanced and difficult to use for the beginning DHTML writer.

Examples:

DHTML allows the page author to:

- Animate text and images in their document, independently moving each element from any starting point to any ending point, following a predetermined path or one chosen by the user.
- Include rollover buttons or drop-down menus.
- Hide content until a given time elapses or the user interacts with the page.
- Embed a ticker that automatically refreshes its content with the latest news, stock quotes, or other data.
- Use a form to capture user input, and then process and respond to that data without having to send data back to the server.

```
<html>
 <head>
  <title>DHTML example</title>
  <script type="text/javascript">
   function init() {
   myObj = document.getElementById("navigation");

    // .... more code
    }
   window.onload=init;
  </script>
 </head>
 <body>
  <div id="navigation"></div>
   <pre>
   Often the code is stored in an external file; this is done by linking the file that contains the JavaScript.
   This is helpful when several pages use the same script:
   </pre>
  <script type="text/javascript" src="myjavascript.js"></script>
 </body>
</html>
```

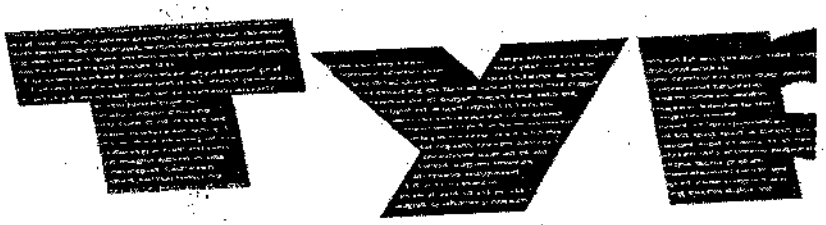
9.3 TYPOGRAPHY

Typography is an art and technique arranging of text on a page. Typography is a combination of font, size, spacing and color to portray a message. In other words is the visual representation of words. Type conveys meaning, both in the obvious sense that words and sentences communicate, and in the subtler sense that the particular visual representation we use – the style, size, and so on – affects the message

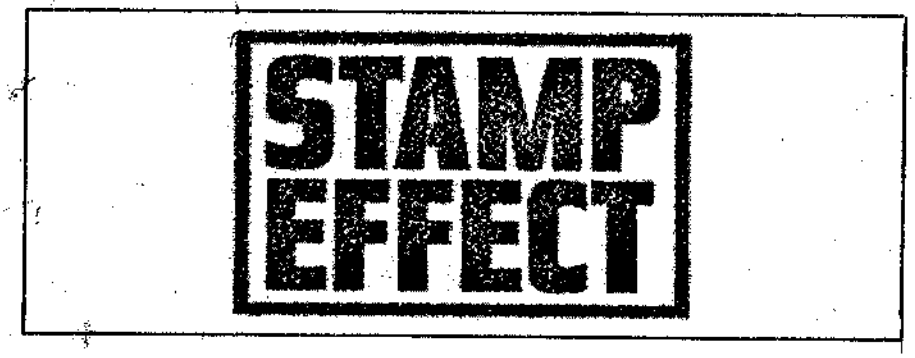
Typography is frequently used in Newspapers, books, and web pages. In every design where type is used whether in publishing, sign board, package design or web designers have best used the typography techniques to suite the medium.

Examples:

1. Type within a Type



2. Stamp Effect



Typography in DHTML

Typography can be achieved with the help of FONT tag, which allows page authors to specify typeface and size.

<font face="Verdana" size="3">

But as compare to font tag, CSS provides significantly more control over it. In HTML, we can specify its family and a rough measure of size. With CSS, however, not only can specify exact size increments, but we can control such crucial properties as line-height, word-spacing, and letter.

Another advantage of CSS is the ability to specify different stylesheets for different output devices. The most obvious example is to include a separate stylesheet for printing a page (specifying different typefaces, perhaps, or using points rather than pixels for sizing), like so:

<style type="text/css" media="print">

.someClassName { font-family:Bodoni, Georgia, serif; font-size:10pt }

</style>

<style type="text/css" media="screen">

.someClassName { font-family:Georgia, serif; font-size:12px }

</style>

linked, like so:

<link rel="stylesheet" type="text/css" media="screen" href="screen.css" />

<link rel="stylesheet" type="text/css" media="print" href="print.css" />

Other ways of producing text effects are:

- Spacing words and letters
- Spacing between lines
- Aligning and Indenting text

- Margins and Padding

Using different CSS style attributes we can produce different effects of typography.

9.4 CONSISTENCY

Consistency is related to the look of web site as a single document. For the visitors point of view, he should feel the same environment while navigating the different pages of site. (It must be clear to a visitor he is still at the same). When he clicks a link, he must recognize the connecting page as yours. It must resemble the previous one. Magazines, newspapers, and television pay very much attention to a recognizable style. While browsing the magazine longer we look, the more you often see a kind of uniformity. In page layout, fonts, writing style, use of color, titles, headers, lines, images etc. Newspapers are often distinguishable just by font and column width. This all serves just one purpose: reconcilability. Same thing is applicable for web site. Your web site should have consistent look. Here are the some important suggestions for consistency of web pages:

- Choose a fixed layout.
- Use the same background every time.
- Put menus at the same spot on every page. Always use the same symbols for navigation.
- Put a logo on your page.
- Use the same style of writing everywhere.

9.5 DIFFERENT TYPES OF STYLES

There are three different types of style that can be used with respective style sheets:

- Linked or External style: It is placed in a separate text file and accessed each time a web page is opened.
- Embedded style: It is placed in the head section of the HTML page and can over ride linked settings.
- Inline style: Inline styles are CSS style assignments that have been applied to an element using the style attribute

Example:

We can use the **style** object to enlarge the font and change its color, as shown in the following simple example.

```
<html>
<head>
<title>Dynamic Styles</title>
<script language="JavaScript">
function doChanges(e) {
  e.style.color = "green";
  e.style.fontSize = "20px";
}
</script>
</head>
```

```
<body>
<h3 onmouseover="doChanges(this)" style="color:black;font-size:18px">Welcome to Dynamic HTML!</
h3>
<p>You can do the most amazing things with the least bit of effort.</p>
</body>
</html>
```

The preceding example demonstrates the following:

- HTML element - In this case, the H3 tag is the target element.
- Inline style - The element is initially displayed in black with a font size of 18px.
- Event attribute - The onmouseover attribute defines the action that occurs when the mouse pointer is moved over the element.
- Event handler - The function that responds to the event is declared in the head of the document. A DHTML object that represents the target element is passed as a function parameter using the this pointer.
- The style object - The **style** object contains the information that was set in the inline style when the element was defined. To change the color and font size, the function modifies the color and fontSize properties of the element. The browser immediately updates the onscreen text to display these new attribute values.

External Style Sheets

An external Style Sheet is a template/document/file containing style information which can be linked with any number of HTML documents. This is a very convenient way of formatting the entire site as well as restyling it by editing just one file.

The file is linked with HTML documents via the LINK element inside the HEAD element. Files containing style information must have extension .css , e.g. style.css .

```
<head>
<link rel="stylesheet" ref="mystyle.css" type="text/css">
</head>
```

Example of lines in text file:

```
body {text-align :center}
p {font-family: Arial, sans-serif ;font-size : 10pt }
h2 {font-family: Arial Black, serif ;font-size : 16pt }
```

Embedded Style Sheets

Embedded style is the style attached to one specific document. The style information is specified as a content of the STYLE element inside the HEAD element and will apply to the entire document.

```
<head>
<style type="text/css">
body {text-align :center}
p{font-family: Arial, sans-serif ;font-size : 10pt }
h2 {font-family: Arial Black, serif ;font-size : 16pt }
</style>
</head>
```

Inline Style Sheets

Inline style is the style attached to one specific element. The style is specified directly in the start tag as a value of the STYLE attribute and will apply exclusively to this specific element occurrence.

Style settings can be set using the inline method. It should be used sparingly because of the extra amount of code it adds to the web page.

 For more: See Page 1

9.6 CLASS IN HTML

In DHTML we can format the predefine tags of HTML But problem is if we define any paragraph tag with specific style, that style will be applicable for all paragraph tags. It may be possible, a particular paragraph may need to look different from other paragraphs, this because the content of the paragraph is in some way different from other paragraphs on the page. This can be done easily with the help of class attribute of style. A class can be defined to change the style in a specify way for any element it is applied to, and classes can be used to identify logical set of changes that might be different fro different HTML element.

The class attribute specifies a classname for an element.The class attribute is mostly used to point to a class in a style sheet. The class attribute cannot be used in the following HTML elements: base, head, html, meta, param, script, style, and title.

< *element* class="*value*">

Example: Write an script that display heading with blue color and paragraph with green.

```
<html>
<head>
<style type="text/css">
h1.intro {color:blue;}
p.important {color:green;}
</style>
</head>

<body>
<h1 class="intro">Header 1</h1>
<p>A paragraph.</p>
<p class="important">Note that this is an important paragraph.</p>
</body>
</html>
```

9.7 TEXT ROLLOVER

9.7.1 Using JavaScript

Another common JavaScript rollover effect is changing the size or style of text. Text rollover effects bring more attention to text that is different than its surrounding text. For example, as you move your mouse cursor over links, or external Web addresses, most websites will highlight the link or change the color to a different shade of blue. This text rollover effect signals to the user that if they clicked at that moment, they will navigate to the highlighted link.

Example 1 : Changing Text contents

```
<html>
<head>
<script language="javascript">
function toggle(id,text)
{
                    d=document.getElementById(id);
                    d.innerHTML=text;
}
</script>
</head>
<body>
<a href="" onmouseover="toggle('thetext','Hello!')"
onmouseout="toggle('thetext','Goodbye!')">Hover Here</a><br><br>
<div id="thetext">
</div>
</body>
</html>
```

Example 2: Changing the Link color

The following code segment shows how to create a simple link that changes its color when the user passes the mouse over it:

```
<A HREF="home.html">
<FONT COLOR="#0000ff" onMouseOver="this.style.color = '#cc0000'"
  onMouseOut="this.style.color = '#0000ff'">Home</FONT>
</A>
```

9.7.2 Using CSS

Text rollover can be achieved very effectively using just CSS by defining the following properties:
a:link = The default appearance of your text links.
a:visited = When the link has been clicked.
a:active = When the link is being clicked.
a:hover = When the mouse is over the link.

This first step is to decide whether you are using a Inline Style, and Embedded Style Sheet, or an External Style Sheet. Then set the different attributes of link tag.

Example:

```
<HEAD>
<STYLE TYPE="text/css">

a:link { color: #000099; text-decoration: none; font-family: Verdana, Arial, Helvetica, sans-serif; font-size: 8px }
```

a:visited, a:active { color: #CCC; text-decoration: none; font-family: Arial, Helvetica, sans-serif; font-size: 8px }

a:hover { color: #000; text-decoration: underline; font-family: Arial, Helvetica, sans-serif; font-size: 10px; **background-color: #CCC** }

-->

</STYLE>

</HEAD>

self learning exercises

Fill in the blanks.

1. ..... used for dynamic changes to style properties account for a large portion of the dynamism on a Web page.
2. A ..... is an array of related objects on a page.
3. ..... is an art and technique arranging of text on a page.
4. ..... property provides the default appearance of your text links.
5. ..... is placed in the head section of the HTML page and can over ride linked settings.

State True or False

1. The object model gives access to all elements of a Web page .
2. a:hover is used when the mouse is over the link.
3. The class attribute specifies a classname for an element.
4. Inline style is placed in a separate text file and accessed each time a web page is opened.
5. Text rollover effects bring more attention to text that is different than its surrounding text

9.8 WORKING WITH CLASS

Example1 : Display different paragraphs with different style.

```
<html>
<head>
<style type="text/css">
p.first{ color: blue; }
p.second{ color: red; }
</style>

</head>
<body>
<p>This is a normal paragraph.</p>
<p class="first">This is a paragraph that uses the p.first CSS code!</p>
<p class="second">This is a paragraph that uses the p.second CSS code!</p>
</body>
</html>
```

Output:

This is a normal paragraph.

This is a paragraph that uses the p.first CSS code!

This is a paragraph that uses the p.second CSS code!

Example2 : Create a page having questions and answers. Questions in bold and color is red, while the answer in plain text and color is black.

In this there are two classes of paragraph-question and answer. So in style sheet there need to be two statements, one which affects only paragraphs of *class* question, and one which only affects paragraphs of *class* answer.

```
<html>
    <head>
        <title> Working with Class</title>
        <style type="text/css">
          P {font-size : 12pt; font-weight:bold; text-align:justify; margin-left:10%;margin-
      right:10%}
          .question{color:red; fontstyle: italic}
          .answer{ color:black}
</style>
  </head>
<body>
        <P class="question"> What is DHTML?</p>
 <P class=:answer"> DHTML is a new and emerging technology that has evolved to
 meet the increasing demand for eye-catching and mind-catching web sites.
 </P>
        <P class="question"> What is style sheet?</P>
     <P class="answer"> Style sheets are powerful mechanism for adding style(e.g. fonts,
        colors, spacing) to Web document.</P>
</body>
</html>
```

9.9 SUMMARY

- Dynamic HTML gives authors creative control so they can manipulate any page element and change styles, positioning, and content at any time.
- DHTML is a combination of HTML, DOM, CSS and JavaScript.
- Style sheets are powerful mechanism for adding style to Web document
- The object model gives access to all elements of a Web page, whose properties and attributes can thus be retrieved or modified by scripting.
- A *collection* is an array of related objects on a page.

- The children collection for an object is like the all collection but contains only the next level down in the hierarchy.
- Typography is an art and technique arranging of text on a page.
- A class can be defined to change the style in a specify way for any element it is applied to, and classes can be used to identify logical set of changes that might be different for different HTML element.
- Text rollover effects bring more attention to text that is different than its surrounding text.
- Three different types of style sheets are: linked, embedded and inline style sheets.

9.10 GLOSSARY

Browser :A browser is a program that allows a person to access and view pages the Internet. It deciphers the HTML code and presents it neatly formatted on your screen.

CGI :CGI or Common Gateway Interface is a way of passing requested information from a program that has been executed on a Web server to a client.

Cookie:Cookies are data that is sent to your computer when you have visited a Website. If you revisit the site the cookie will load particular pages depending on what information is contained in it.

DHTML:DHTML (Dynamic HTML) is a mixture of HTML, a scripting language (such as JavaScript) which is client side and Cascading Style Sheets to create interactive Web sites.

9.11 FURTHER READINGS

- Dynamic HTML: The Definitive Reference
- JavaScript Programmer's Reference, Wrox, Author:Cliff Wootton
- Beginning JavaScript, Wrox, Author:Paul Wilton
- JavaScript: The Definitive Guide , O'Reilly ,Author: ,David Flanagan

9.12 ANSWERS TO SELF LEARNING EXERCISES

Fill in the blanks

1. CSS
2. Collection
3. Typography
4. a:link
5. Embedded style

True or false

1. true
2. false
3. true
4. false
5. true

9.13 UNIT END QUESTIONS

1. What do you understand by DTML? What are the essential components of it?

2. List out main uses of DHTML.
3. Define collection and children collection in terms of DHTML.
4. Discuss the importance of typography and consistency for web pages.
5. What is class? How we can use it in DHTML?

***

10

UNIT -X

CASCADING STYLE SHEETS

STRUCTURE OF UNIT

10.0 OBJECTIVE

In this unit you will learn the concepts of cascading style sheets (CSS) and its uses .This unit will also help you to develop a professional web sites using CSS. The CSS allow us to control the layout and look of your pages easily. This unit covers fonts styles ,margins ,background images, borders, list styles, links and many other things, Which will help you to create dynamic effective in web site. This unit will also helps you to get the knowledge of classes and use of span. At the end you will be able to design a dynamic web pages using cascading style sheets.

10.1 INTRODUCTION TO CSS

CSS is the abbreviation for Cascading style sheet. CSS is an extension to basic HTML that allows you to style your web pages. A style sheet simply holds a collection of rules that we define to enable us to manipu-

late our web pages. CSS allow us to control the layout and look of our page easily. CSS is a powerful mechanism for adding style (e.g. fonts, color's, margins, borders, lines, height, width, background images) to web documents. Cascading style sheets are very useful for adding styles to web documents. The advantages of a style sheets includes the ability to make global changes to all documents from a single location style sheets are said to cascade when they combine to specify the appearance of page.

The style assignment process is accomplished with the <STYLE>.....</STYLE> tags. Between the <STYLE> .....</STYLE> HTML tags, specific style attributes or properties. The <STYLE> .....</STYLE> tags are written within the <HEAD>.....</ HEAD> tags

10.2 CSS SYNTAX

<HTML>

<HEAD>

<TITLE> This is The Title..... </TITLE>

<STYLE Type = "text/css">

tag {properties : value ; properties : value ; ..... }

.....

.....

</STYLE>

</HEAD>

<BODY>

.....

.....

</BODY>

</HTML>

Benefits of CSS:

- Control layout of many document from one single style sheet.
- More precise control of layout.
- Apply different layout to different media type.
- Numerous advanced and sophisticated techniques.

10.3 CSS CLASS

A class is a useful features. It enables to specify the some style for a particular element. A class can be defined to change the style in a specific way for any element it is applied to, and classes can be used to identify logical sets of style changes that might be different for different HTML elements. In a style sheet, class is defined by a dot (.) followed by the name of the class.

Syntax -

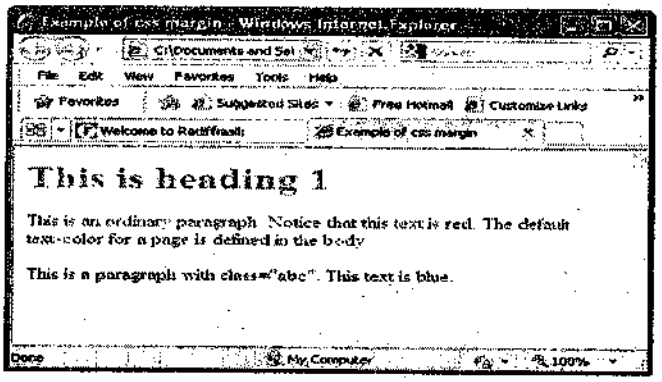
.classname{property : value ; property : value ;}

When you use the class then you write class=classname into its opening tag in which you define the class.

Example:

<html>

```
<head>
<title>Example of css margin</title>
<style type="text/css">
body{color:red;}
h1{color:#00ff00;}
.abc{color:#0000ff;}
</style>
</head>
<body>
<h1>This is heading 1</h1>
<p>This is an ordinary paragraph. Notice that this text is red. The default text-color for a page is defined in the body.</p>
<p class="abc">This is a paragraph with class="abc". This text is blue.</p>
</body>
</html>
```



10.4 CSS-ID

The ID attribute lets us assigning a unique identifier to an element. When an ID is used, it preserves all the adjustments made to the elements to which it is applied. If you use identifier with any element then you have to define id in following manner :

Syntax-

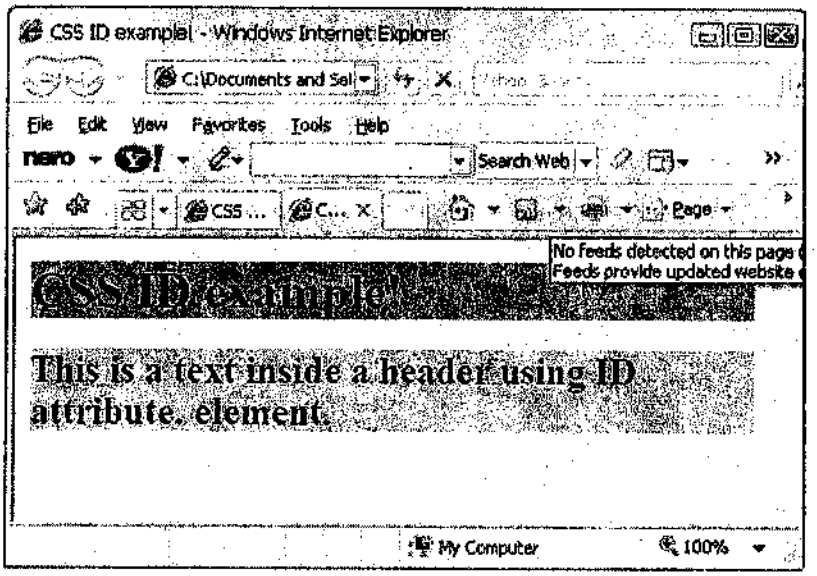
id name{property : value ;}

When you use this id name with any element you write id=idname in that element's tag. Using this all the properties which you set in the id definition, is also apply on that element also.

Example:

```
<html>
<head>
<title>CSS ID example!</title>
<style type="text/css">
h1{background-color:green; text-align:center;}
#variation{background-color:#e0ff00;}
</style>
```

```
</head>
<body>
<h1>CSS ID example!</h1>
<h2 id="variation">
This is a text inside a header using ID attribute. element.</h2>
</body>
</html>
```



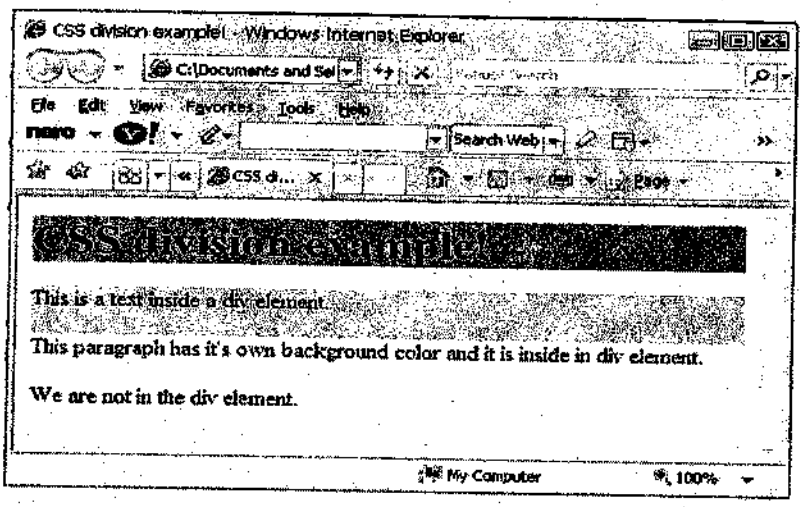
10.5 CSS DIVISIONS

Divisions are a block level HTML elements used to define sections of an HTML file. A division can contain all the parts that make up our website. The <DIV>...</DIV> command uncloses a text area or section which can receive specific alignment parameters, as in case of 'ALIGN', to align the text.

Example:

```
<html>
<head>
<title>CSS division example!</title>
<style type="text/css">
h1{background-color:#6495ed;}
p{background-color:#e0ffff;}
div{background-color:#b0c4de;}
</style></head>
<body>
<h1>CSS division example!</h1>
<div>
This is a text inside a div element.
<p>This paragraph has it's own background color and it is inside in div element.</p></div>
You are not in the div element.
</body>
```

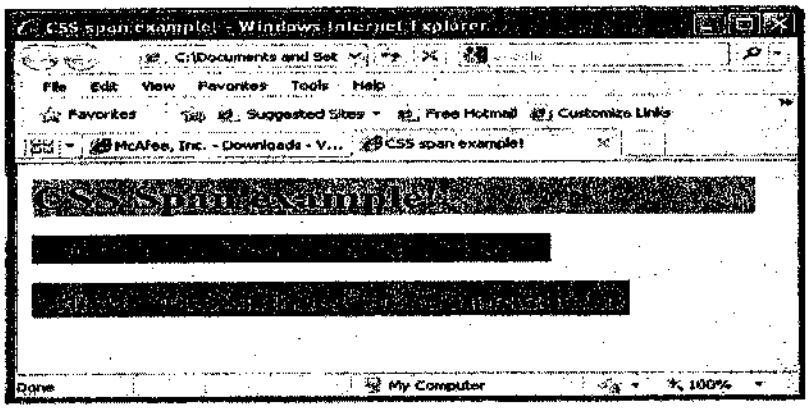
</html>



10.6 CSS SPAN

Span is an HTML elements that play an important role in Style Sheet. In the body of the document, <SPAN>.... </SPAN> is used to set the boundaries of the rule's styling specifications. Spans are very similar to divisions except they are an inline element versus a block level element. No linebreak is created when a span is declared. You can use the span tag to style certain area of text, as shown in the following Example.

```
<html>
<head>
<title>CSS span example!</title>
<style type="text/css">
h1 { background-color : #6495ed; }
.italic { font-style:italic; font-size=24px; background-color:red; }
.underline { text-decoration:underline; font-family=cursive; font-size=18pt; background-color:green; }
</style></head>
<body>
<h1>CSS Span example!</h1>
<span class="italic">
This is a text inside a span
element.</span><br><br>
<span class="underline">
This is a text inside a span
element.</span>
</body>
</html>
```



10.7 CSS MARGIN

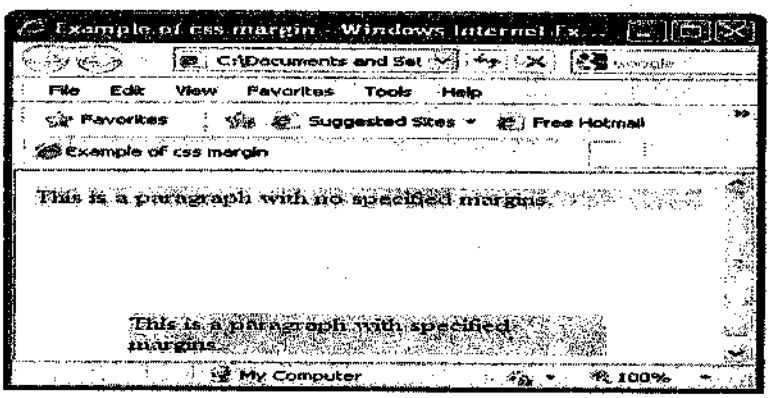
The margin property declares the margin between an HTML element and the elements around it. The margin property can be set for the top, left, right and bottom of an element.

Margin related attributes and values are :

Attributes	Values
Margin-top	Percent, length or auto
Margin-bottom	Percent, length or auto
Margin-left	Percent, length or auto
Margin-right	Percent, length or auto
Margin	Percent, length or auto

Example:

```
<html>
<head>
<title>Example of css margin</title>
<style type="text/css">
p{background-color:yellow;}
.margin{margin-top:100px; margin-bottom:100px; margin-right:50px; margin-left:50px;}
</style>
</head>
<body>
<p>This is a paragraph with no specified margins.</p>
<p class="margin">This is a paragraph with specified margins.</p>
</body>
</html>
```



10.8 CSS PADDING

Padding is the distance between the border of an HTML element and the content within it. With CSS padding you will be able to change the default padding that appears inside various HTML elements (paragraphs, tables etc.)

```
<Style type = "text/css">
P { Font-size : 12pt; padding : 10px}.
</Style>
```

Most of the rules for margins also apply to padding, except there is no "auto" value and negative values cannot be declared for padding.

```
padding-top :        length, percentage ;
padding-left :       length, percentage ;
padding-right :      length, percentage ;
padding-bottom :     length, percentage ;
```

You can also declare all the padding of an element in a single property as follow

```
padding : 10px  10px  10px  10px ;
```

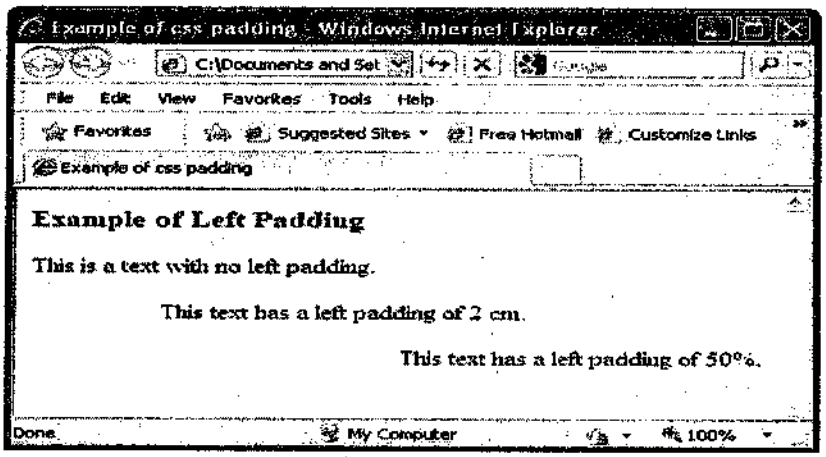
In this case the order is : top, right, bottom, left.

If only one value is declared, It sets the padding on all sides. If you do not declare padding value of an element, the default value of padding is 0.

Example:

```
<html>
<head>
<title>Example of css padding</title>
<style type="text/css">
p.padding{padding-left:2cm;}
p.padding2{padding-left:50%;}
</style>
</head>
<body>
```

```
<h3>Example of Left Padding</h3>
<p>This is a text with no left padding.</p>
<p class="padding">This text has a left padding of 2 cm.</p>
<p class="padding2">This text has a left padding of 50%.</p>
</body>
</html>
```



10.9 CSS TEXT

The formatting and adding style to text is a key issue for any web designer. The CSS gives you to add layout to text. CSS text allows you to control the spacing, decoration, alignment, and indent of the text.

10.9.1 Text Color

The color property is used to set the color of text.

Color : Value ;

possible values are

- color name - (red, black .....)
- hexadecimal color code - (#ff0000, #000000)
- RGB- rgb(255,0,0)

10.9.2 Letter Spacing

You can adjust the space between letters in the following manner.

letter-spacing : value ;

possible values are : Normal, Length

10.9.3 Text Align

The text-align property is used to set the alignment of a text . The text can be Centered, or aligned to the Left or Right or Justified.

text-align : value ;

possible values are : Left, Center, Right, Justify

10.9.4 Vertical Align

You can determines an element's vertical position of text with the following property.

vertical-align : value ;

possible values are : sub, super, basline, top, text-top, middle, bottom, text-bottom, also percentage of the element's height.

10.9.5 Text Decoration

The text-decoration property is used to set decorations of text.

text-decoration : value ;

possible values are : none, underline, overline, line-through, blink

Example : (1) This text is underlined.

(2) This text has a overline it.

(3) ~~This text has a line through it.~~

10.9.6 Text Indent

The text-indent property is used to set indent of the first line of text in an HTML element with the following : text-indent : value ;

possible values are : length, percentage

10.9.7 Text Transform

You can control the size of letters using the text-transform porperty, and can choose to Capitalize, Uppercase or Lowercase values to change case in web document.

text-transform : value ;

possible values are : none, capitalize, uppercase, lowercase.

Example: (1) The First Letter In Each Word Is Capital.

(2) THIS TEXT IS ALL IN UPPERCASE.

(3) this text is in lowercase.

10.9.8 Word spacing

You can adjust the space between words using the following property :

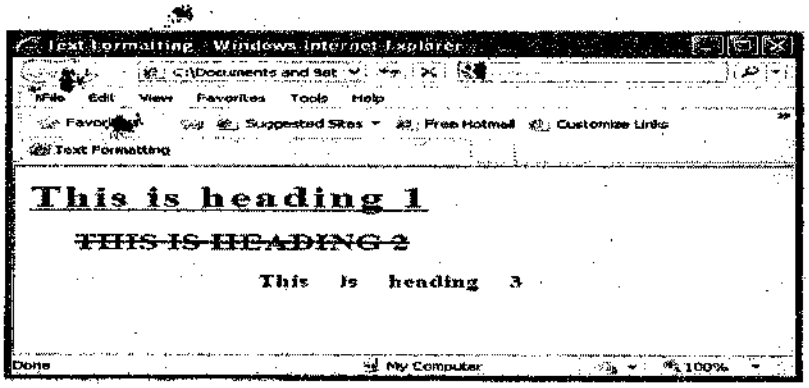
Word-spacing : value ;

possible values are : normal, length

Example:

```
<html>
<head>
<title>Text Formatting</title>
<style type="text/css">
h1 {letter-spacing: 2px; text-decoration: underline}
h2 {text-transform: uppercase; text-indent:30px; text-decoration: line-through}
h3 {word-spacing: 15px; text-align: center; color: red}
</style>
</head>
```

```
<body>
<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
<h3>This is heading 3</h3>
</body>
</html>
```



10.10 FONT

CSS gives you great conrol over the way your text is displayed. You can change the font, font size, font color, font style, font weight, font variant, etc., using the font property.

10.10.1 Font Family

You can set what font will be displayed in an element with the font-family property.

Font-family: value;

Possible values are : Verdana, Serif, Sans-Serif, Cursive, Arial, Times New Roman.

10.10.2 Font Size

You can manipulate the size of your fonts by using vlaues, percentages, or key terms. You can set the size of the text with in an element by using the font-size property.

font-size : value ;

There are a lot of choices for values :

- x x-large
- x-large
- large
- medium
- small
- smaller
- x-small
- x x-small
- length(number of Pixels)
- % (precent)

Specifying the font-size in px(pixels: one dot on a screen) or pt(points: 1/72 of an inch).

10.10.3 Font Style

CSS font-style property is where you define if your font will be italic or not. You can set the style of text in an element with the this property.

font-style : value ;

Possible values are : normal, italic, oblique

10.10.4 Font variant

CSS font varient allows you to convert your font to all small caps. You can set the variant of text with in an element using the font-variant property.

font-variant : value ;

Possible values are : normal, small-caps.

10.10.5 Font Weight

If you want to control the weight of your font (i.e. thickness). The font-weight property is the best way to set thickness of your font. You can use font-weight in multiples of 100(e.g. 200,300,400 .... etc.) or key terms.

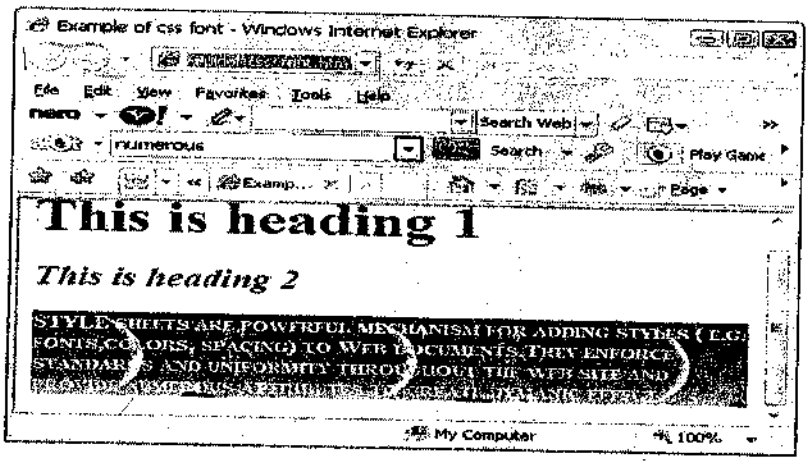
font-weight : value ;

Possible values are :

- lighter
- normal
- Bold
- Bolder
- 100
- 200
- 300
- 400
- 500
- 600
- 700
- 800
- 900

Example :

```
<html>
<head>
<title>Example of css font </title>
<style type="text/css">
h1 {font-size:250%;}
h2 {font-style:italic;color:red}
p {font-variant:small-caps; font-weight:bolder; background-image:url(image1.jpg); color:pink}
</style>
</head>
<body>
<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
<p>STYLE sheets are powerful mechanism for adding styles ( e.g. fonts,colors , spacing) to Web documents. They enforce standards and uniformity throughout the web site and provide numerous attributes to create dynamic effects.</p>
</body>
</html>
```



10.11 CSS ANCHORS AND LINKS

HTML anchor tag is also hyperlink tag. This hyperlink anchor tag is hyperlink states based on html presentation of web page. Further these four link states are controlled by css styles using pseudo classes of anchor "a" selector of html anchor a tag in css. You can use these link states in following manner.

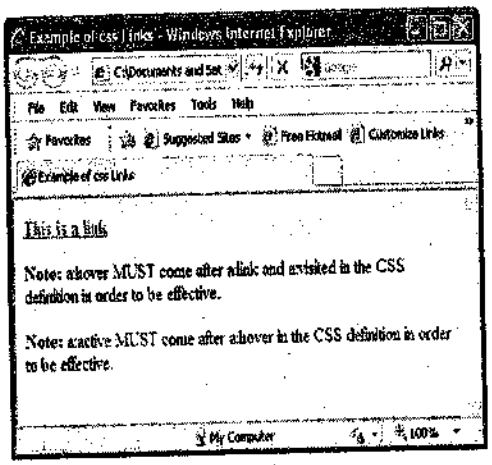
1. a : link{color : value;} → It sets the color of a link when no event is occurring (unvisited link)
2. a : visited{ color : vlaue;} → It sets the color a link changes to, when the user has already visited that URL.
3. a : hover{color : vlaue;} → It sets the color a link changes to as the user places their mouse pointer over the link.
4. a : active {color : vlaue;} → It sets the color a link changes to as it is pressed.

Example:

```
<html>
<head>
<title>Example of css Links</title>
<style type="text/css">
a:link {color:#FF0000;}   /* unvisited link */
a:visited {color:#00FF00;} /* visited link */
a:hover {color:#FF00FF;}  /* mouse over link */
a:active {color:#0000FF;} /* selected link */
</style>
</head>
<body>
<p>
<b><a href="class.htm" target="_blank">This is a link</a></b>
</p>
<p>
```

Note: a:hover MUST come after a:link and a:visited in the CSS definition in order to be effective.

Note: a:active MUST come after a:hover in the CSS definition in order to be effective.
</body>
</html>



10.12 PSEUDO CLASSES

You can set links contained in different parts of our web page to be different colors by using the pseudo class.For example, links are specified in HTML with <a> tag. A link can have different states. it can be visited or nonvisited. You can use pseudo classes for it like :

a : link { color : blue;}
a : visited {color : yellow; }
a : hover {color : green; }

Example:

<html>
<head>
<style>
a:link{color: red;}
a:visited{ color: yellow; }
a:hover{ color: green; }
</style>
</head>
<body>
<h2>CSS Pseudo Classes or Links</h2>
This is a link with Pseudo Classes
</body>

</html>

10.13 BACKGROUND

You can set the background color or image of any CSS elements using the background property. You have control over how the background image is displayed. You may choose to have it repeat horizontally, vertically or in neither direction.

10.13.1 Background Attachment

If you are using an image as a background. You can set background scrolls with the page or is fixed when the user scrolls down the page with the background-attachment property.

background-attachment : values ;

Values are: fixed, scroll

10.13.2 Background Color

You can declare a color for the background using the background-color property.

background-color : value ;

Values are: color name, hexadecimal number, RGB color code

10.13.3 Background Image

By using the background-image property you can set an image as the background image.

background-image : url(path-to-image);

Values : url, none

10.13.4 Background Position

You can position an image used for the background. Bydefault, a background image will be positioned in the top left corner of the screen. The property background-position allows you to change this default and position the background image anywhere you like on the screen.

background-position : values ;

Values : top left, top center, top right, center left, center center, center right, bottom left, bottom center, bottom right X-%, Y-%, X-pos, Y-pos

10.13.5 Background Repeat

You can set an image as a background of an element is to repeat vertically(y-axis), horizontally(x-axis), in both directions or in neithrt direction on the the screen using background-repeat property.

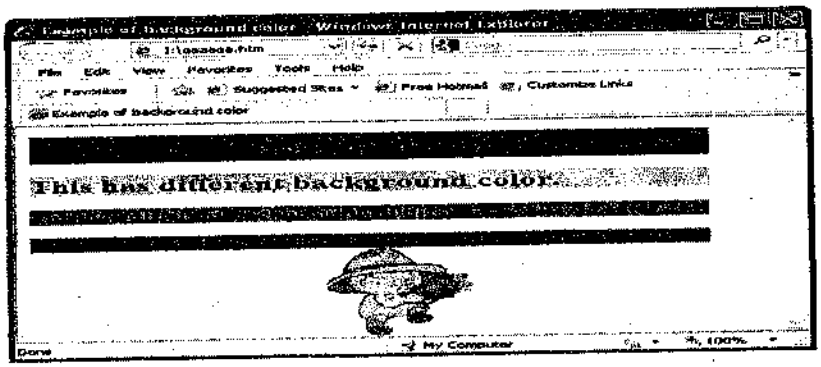
background-repeat :value ;

Values : no repeat, repeat(both), repeat-x(repeats vertically), repeat-y(repeats horizontally)

Example:

```
<html>
<head>
<title>Example of background color</title>
<style type="text/css">
h2 {background-color:yellow; }
h3 {background-color:#00ff00;}
p {background-color:rgb(255,0,255); }
h1 {background-image:url('winter.jpg');}
body {background-image:url('images1.jpg'); background-repeat:no-repeat; background-position:center
```

```
bottom; margin-right:50px;}
</style>
</head>
<body>
<h1> This has background image.</h2>
<h2> This has different background color.</h2>
<h3> This has different background color.</h3>
<p>
This is a paragraph that have different background color than headding color.
</p>
</body>
</html>
```



10.14 BORDERS

CSS Border attributes allow you to completely customize the borders that appear around HTML elements. With HTML, it used to be impossible to place a border around an element, except for the table.So you can set the color, style and width of the borders around an element by using the following borders properties or attributes.

10.14.1 Border Color

You can set the color of a border idependently using the border-color property.

border-color : value ;

Values : color name, hexadecimal number, RGB color code.

10.14.2 Border Style

There are different types of borders style such as dotted, dashed , solid, double etc. You can set the style of a border using border-style property.

border-style : value ;

Values : dashed, dotted, double, groove, inset, none, outset, ridge, solid

10.14.3 Border Width

The width of border is defined by the property border-width, which can obtain the values thin, medium, and thick, or a numeric value, indicated in pixels.

border-width : value ;

values : length, thin, medium, thick

10.14.4 Border Bottom

You can set the color, style and width of the bottom border using following property.

1. border-bottom-color : value ;
2. border-bottom-style : value ;
3. border -bottom-width : value ;

10.14.5 Border Left

You can set the color, style and width of the left border.

1. border-left-color : value ;
2. border-left-style : value ;
3. border-left-width : value ;

10.14.6 Border Top

You can set the color, style & width of top border.

1. border-top-color : value ;
2. border-top-style : value ;
3. border-top-width : value ;

10.14.7 Border Right

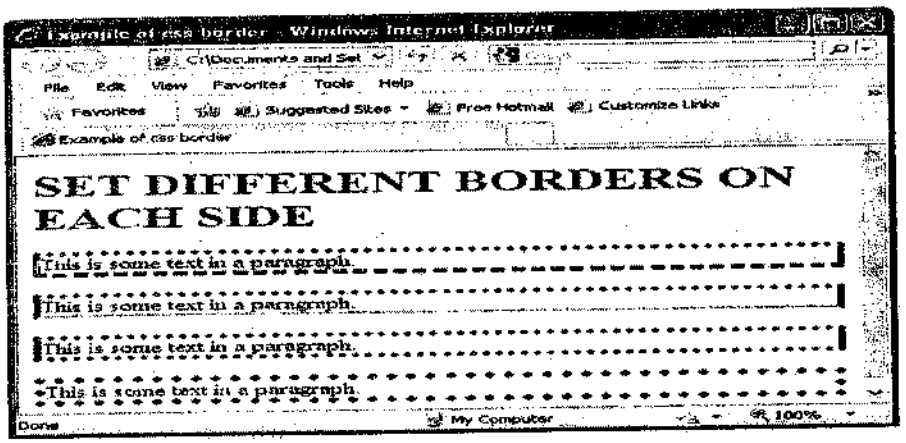
You can set the color, style and width of right border.

1. border-right-color : value ;
2. border-right-solid : value ;
3. border-right-width : value ;

Example:.

```
<html>
<head>
<title>Example of css border</title>
<style type="text/css">
.one {border-style:dotted solid dashed double;}
.two {border-style:dotted solid groove;}
.three {border-style:dotted solid;}
.four {border-style:dotted ; border-color:red; border-width:thick}
</style>
</head>
<body>
<h1> SET DIFFERENT BORDERS ON EACH SIDE</H1>
<p class="one">This is some text in a paragraph.</p>
<p class="two">This is some text in a paragraph.</p>
<p class="three">This is some text in a paragraph.</p>
<p class="four">This is some text in a paragraph.</p>
```

</body>
</html>



10.15 LIST STYLE

The list styles are two type: ordered and unordered list, CSS allows for more list customization than HTML to the extent that images can be used as bullet points for unordered lists. You can control the appearance of ordered and unordered lists using list-style property :

list-style : value ;

Vaules are : image, position, type

10.15.1 List Style Image

You can use an image for the bullet of unordered lists with this property :

list-style-image : url (path-to-image.gif, jpg)

10.15.2 List Style Position

You can control the position of ordered and unordered list with this property :

list-style-position : value ;

value are : inside, outside

10.15.3 List Style Type

You can control the type of bullet ordered and unordered list with this property :

list-style-type : value ;

Values are: disc, circle, square, decimal, lower-roman, upper-roman, lower-alpha, upper-alpha, none.

Example

```
<html>
<head>
<title >Example of css lists </title>
<style type="text/css">
ul.a {list-style-type:disc;}
ol.e {list-style-type:decimal;}
```

```
ol.h {list-style-type:upper-roman;}
ol.i {list-style-type:lower-alpha;}
</style>
</head>
<body>
<ul class="a">
<li>Disc type List</li>
<li>Tea</li>
<li>Coca Cola</li>
</ul>
<ol class="e">
<li>Decimal type List</li>
<li>Tea</li>
<li>Coca Cola</li>
</ol>
<ol class="h">
<li>Upper-roman type List</li>
<li>Tea</li>
<li>Coca Cola</li>
</ol>
<ol class="i">
<li>Lower-alpha type List</li>
<li>Tea</li>
<li>Coca Cola</li>
</ol>
</body>
</html>
```

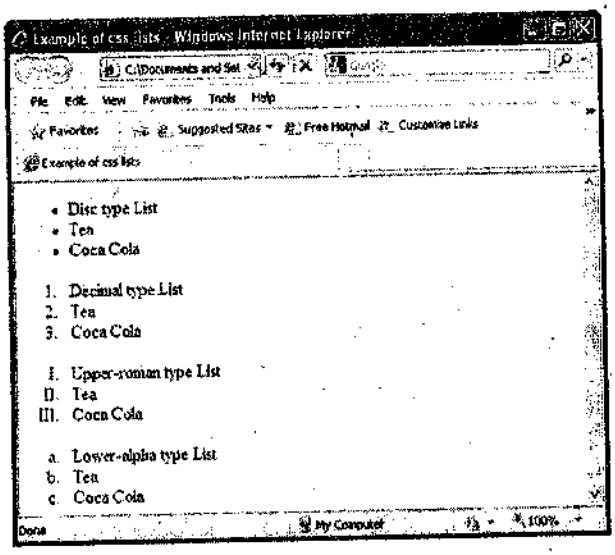
Self Learning Exercises

1. CSS stands for?
a. Central Style Sheets
b. Common Style Sheets
c. Cascading Style Sheets
d. Control Style Sheets

2. What CSS define in HTML?
   a. How to save HTML elements
   b. How to send HTML elements
   c. How to made HTML elements
   d. How to display HTML element

3. Which command we use to set an image on background?
a. image-background:url('R4R_Logo.jpg')
b. background-image:url('R4R_Logo.jpg')

4. Using CSS how to align our text in center in HTML?
   a. <html> <head><style type=\"text/css\">h1 {align-text: center}</style></head> <body><h1>Write here header</h1></body> </html>b.
   b. <html> <head><style type=\"text/css\">h1 {text-align: center}</style></head> <body><h1>Write here header</h1></body> </html>
   c. c. <html> <head><style type=\"text/css\">h1 {text-align: left}</style></head> <body><h1>Write here header</h1></body> </html>
   d. d. <html> <head><style type=\"text/css\">h1 {text-align: right}</style></head> <body><h1>Write here header</h1></body> </html>



10.16 CSS WIDTH AND HEIGHT

CSS allows you to control the height and width of an element with height & Width property .

Heigth : value ;

Width : value ;

Both Prperties has three values : auto, length, percentage

10.16.1 Max Height and Max Width Property

You can control maximum height of an element using max-height property and maximum width using max-width property :

Max-height : value ;

Max-Width : value ;

values are: none, length, percentage

10.16.2 Min Height and Min Width Property

You can control minimum height of an element with min-height property and width with min-width prop-

erty.

min-height : value ;

min-width : value ;

values are: length, percentage

10.16.3 Line Height

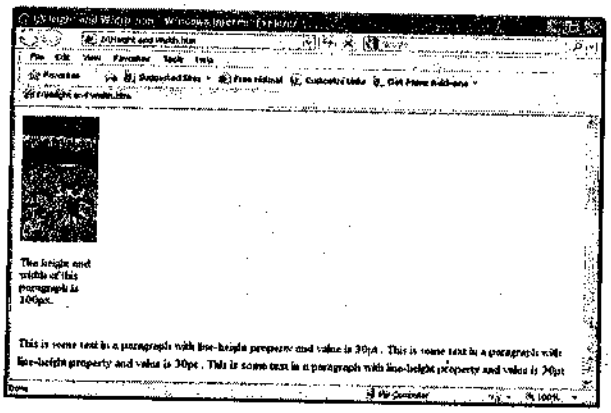
You can control the height between lines using line-height property.

line-height : value

Values : Normal, Number, length, percentage.

Example:

```
<html>
<head>
<style type="text/css">
img.normal{height:auto;}
img.big{height:120px;}
p.abc{height:100px;width:100px;}
p.xyz{line-height:20pt;}
</style>
</head>
<body>
<img class="normal" src="winter.jpg" width="95" height="84" /><br />
<img class="big" src="image.jpg" width="95" height="84" />
<p class="abc">The height and width of this paragraph is 100px.</p>
<p class=xyz>This is some text in a paragraph with line-height property and value is 30pt
This is some text in a paragraph with line-height property and value is 30pt .
This is some text in a paragraph with line-height property and value is 30pt . </p>
</body>
</html>
```



10.17 CSS CLASSIFICATION

With CSS Classification properties, you can Specify how and where elements are displayed.

1. Setting how an element is displayed.
2. Setting the visibility of elements.
3. Setting the way an element appears in another element.
4. Setting a Cursor.

10.17.1 Setting how an element is displayed

Display of element is set with the displayed. It's possible values are :

. None - Element want be displayed

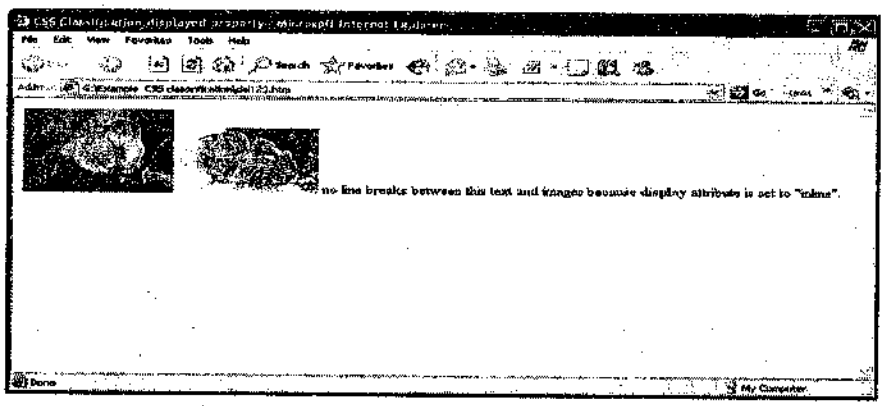
. Block - Element will be displayed break before and after it.

. inline - Element will be displayed with no line break before and after it.

. list item - Element will be displayed like a list

Example

```
<html>
<head>
<title> CSS Classification displayed property</title>
</head>
<body>
<p style="display:none;"> This Text is not Displayed </p>
<img src = "images1.jpg" style = "display : inline;"/>
<img src = "images2.jpg" style = "display : inline ;">
no line breaks between this text and images because <b> display </b> attribute is set to "inline".
</body>
</html>
```



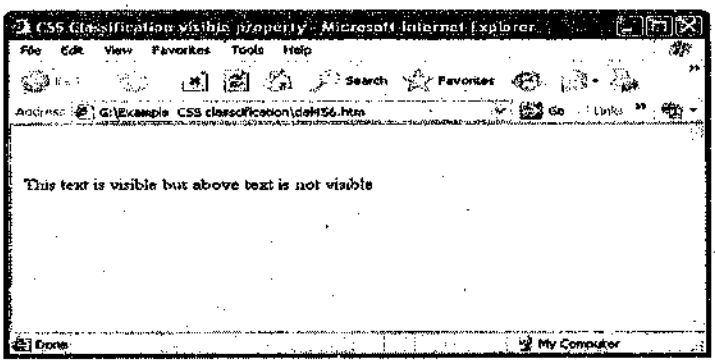
10.17.2 Setting the visibility of elements

The visibility of elements is set using the visibility property. This property can take the value "visible" to set elements as visible (default) or "hidden" to set elements as

unvisible.

Example.

```
<html>
 <head>
<title> CSS Classification visible property </title>
</head>
<body>
<p style ="visibility : hidden;">
This text is not visible </p>
<p style ="visibility : visible ;">
This text is visible but above text is not visible</p>
</body>
</html>
```



10.17.3 Setting the way an elements appear in another element

you can specify how an element should appear in another element using the float property.

Possible values :-

. left - Will appear on the left side of another element

. right - Will appear on the right side of another element.

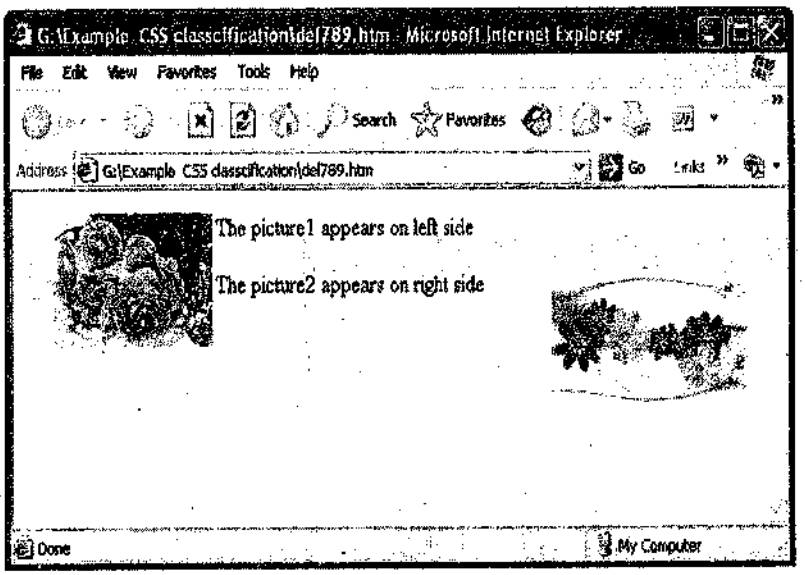
. none - Default ,will be displayed where it occurs .

Example

```
<html>
<head>
<style type = "text/CSS">
img.one{float:left ;}
img.two{float:right ;}
</style>
</head>
<body>
```


 The picture1 appears on left side

 The picture2 appears on right side
</body>
</html>



10.17.4 Setting a Cursor

You can set what type of cursor will appear when you move the mouse over an element using the cursor property.

Possible values :-

- Crosshair
- Pointer
- Move
- Wait

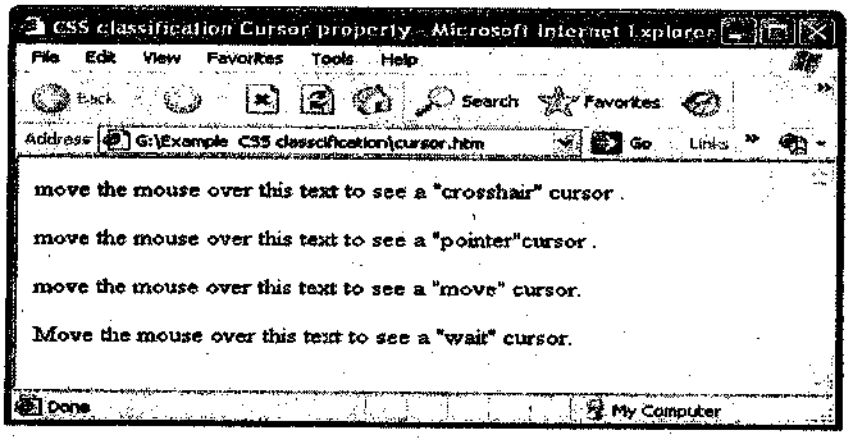
Example

<html>
<head>
<title> CSS classification Cursor property </title>
</head>
<body>

move the mouse over this text to see
a "crosshair" cursor .

move the mouse over this text to see a "pointer"cursor .

```
</p>
<p style ="cursor : move ;">
move the mouse over this text to see a "move" cursor.
</p>
<p style = "cursor : wait ;">
Move the mouse over this text to see a "wait" cursor.
</p>
</body>
</html>
```



10.18 SUMMARY

This unit discussed about the cascading style sheets uses and its features . It is a power full mechanism for adding style like fonts, margins, padding, text, lists style, background images, various types of borders etc. to web documents and CSS provide various attributes to create dynamic effects in website. The style defined with in <style> .....</style>tag. We also discussed various style attributes and CSS classes. The class is useful features. It enables to specifying the style for the particular web elements. If we make an elements a member of class by inserting class= classsname into its opening tag. The .....</ span> is an html elements that play an important roll in style sheet, are also discussed in this unit. We also discussed about the CSS classification.

10.19 GLOSSARY

Attribute :A value associated with an element, consisting of a name, and an associated textual value.

Cascade: The cascade in CSS or cascading style sheets is the ability to have multiple styles from different sources merge together into one definitive style. CSS defines the cascade in several ways, but the simplest is to remember that style properties that come later are more likely to be applied than those that come earlier.

Em:Em is a proportional unit of length in CSS to scale properties in relation to an elements font size. If a font size is 12px then 1em is 12px for that element alone. 2 em for that element woul be 24px

List:Lists are a good way of getting information across quickly to the user in a structured manner. There are three different lists we can produce - unordered, ordered and definitions lists. The appearance of list elements should be defined with CSS

Padding:CSS padding is the space between an element's border and the content within it. With CSS Padding you will be able to change the default padding that appears inside various HTML elements (paragraphs, tables, etc).

10.20 FURTHER READINGS

- Learn Cascading Style Sheets By Jennifer Kyrnin,
- CSS: The Definitive Guide by Eric Meyer
- CSS for Web Designers Only by Donna L. Baker

10.21 ANSWERS TO SELF LEARNING EXERCISES

1. c.
2. d.
3. b
4. b.

10.22 UNIT-END QUESTIONS

1. What is cascading style sheets (CSS)?
2. Explain the following properties with attributes ?
   a. Margins
   b. Backgrounds
   c. Fonts
   d. Text
3. What is class? Explain the uses of the class with example?
4. Design a web page for vmou, using style sheets with the following specification
   a. Define a class .vmou with the attributes (font-size:80%; font-weight:bold; font-family:arial)
   b. Use class wherever text courses offered appears on the web documents.
   c. Use the unordered listing giving the list of courses offered in vmou.
5. What do you mean by pseudo classes explain.
6. What is CSS Classification? Explain with example.

UNIT -XI
DESIGN TOOLS

STRUCTURE OF UNIT

11.0 OBJECTIVE

In this unit you will learn the concepts of WYSIWYG (What You See Is What You Get) editor. This unit will also help you to do the work in web-design tools like Macromedia Dreamweaver, Microsoft Front Page and other popular HTML editors like Notepad, Notepad++, Crimson Editor, Eclipse, NetBeans, Abiword etc. This unit also helps you to perform editing using Image Editor and also provide the features of Image Editor. In this unit, you will also learn about the Web site creation & publishing. This unit covers the hosting considerations that are helpful for us to host our web site to all users on the Internet.

11.1 INTRODUCTION TO WYSIWYG

A WYSIWYG (pronounced "wiz-ee-wig") editor or program is one that allows a developer to see what the end result will look like while the interface or document is being created. WYSIWYG is an acronym for "what you see is what you get". A WYSIWYG editor can be contrasted with more traditional editors that require the developer to enter descriptive codes or markup and do not permit an immediate way to see the results of the markup. The first true WYSIWYG editor was a word processing program called Bravo. Invented by Charles Simonyi at the Xerox Palo Alto Research Center in the 1970s

An HTML WYSIWYG editor, such as Microsoft's FrontPage or Adobe's PageMill conceals the markup and allows the Web page developer to think entirely in terms of how the content should appear. One of the trade-offs, however, is that an HTML WYSIWYG editor sometimes inserts the markup code it thinks is needed all on its own. Then, the developer has to know enough about the markup language to go back into the source code and clean it up. It implies a user interface that allows the user to view something very similar to the end result while the document is being created. WYSIWYG implies the ability to directly manipulate the layout of a document without having to type or remember names of layout commands. WYSIWYG editor is helpful:-

1. In Presentation programs, compound documents and web page, WYSIWYG means the display precisely represents the appearance of page displayed to the end-user.

2. In Word processing and Desktop publishing applications, WYSIWYG means the display simu-

lates the appearance and precisely represents the effect of fonts and line breaks.

3. WYSIWYG also describes ways to manipulate 3D models in stereochemistry computer-aided design, 3D computer graphics and it is the brand name of Cast software's lighting design tool used in the theatre industry for previsualisation of shows.

WYSIWYG Models

1. Composition Model

In which the user sees something somewhat similar to the end result, but with additional information useful while composing, such as section breaks and non-printing characters.

2. Layout Model

In which the user sees something very similar to the end result, but with some additional information useful in ensuring that elements are properly aligned and spaced, such as margin lines.

3. Preview Model

In which the application attempts to present a representation that is as close to the final result as possible.

11.2 OVERVIEW OF MS FRONT PAGE

11.2.1 Introduction

Microsoft FrontPage is a WYSIWYG HTML editor and web site administration tool from Microsoft office for the Microsoft Windows operating systems. As a WYSIWYG editor, FrontPage is designed to hide the details of page's HTML code from the user, making it possible for easily create web pages and sites. MS Front Page is the web page editor by Microsoft. It is very easy to use and also allow us to access to HTML code in another window, so we can make changes to our code. To add text to our web page, first of all we have to choose our font, point and type. Adding graphics, links and other things are just as simple. Microsoft FrontPage have the various features for developing web site and it has many useful tools which provides to develop features to the developer.

Microsoft FrontPage provides the major tools for creating dynamic web site to the developer. Some of these tools are:

1. Web page creation tool
2. Web site management tool
3. Web site publishing tool

The web page creation tool, you will use the FrontPage editor to construct each page in your web site. Your pages will be individual HTML files. HTML files are simple text files. They contain the actual text that you want to display on screen, and they contain the coding for how your text and graphics are displayed on every web pages. The HTML files also contain the coding for links to other web pages.

The web site management tool , you will use FrontPage to assemble your collection of web pages into a coherent web site. This is what is known in MS FrontPage as a web. MS FrontPage will not only assemble to your pages into a web site, it will also create a diagram how the pages interconnect in your web and also check the links among your web pages to make sure they are all valid or not.

The web publishing tool, you will use MS FrontPage to transfer or publish your web to the server where it will be seen on the internet. MS FrontPage makes the task of publishing your web easily as creating your web site publishing your web is literally one button to select the publishing command, then FrontPage will establish a connection to the web server where your web will be published.

11.2.2 Create a Web Site in Front Page

With Microsoft FrontPage we can do more than just edit pages, we can manage our entire web site by using these steps:

1. Click on the File menu and choose New Page or Web.
2. In the "New Page Or Web" panel click on "Empty web".
3. In the option Section, browse to the location where we want to store the files and give our new directory name.
4. Choose a Template Style or "Empty Web" and click "OK".
5. Click on New Page icon to create the home page for the site.
6. Start editing the home page or add sub-pages and create the hierarchy for the site.

11.2.3 Front Page Basics

You can use the following basic facilities to create web site using MS FrontPage.

1. Creating a Heading : To add a heading we need to highlight the text that we want as our heading. Then find out the first drop down box at the top of the window and choose the type of heading, as required.

2. Choosing a Font

To change the font just click on the second drop down menu it says "default font" and choose our font style. To change size of letters click on the third box it says "Normal" and click on our desired size. To

change the color of words look for the big "A" on the right and choose the color, by click on it.

3. Adding a Link

When we want to add a link to our page there are different ways :

1. Highlight the desired text.

2. Click on the Icon at the top that looks like a world with a sideways under it and says " Hyperlink" then place the mouse over it.

3. Now we have some options.

4. Type the address of the page we want to link.

5. Click on the option to browse for the page we want to link to.

6. Link to a file on our computer

7. Make a new page and link to it and click on OK.

4. Adding an Email Link

1. Highlight the desired text.

2. Click on the icon at the top that looks likes a world with a sideways under it and says "Hyperlink" then we place the mouse over it.

3. Click on the icon that looks like an envelope.

4. Type in the desired Email address.

5. Click "OK" then click "OK" again.

5. Scheduling Pictures

The one cool thing is that we can do with front page is to schedule picture shows as our need. If we want it showing on, just do this.

1. Click on the button with the gear.

2. Then click on "Scheduled Picture" full in the location of both pictures.

3. Then set the days and times to start and stop showing the scheduled picture.

4. Click "OK"

6. Spell Checking

When we write it is very important that is should be correct. To do this we must go to the beginning of the page or text we want checked and highlight the text we want to checked. Then Click mark on the button that says "ABC" and has a check mark. When we click on the button it will begin to check the spelling of all words. When it find the word, that it thinks is spelled wrong it gives us several options to fix it.

11.2.4 Features of Front Page

1. CSS Style wizards
2. Style Sheet linking
3. Pixel-precise positioning and layering
4. Customizing themes
5. Improved cross-browser DHTML animation effects
6. Enhanced color tools
7. Improved table editing
8. Nested sub webs
9. Target specific web browsers, features and servers.
10. Background spell check underlines
11. Pre-built web components
12. Web server administration
13. Roaming user profiles
14. HTML source preservation
15. Quickly insert code
16. Show all tags
17. Personalized HTML formatting
18. Online help improvements.
19. HTML terms in help
20. Toolbar customization

Self Learning Exercises

1. How to edit HTML in FrontPage ?
2. How to delete a cell within in table in FrontPage

11.3 MACROMEDIA DREAMWEAVER

Adobe Dreamweaver is a web development application originally created by macromedia and is now developed by Adobe systems, which acquired Macromedia in 2005. Dremweaver is available for both Mac and Windows Operating Systems. Dreamweaver is a useful tool for web development created by

Macromedia. It makes creating web pages possible for those who do not know HTML coding. Macromedia Dreamweaver from Adobe is the industry-leading web development tool that lets you efficiently design, develop and maintain standards-based websites and applications. It provides a powerful combination of visual layout tools, application development features, and code editing support.

Macromedia Dreamweaver is a powerful WYSIWYG site building tool. It is a easy to use software that allows you to create professional web Pages. The design edition features of Dreamweaver allow you to quickly add objects and functionality to your pages, without having to program the HTML code manually. It's possible to create tables, edit frames, work with layers, insert JavaScript behaviors, etc., in a very simple and visual way. In addition, it includes a complete FTP client software, allowing among other things to work with visual maps of the Web sites, and updating the Web site in the server without leaving the program.

11.3.1 Features

Dreamweaver allows users to preview websites in locally installed web browsers. It provides transfer and synchronization features, the ability to find and replace lines of text or code by search terms and regular expressions across the entire site, and a templating feature that allows single source update of shared code and layout across entire sites without server side scripting. Dreamweaver allows us to build a complete web sites from scratch without having to write much HTML or CSS.

The features of Dreamweaver are as follows.

1. Dreamweaver is a professional Software for designing, coding, developing websites, web-pages & web application.
2. Dremweaver makes web development easier.
3. We enhance our websites with Dreamweaver
4. Improved support for basis. We don't have to write coding because Dreamweaver provides us with visual editing tools.
5. Elements can be dragged and dropped onto our web pages using panels of Dreamweaver.
6. Dreamweaver provides us with reference on the following coding as :
   - HTML
   - Rich, Powerful CSS Support
   - Java Script

- Cold Fusion Markup Language (CFML)
- Microsoft Active Server Pages (ASP)
- Java Server Pages (JSP)

7. Increased Support for today's technologies and Standards:
   - CFML
   - ASP.Net
   - JSP
   - PHP
8. Streamlined Design and Development Environment.
9. Code Editing Support.
10. Seamless Integration with external files and code.
11. Increased Security.
12. Cross Browser Validation.
13. Tight Integration with other Macromedia tools.
14. Built - in Graphic Editor.

11.3.2 Site Management

Getting Started : StartMenu→Programs→DreamWeaver

Click on the icon to start the program. Before we work on individual pages, we need to set up our site using the site management features. To set up a site in Dreamweaver, we first need to create a folder on our hard drive that will hold all our web pages. Minimize the Dreamweaver window and then right click on an empty area of the desktop. Select **New–>Folder**. Let's name this folder *website* .Now we'll go through the steps of defining a site. This means telling Dreamweaver where the *website* folder can be found and providing some other information.

1. Choose Site-New Site

The Site Definition dialog box appears. Make sure that the Local Info category is selected in the left side of the dialog box.

2. In the Site Name text box, type a name for your site.

We can call our site whatever we like. After we name it here, the name appears as an option on the drop-down list of the Site dialog box. We use this list to select the site. We want to work on when we

open Dreamweaver.

3. Use the Browse button next to the Local Root Folder text box to locate the website folder on the desktop.

4. If it isn't already selected, click to place a check mark in the box next to Refresh Local File List Automatically, if you want Dreamweaver to automatically update the list of all the new pages we add to our site.

5. Under Link Management Options, type the URL of our website in the HTTP Address text box. (If we don't have a website address yet, just leave the box blank.)

6. Click OK to close the Site Definition box.

7. A message will appear asking if we'd like to create a cache for the site. Dreamweaver offers this option because it can work faster when there is a cache. Go ahead and say Yes.

11.3.3 The Elements of Dreamweaver

1. Site Management - An integrated file transfer client and visual site map allow site navigation, file linking and uploading/synchronization of our site.

2. Template - Templates allow users to quickly edit all common elements, such as navigation bars throughout a whole site.

3. Cascading Style Sheets - CSS allow users to quickly change the appearance of text elements throughout the site.

4. Java Script Behaviors - Dreamweaver behavior are Java Script that we can apply with out having to deal with the necessary code.

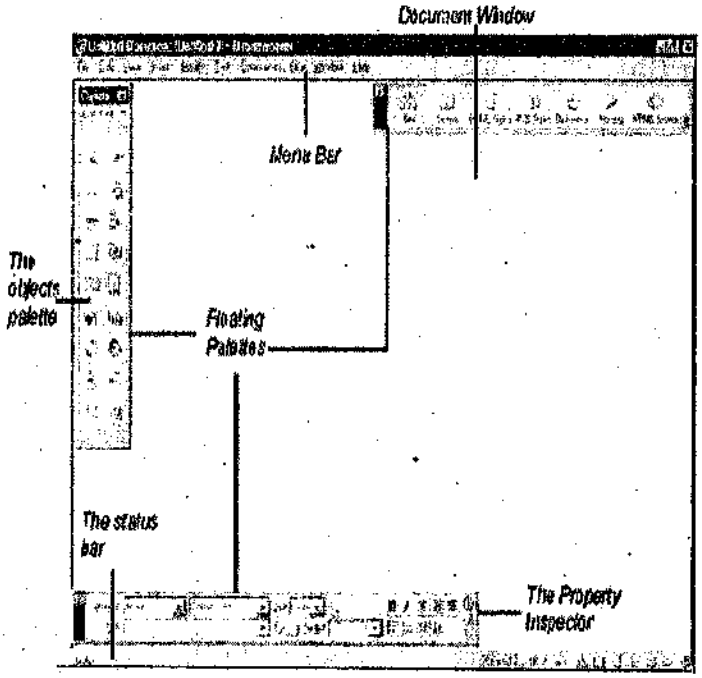
11.3.4 The Dreamweaver Workspace

When we launch Dreamweaver, a blank page—called the *workspace*—appears automatically, much like a blank document appears in Microsoft Word. We can type text directly into the Workspace, and we can apply basic formatting, such as Bold and Italics, simply by selecting **Text–>Style–>Bold** or **Text–>Style–>Italics**. Web pages are built in the Workspace, which consists of a main window that shows the HTML page, we're working on and a number of floating palettes and windows that provide tools to design and develop our web pages. The Dreamweaver Workspace consists of four basic components: the document window, floating palettes, menu bar and status bar.

- **The Document Window :**

The big open area on the Workspace is the document window. It's essentially a blank page, but what we create there is automatically converted into HTML code. The document window displays text,

images and other elements in the same way that a web browser does. (Though things will look slightly different depending on which version of Netscape or Internet Explorer is used to view the page—it's best to test our page on several versions to get the best design.)



- **The Floating Palettes:**

The floating palettes in Dreamweaver provide easy access to many of the program's features. We can move the palettes around or close them if they get in our way. To get them back, choose **Window** from the pull-down menus and select the palettes we'd like to use. Here's a list of some of the floating palettes that we will be using most frequently.

1. The Objects Palette: Contains buttons for creating HTML elements, such as tables, layers, and for inserting images, plug-in files and other objects. There are six menus within the objects palette—use the pull-down menu at the top of the palette to access the other features.

2. The Property Inspector: This palette displays the properties of a selected element (such as an image or link) on the page. A *property* is a characteristic of HTML—such as the alignment of an image or the size of a cell in a table.

3. The Launcher: A palette that allows for easy access to more advanced features of Dreamweaver, such as HTML and CSS Styles, Behaviors and the HTML source window.

- **The Menu Bar:**

At the top of the screen, the Dreamweaver menu bar provides easy access to all the features that you

find in the floating palettes, as wells as a few others that are available only from the menu.

1. The File Menu: Under the file menu, you find many familiar options, such as ***New***, ***Open***, and ***Save***. You also find the ***Revert*** option, similar to Undo—this feature allows you to return to the last saved version of your page if you don't like the changes you've made.

2.The Edit Menu: The familiar ***Cut***, ***Copy***, and ***Paste*** reside on the Edit menu. You can also find the ***Preferences*** settings here. This feature allows you to set up the program so that it works best for you.

3. The View Menu: This menu gives you access to some helpful design features, such as grids and rulers. For more advanced users, this menu allows you to turn on or off the borders of your HTML tables, frames and layers.

4. The Insert Menu: From this menu, you can insert elements such as a Horizontal rule, a Java applet, a Flash movie, a Form or a Plug-in file.

5. The Modify Menu: Another place where you can view and change object properties, just like the Property Inspector.

6. The Text Menu: You can easily format text with the Text menu by using simple options, such as **Bold** or **Italic**, as well as more complex features, such as Font styles and Custom style sheets.

7. The Commands Menu: The features on this menu are useful when you want to automate a task, such as making a certain size table. The **Start** and **Play Recording** features are similar to the Macro feature in Microsoft Word.

8. The Site Menu: This menu provides access to the options you need to set up your site, a process required before many of the other Dreamweaver features will work properly.

9. The Window Menu: The Window menu enables you to control the display of palettes and dialog boxes. If you want to see a palette that is not visible in the workspace, simply select that palette from the menu. Items with check marks mean that these palettes are currently visible.

10. The Help Menu: Easy access to help options that can assist you in figuring out the many features of Dreamweaver. You also find access to the Dreamweaver template and example files under Help. Templates and examples provide visual samples of common HTML designs, such as tables and frames, and provide design ideas and great shortcuts for creating more complex layouts.

- **The Status Bar :**

The Status Bar appears at the very bottom of the screen. On the right end of the Status Bar, you can see shortcuts to all the features on the Launcher palette. On the left end, you find HTML tags that indicate how your elements are formatted. This feature makes double-checking the kind of formatting applied to any element on your page easy. To turn the display of the Status Bar on or off, choose accordingly.

11.3.5 Defining a Site

Dreamweaver operates based upon the concept of a web site. To open the site in dreamweaver there are following steps -

1. Click on Site-Site files to open the site files Window.

2. Then choose Define sites and click on it.

3. Now choose New in the pop up window.

4. Select the Advanced tab in the Site Definition Window.

5. Now just enter the local Info, for name and location of the site to Dreamweaver.

11.3.6 Dreamweaver Layout

Dreamweaver allow us to insert object and change their attributes with the floating panels and menu commands. Once we start dreamweaver, we may see a blank web page with 3 floating panels:

1. Insert Panel - It is graphical buttons or icons for objects that can be inserted into a web page.

2. Properties Panel - By default, this panel is below our web page. We can choose an element on the web page and adjust its properties here.

3. Answer Panel - By default, this panel appears at the bottom of listed panels on the right. If it does not automatically appear, click on the arrow next to Answers to maximize the panel.

All of Dreamweaver's panels can be moved or opened and closed via the window menu.

11.3.7 Save Our Files Locally

When we save our files, we need to consider the structure of our web site and use a legal file name. From the File menu, select Save. We also need to follow the general rules for filenames on the web

1. Use proper extensions (.html, .jpg, .gif).

2. No spaces, no slashes, no colons, no percent sign, no asterisks.

3. If in doubt, stick with letters and number only.

4. Special file names : welcome.html, index.html.

11.3.8 Publishing the Site

Once we have the page the way we want it, we are ready to post it for all to see. Regardless of where we are posting, Dreamweaver provides a handy tool to help us with this process.

1. Open the Site Files Window. We can open this window by choosing **Site→SiteFiles.**

2. Select Remote Info on the left and enter the relevant information. In most cases we will want to access the web server via Local/Network .

3. If we are accessing the server via Local / Network, we may also need to mount the server before we can set up or use the Dreamweaver Site Management Tool.

Self Learning Exercises

3.How to Create a Home Page ?

4.how to Add Layers in the web page ?

5.how to name your placed image ?

11.4 OTHER POPULAR HTML EDITORS

11.4.1 Text Editors

1. Notepad

It is a simple text editor for Microsoft Windows. It has been include in all versions of Microsoft Windows since Windows 1.0 in 1985. In Notepad the resulting files typically saved with the .txt extension. It supports both left-to-right and right-to-left based languages.

2. Crimson Editor

It is an open source text editor. It is typically used as source code editor and HTML editor, for Microsoft Windows. Crimson Editor features Windows shell integration, tabbed document interface syntax highlighting, multiple undo/redo, column made editing, bracket matching, auto indentation, spell checking, direct editing of text files in FTP and the interrogation with compilers.

3. Nano

It is a cursor based text editor for Unix and Unix Like Systems. Nano, like pico, is keyboard-Oriented, controlled with control keys. Nano uses meta keys to toggle its behavior. For example Meta-s toggles smooth scrolling mode ON and OFF. Nano puts a two line shortcut bar at the bottom of the screen, listing many of the commands available in the current context.

4. Vim

It is a text editor released by Bram Moolenaar in 1991. Vim is acronym for "Vi Improved", it was created as an extended version of vi editor. Vim has been developed as cross-platform, supporting many other platforms. Vim is free and open source software.

11.4.2 Source Code Editors

1. Notepad ++

It is a versatile text editor and source code editor for windows. It can also run on Linux and Mac OS X, using software such as Wine. It is distributed as free software .Notepad++ uses the Scintilla editor component.

2. NetBeans

It refers to both a platform framework for Java Desktop Application and an Integrated Development Environment (IDE) from developing with Java, Java Script, PHP, C, C++ and others. The NetBeans IDE is written in Java and runs everywhere a JVM is installed, including Windows, Linux and Solaris. The NetBeans platform allows applications to be developed from a set of modular software components called modules.

3. Eclipse

It is a multi-language software development environment comprising an IDE and extensible plug-in systems. An IDE is often called Eclipse ADT for Ada, CDT for C/C++, JDT for Java and PDT for PHP. Eclipse is free and open source software.

4. Bluefish

Bluefish is a web development editor focused towards the development of dynamic websites. Bluefish supports development in HTML, XHTML, CSS, XML, PHP, C, Java Script. Bluefish is available on most platforms, including Linux, Solaris and Windows. Bluefish is relatively lightweight and has a low learning curve, while still providing many features to support the development of websites.

11.4.3 Word Processors

1. Microsoft Word

It is a word processor designed by Microsoft. It was first released in 1983 under the name Multi-Tool Word for Xenix systems. Although the ".doc" extension has been used in many different versions of word, it actually encompasses four distinct file formats :

1. Word for DOS
2. Word for Windows 1 and 2 ; Word 4 and 5 for Mac.
3. Word 6 and Word 95,200 for Windows.
4. Word 98, 2001 & 2004 for Mac.

2. Word Perfect

It is a Word Processing application, now owned by Corel. The common file name extension of Word Perfect document files is ".wpd ". Older versions of Word Perfect also used file extensions .wp, .wp7, .wp6, .wp5, wp4 and no extension at all.

3. Pages

Pages is a Word processor and page layout application developed by Apple. It is part of the work productivity suit. Pages is Marketed by Apple as an easy-to-use application that allow users to quickly create

professional quality documents on their home computer.

4. AbiWord

It is a free and open source software word processor. Abiword was adopted by some open source developers and Word continued to be developed. It runs on Linux, Microsoft Windows, Reactors and other operating systems. AbiWord is a part of GNOME office, a collection of office applications with some degree of applications.

11.4.4 WYSIWYG Editors

WYSIWYG (What You See Is What You Get) code generators offer speed and easy of use. Some of these editors do not require any knowledge of the programming languages generated by the software.

1. Coffee Cup HTML Editor

It is editor that supports both raw HTML and WYSIWYG editing. According to the authors the editor was the first to support Java Script, Split-Screen editing and built-in FTP upload.

2. iWeb

It is a template - based WYSIWYG website creation tool developed by Apple Inc. The first version of iWeb was announced at the Macworld conference & Expo. iWeb allows users to create websites and blogs and customize them with their own text, photos and movies.

3. Opera

Opera was designed to run well even on law-end and small computers and with a commitment to computer accessibility for users who may have visual or mobility impairments. Opera also supports the use of access keys to allow a computer user to immediately jump to a specific part of a web page via keyboard. A "Fit to Window" feature that allowing websites to fit with in a smaller screen without the need for horizontal scrolling.

4. Microsoft Visual Studio Express

It is a set of freeware Integrated Development Environment (IDE) developed by Microsoft that are light-weight version of the Microsoft Visual Studio product line. Visual Studio 2008 and 2010 express Editions require Windows XP or a later Windows versions.

Visual Studio Express consists of the following separate products:

- Visual Basic Express
- Visual C++ Express
- Visual C# Express
- SQL Server Express

11.5 IMAGE EDITOR

It provides the facilities of altering images, whether they be digital photographs, traditional analog photographs or illustration. Tradition analog image editing is known as retouching, using tools such as an airbrush to modify programs, which can be broadly grouped into vector graphics editors, raster graphics editors and 3-D modelers. These are the primary tools with which a user may manipulate, enhance and transform images.

Some of image editors are:

1. PhotoMeister

PhotoMeister helps you to process, edit and publish photos from your digital camera. You can import your photos from your digital camera or a local folder and easily edit them to remove red eye, make color or other adjustments and, rotate them and more. You can then choose from a variety of options to further process your images - they can be published as a HTML photo gallery, printed, or packaged for email delivery. You can also create screensavers and PDF albums with custom page layouts and text annotations. PhotoMeister can also burn your image collections or album creations directly to CD-ROM without the need for any additional burning software. The program comes with an easy to use interface and step-by-step wizards for every task. Additional features include batch processing, web publishing support, custom templates, album search and more.

2. Photo! Editor

Photo! Editor enables you to perform a variety of popular photo editing functions on your images. You can adjust or correct colors, remove red-eye effects, remove JPEG artifacts, crop images to specific proportions and more. The program also includes a retouching option that allows you to remove cosmetic imperfections with a smoothing or healing brush, as well as a caricature tool that lets you apply warp effects to create caricature-like images from your photos. Other features include lighting effects, image resizing, photo straightening

3. PhotoFiltre

PhotoFiltre is a complete image editing and effects package, that will not only amaze you with features but also the fact that it is free for personal use. It comes with many features that rival some commercial packages, as well as additional add-on that can be downloaded from the web site. PhotoFiltre offers all the standard editing features (selection, clone brush, paint brush etc.) as well as a large selection of image effects, photo masks, image adjustments, thumbnail browser and much more. The program also supports batch processing to apply filters, sizing, adjustments and transformations to a large number of images at once. PhotoFiltre comes with modern, well designed interface and is well suited for everything from simple resizing to advanced photo editing. No installation required.

4. Paint.NET

Paint.NET is free image and photo editing software for computers that run Windows. It features an intuitive and innovative user interface with support for layers, unlimited undo, special effects, and a wide variety of useful and powerful tools It started development as an undergraduate college senior design project mentored by Microsoft, and is currently being maintained by some of the alumni that originally worked on it. Originally intended as a free replacement for the Microsoft Paint software that comes with Windows, it has grown into a powerful yet simple image and photo editor tool. It has been compared to other digital photo editing software packages such as Adobe Photoshop, Corel Paint Shop Pro, Microsoft Photo Editor.

5. ImageForge

ImageForge is a freeware image editor with painting and editing tools. Allows you to import images from scanners and digital cameras, apply special effects filters, and create photo albums and slideshows. Although this is teaser program for the shareware ImageForge PRO, it's probably a few steps above Microsoft Paint.

6. Microsoft Photo Editor

Microsoft Photo Editor was an image-editing application found in Microsoft Office 97–XP versions for Windows, classified as one of Microsoft Office Tools. It has been replaced by Microsoft Office Picture Manager, although some Photo Editor features are not available in Picture Manager. The program was a tool for doing raster graphics with editing tools to texturize, negative, adjust gamma, make GIF transparency and many others.

11.5.1 Image Editor Features

1. Selection

It is a method of selecting part of an image, thus applying a change selectively without affecting the entire picture. Most graphics programs have several means of accomplishing this, such as a marquee tool, lasso, vector based pen tools as well as more advanced facilities such as edge detection, masking, alpha composition and color and channel based extraction.

2. Layers

Layers are analogous to sheets of transparent acetate (each containing separate elements that makeup a combined pictures), stacked on top of each other, each capable of being individually positioned, altered and blended with the layers below, without affecting any of the elements on the other layers

3. Image Size Alteration

Image editors can resize images in a process often called image scaling, making them larger or smaller high images are often reduced in size for internet use. Image editor programs use a mathematical process called

resembling to calculate new pixel values whose spacing is larger or smaller than the original pixel values.

4. Cropping an Image

Cropping creates a new image of the image being cropped. The unwanted part of the image is discarded. Image cropping does not reduce the resolution of the area cropped.

5. Histogram

Image editors have provision to create an image histogram of the image being edited. This histogram plots the number of pixels in the image with the particular brightness value. Algorithm is the digital editor allow the user to visually adjust the brightness value of each pixel and to dynamically display the results as adjustments are made.

6. Noise Reduction

Image editors may feature a number of algorithms which can add or remove noise in an image. JPEG artifacts can be removed, dust and scratches can be removed and an image can be de-speckled. Excessive noise reduction leads to a loss of detail, and its application is hence subject to a trade off between the undesirability of the noise itself and that of the reduction artifacts.

7. Removal of Unwanted Elements

Most image editors can be used to remove unwanted branches, using a "Clone" Tool. Removing these distracting elements draws focus to the subject, improving overall composition.

8. Selective color Change

Some image editors have color swapping abilities to selective change the color of specific items in an image, given that the selected items are within a specific color range.

9. Image Orientation

Image editors are capable of altering an image to be rotating in any direction and to any degree. Mirror images can be created and images can be horizontally flipped or vertically flopped Rotated images often require cropping often wards, in order to remove the resulting gaps at the image edges.

10. Perspective Control and Distortion

Some image editors allow the user to distort (or "transform") the shape of an image. While this might also be useful for special effects, it is preferred method of correcting perspective distortion, which results from photographs being takes at an oblique angle to a rectilinear subject.

11. Lens Correction

Photo manipulation packages have functions to correct images for various lens distortions including pin-cushion, fisheyes and barrel distortions. The corrections are in most cases subtle, but can improve the appearance of some photographs.

12. Sharpening and Softening Image

Graphic program can be used to both sharpen and blur images in a number of ways, such as unsharp masking or deconwolution. Portraits often appear more pleasing when using a large aperture, or in the image editor by making a selection and then blurring it.

13. Selecting and Merging Images

Many graphics applications are capable of merging one or more individual images into a single file. The orientation and placement of each image can be controlled. When selecting a raster image that is not rectangular, it requires separating the edges from the background, also know as silhouetting. This is digital versions of cutting out the image. A popular way to create a composite image is to use transparent layers. Using an image layer mask, all but the parts to merged are hidden from layer, giving the impression that these parts have been added to the background layer.

14. Slicing of an image

A more recent tool in digital image editing software is the image slice. Parts of image for graphical user interfaces or web pages are easily sliced, labeled and saved separately from whole images, so the parts can be handled individually by the display medium.

15. Special Effects

Images editors usually have a list of special effects that can create unusual results. Images may be skewed and distorted in various ways scores of special effects can be applied to an image which include various forms of distortions, artistic effects, geometric transforms and texture effects.

16. Contrast Change and Brightening

Image editors have provisions to simultaneously change the contrast of image and brighten or darken the image. Underexposed images can often be improved by using this feature. Recent advances have allowed more intelligent exposure correction whereby only pixels below a particular luminosity threshold are brightened, thereby brightening underexposed shadows without affecting the rest of, the image. The exact transformation that is applied to each color channel can vary from editor to editor.

11.5.2 Designing a Website Using an Image Editor

To design a website we have to knowing the rules, limitations and constraints of web page design that will dramatically effect what you draw up in Image Editor. Before we draw anything, we will need to figure out some things first :

1. What resolution do you want to develop to ?
2. What layout do you want to use ?

2. Acquire web hosting services.

3. Test the web site.

4. Upload the web pages

5. Update the information

6. Validate the links

7. Promote the site

8. Address issues and concerns in web publishing

11.6.2 Creating Web Site

To Create a web site just follow these steps :

1. Plan the structure of the site, so that we have an idea what information will be on at least the home page and other key pages. Be sure that we have thought about the audience for the site, what our main purpose is and how often we plan to update the site.

2. Using the text editor or web page editor, create the pages for our site and save them as the HTML files. Use the graphics editor to create or view graphics for the pages.

3. Using our own browser, view the HTML files that we created. Check that the text is spelled correctly, that the graphics look good and that links among our pages work.

4. Publish our website by putting all of its files on a web server.

5. Using our browser, view the web pages as stored on the web server. If we expect the wide audience for our website, view the page by using the two most version of the most popular web browsers, because different browsers format pages slightly different. Also, view the pages from a computer other than the one on which we created the pages, so that we can accidental references to files on our hard-disk.

6. Publishing our site, get feedback, get new ideas and repeat the steps.

11.6.3 Maintaining the Web Site

To maintain a web site follow these steps:

1. The information in our web site should be updated for timeliness and accuracy.

2. Due to the Internet's dynamic nature link on our site should be validated periodically to eliminate or at least minimize dead links-links to unavailable information.

3. Make use of our website to provide where needed new information and services.

3. Will your content be static, dynamic or mixture of both ?

All web user desktops worldwide can be broken up into these percentage :

1024 ′ 768 - 56%

800 ′ 600 - 22%

1280 ′ 1024 - 13%

1152 ′ 864 - 3%

When actually drawing a website design up in an Image Editor, don't forget to subtract 30px from the width layouts. This is to accommodate the scrollbar that will appear to the right when content exceeds the screen height. We will need to pay special attention to the width of our design when developing. If someone's desktop resolution is smaller than the resolution we designed to, they will have scrollbars at the bottom of their page.

The second thing to figure out is what layout we want to use. A layout is how headers, footers, contents, sidebars etc are placed on our page. Not every page has the same layout, if we may want a unique layout just for our index page, our site are consistent in their layout. There are all sorts of layouts we can go with. There are those whose width stretch to fill our screen (liquid) and those whose width is a set size (static). All these layouts use valid markup and CSS.

Finally we need to consider our content.

- Is it going to be fairly static ?
- Is there dynamic data that is used for content that comes from a database ?
- Does the site use a content manager ?

In general, we should avoid designing static height pages. We also have to aware of when to use "repeat-able background image" or colors for backgrounds with dynamic data. Sometimes we can use static images at the top or bottom. To concern about all these things we can design web site using an Image Editor.

11.6 ISSUES IN WEB SITE CREATIONS AND MAINTENANCE

A website is a collection of related web pages, images, videos or other digital assets that are addressed relative to a common Uniform Resource Locator (URL), often consisting of only the domain name or the IP address and the root path Internet Protocol based network.

11.6.1 Requirement for creating a Web Site

1. Secure a domain name.

4. Provide for user feedback through email and/or forms.

5. Measure and analysis the web site traffic.

6. Use the resources available on the web for maintaining web sites : link HTML validator, Net-mechanic, etc.

11.6.4 Issues

1. Netiquettes-accepted behavior on the Net.

2. Privacy and Confidentiality - Protect our privacy and respect confidentiality of records.

3. File Security-To secure from viruses and hackers, provision for file backup and disaster recovery.

4. Copyright and intellectual property rights.

5. Fair use of copyrighted works for educational and research purposes.

6. Reference citation of electronic resources.

7. Obtaining permission to link to web-sites before making the link.

8. Web site Evaluation- uality, accuracy, timeliness of information, design effectiveness.

9. Accessibility Design-Provisions for the physically handicapped, specially the visually challenged who used the internet.

11.6.5 Things to Remember

Here some additional things to be aware of when planning our web sites:

1. Text Size

Try not to use specific fonts or text sizes on our pages, unless it is necessary to the design of the page.

2. Colors

Don't use color-coded text to relay important parts of our message. Many people can't distinguish between colors and right miss the meaning that we intend.

3. Write for an international audience

Web is a world wide resource , open to people from many different cultures and countries. Make sure that addresses, phone numbers, prices and shipping costs include information for those outside of our country.

4. Required elements

Always include on our pages the revised date and e-mail address where people can contact us.

5. Privacy

Never include personal information about people on web pages without their consent. Get the person's permission before mentioning sensitive information.

6. Maintenance

Don't commit to updating the web site more than we can actually through on. For example, if we decide to include information about upcoming events, we are committing to updating the web site often enough to remove events as they pass and add future events.

7. Accessibility

Don't commit to updating the web site more than we can actually through on. The web is full of sites advertising events that happened in 1997 . Don't embarrass our organization by doing the same.

11.7 PUBLISHING OUR SITE

Deciding where to store our pages is one of the final steps in creating our web site plan. To make our site available to everyone on the web, we need to publish the site on a web server.

11.7.1 Maintaining Our Own Server

Setting up and maintaining our web server requires that we have the following items:

- A computer capable of handling web traffic, that is up and running 24 hours a day.
- Web server software.
- A dedicated, high speed phone line.
- An ISP that will setup with a dedicated connection to the internet.

11.7.2 Using Our ISP Server

Most ISP's include a few Megabytes of storage space free of charge with a dial-up account. For most people, storing web files on their ISP's server is the most convenient and economical way to publish a site on the web.

11.7.3 Using a Web Hosting Service

A web-hosting service is a company that rent space on their web servers. Web hosting companies usually offers multiple web servers, a fast connection to the Internet, domain hosting, frequent backups. Charges may be fixed or they may depend on how much space our web pages occupy and how many

visitors they have.

11.8 WEB HOSTING AND PUBLISHING CONCEPTS

Web site hosting refers to a service that makes our web site available to our users. In general, most web sites are intended to be viewed by anyone on the Internet, at any time. A web-hosting is a service that allows individuals and organizations to make their own web- site accessible via the World Wide Web. Web hosts are companies that provide space on a server they own or lease for use by their clients as well as providing internet.

Web Publishing provides custom web design, web development, hosting e-commerce, and e-business solutions. We work closely with our clients to produce our website structure, design and content that is affordable, functional, attractive and reflects the spirits of their business. A presence on the Web promotes a company's image and products, improves customer service, encourages new customer acquisition, and provides a vehicle for sales and information.

You can use the World Wide Web(www) to promote your products, services, and ideas for a fraction of the cost of traditional advertising and marketing. There are no printing costs, no postage costs, etc. In addition, pages can be updated instantly, so changes and corrections are painless! For no additional charge, we will register your business with major search engines and directories so that users will find your website when searching the internet.

There are two options for web hosting :

1. Hosting the web site ourself

Hosting the web site ourself means that we will need to have the right equipment, including a web server and a permanent connection to the Internet.

2. Find a hosting provider to host our website

Using a third party hosting provider allow us to concentrate on developing our web site and leave the hosting tasks upto a company who specializes in website hosting.

There are following **Types of hosting**

1. Free Web Hosting Service

Offered by different companies with limited services, sometimes supported by advertisements and limited, when compared to paid hosting.

2. Shared Web Hosting Service

Once website is placed on the some server as many other sites then all domains may share a common pool

of server resources, such as RAM and CPU.

3. Reseller Web Hosting

Resellers could function for individual domains, under any combination of these listed type of hosting, depending on who they are applicated with as a provider.

4. Virtual Dedicated Server

It divides server resources can be allocated in a way that does not directly reflect the underlying hardware. The uses may have root access to their own virtual space.

5. Dedicated Hosting Service

The user gets his/her own web server and gains full control over it. This is usually the least expensive for dedicated plans.

6. Managing Hosting Services

The user gets his / her own web server but is not allowed full control over it. The server is leased to the client.

7. Collocation Web Hosting Service

It is Similar to the dedicated web hosting service, but the user the Colo server, the hosting company provides physical space that the server takes up and takes care of the server.

8. Cloud Hosting

It allows customers powerful, scalable and reliable hosting based on clustered bod-balanced servers and utility billing.

11.9 HOSTING CONSIDERATIONS

1. Aggregate Storage Requirements

Storage can be a costly proposition, so use a just-in-time inventory approach. Essential points are :

- How much storage do you need in the next 3-5 years ?
- How much is needed now ?
- How much additional space is needed each year ?
- How many business continuance volume's and what size are needed ?

2. Environment to be Hosted

How many environments will be hosted and what type stroking, training, testing, production and development are just a few of the environment we need to host. Typically each environment has different requirements in terms of support, availability, operational tasks and access.

3. Backup/Restore Services and Disaster Recovery

Define what is expected to be backed up, how often and when. How quickly do you expect a file to be restored from tape ? What happens when this is a disaster and the data center is completely unusable ?

4. Service Level Agreements Monitoring and Reporting

Key performance indicators are great, but only if they show what is important to you. What elements are to be monitored ? What is the interval for monitoring and the threshold for those items being monitored ? Are specific application components to be monitored ? How are reports to be structured and provided ?

5. Root Access

Who needs root access ? Typically, system root access is not given to anyone outside the data center staff.

6. Operational Tasks

Installation, configuration, steady state operations, tuning and database support tasks should be defined as specific number of support hours each week /month / year that can be used in any way needed.

7. Licensing

Define who is responsible for acquiring software licenses and maintenance agreements, as well as show is the party responsible for paying for these licenses. Licensing costs are a significant component in any application hosting arrangement and it is worth researching any opportunity to take advantage.

8. Testing

Ensuring our deployment operates as intended is critical to going live successfully. Define what types of tests to be performed and who is to perform them as part of the hosting requirements.

9. Help Desk

Define clearly how the help desk or support system is to operate for this application. Will there be a super user model with only specific uses permitted to call the help desk, or can any user call in to report a problem ? Agree on a regular escalation and notification matrix update process and review cycle.

10. Contracts

Contracts defines more that just what goods and services are delivered, and how much they cost. They also define how different organizations interface with each other. This can prevent misunderstandings and provide a continuous improvements.

11.10 SUMMARY

This unit has introduced you the basic features of WYSIWYG design tools. We have learn how to create and publish web sites. WYSIWYG implies a user interface that allows the user to view something very similar to the end result while the document is being created. The WYSIWYG editor hides the details of

the HTML code from the user. By using Front Page, you can easily create and edit web pages with the WYSIWYG (what You See Is What You Get) HTML editor. It also discuss the features of Front Page. The other designing tool is Macromedia Dreanweaver allows users to preview websites in locally installed web browsers. This unit also introduced the other HTML editors like : Text editors, Source editors, Word processors, WYSIWYG editors. Image editor provide the facilities of altering images whether they be digital photographs, traditional analog photographs etc. The unit also covers the issues in web site creation and maintenance and also discuss how to create and maintain websites and how to host the web site. Type of hosting discuss the eight type of hosting. Hosting considerations are the requirements that are needed to host the website. There top 10 hosting considerations that are discuss in this unit.

11.11 GLOSSARY

Browser: A software application used to display Web pages. Microsoft Internet Explorer, Netscape Navigator, Mozilla are examples

Host Server or Web Site Hosting: A computer that stores the files that make up your web site

URL: Uniform Resource Locator, also known as a web address.

Web Server: A computer which delivers Web pages.

Web Site: A collection of documents and files displayed on the Web

WYSIWYG , is an acronym for What You See Is What You Get. The term is used in computing to describe a system in which content displayed during editing appears very similar to the final output, which might be a printed document, web page, slide presentation or even the lighting for a theatrical .

Adobe Dreamweaver (formerly Macromedia Dreamweaver) is a web development application originally created by Macromedia, and is now developed by Adobe Systems, which acquired Macromedia in 2005

image editor:In computer graphics, graphics software or image editing software is a program or collection of programs that enable a person to manipulate visual images on a computer.

11.12 FURTHER READINGS

- Official Microsoft® FrontPage® 2000 Book,W. Brett Polonsky and Kerry A. Lehto
- Microsoft Office FrontPage 2003 Inside Out by Jim Buyens
- Microsoft® Office FrontPage® 2003: the complete reference By Martin S. Matthews, Carole Boggs Matthews, Erik B. Poulsen
- Web programming Unleased by Bob Breedlove et.al, Sams.net publishing
- Web Graphics Bible by Ron Wodaski, Comdex Computer Publishing.
- Internet Millenium Edition, Complete Reference by Young, TMH.

11.13 ANSWERS TO SELF LEARNING EXERCISES

1.In Front Page 2003 and above click the Code button at the bottom left hand of your screen.

In Front Page 98 click the HTML tab on the bottom left hand side of your screen.In Front Page 97 click View and then click HTML

2.Select the cell first by going up to table and then clicking on Select Cell. Once the cell has become highlighted, press your delete key on your keyboard. Note that this method deletes the cell in Front Page 97; in 98, it only deletes the contents of the cells

3.Select **File>Save,** In the **Save As** dialog, select the **my_name_site** folder to save the file, In the File text box, type **my_name_home.html**, Click **Save**

4.Select **Window>Layers** – this will open the Layers palette, Make sure the **Prevent Overlaps** tick box is selected, Select **Insert>Layer** – a layer is added to the document, Move the pointer to the document window, the pointer changes into a drawing tool , In the space below the first layer, drag the pointer to draw a new layer, Repeat steps to draw additional layers, To complete this exercise create layers on your home page, Click the **Draw layer** button in the **Object Palette** panel

5.It is good practice that you make a habit of naming your elements in your document. Later, when you need to reference or select a particular image, layer, or some other document element, you'll be able to easily identify it.. Select the image you have just inserted, In the Property Inspector click in the Image text box, Type the name of the image – (lowercase) ,Do the same for any other images you have inserted, As you can see when the image is selected you can gain extra information about your image

11.14 UNIT-END QUESTIONS

Q.1 What is WYSIWYG editor ?

Q.2 What are the features of MS-Front Page 2000 ?

Q.3 What are the elements of Dreamweaver ?

Q.4 How to publish the site using Dreamweaver ?

Q.5 What we can do with images using Image Editor ?

Q.6 Write the steps to create a web site ?

Q.7 What are the issues in web-site creation ?

Q.8 What is the web-hosting ? Discuss the type of hosting.

Q.9 What are the hosting considerations ?

Q.10 Briefly describe the popular HTML editors ?

***

12

UNIT – XII

FRONT PAGE

STRUCTURE OF THE UNIT

12.0 OBJECTIVE

After completing this unit you will learn

- What is FrontPage
- Text and Image
- DHTML animation
- Hyperlinks and Tables
- Preview in browser
- Browser Compatibility
- View, Organize, Expand Site
- Style, Forms, Data and Reports

12.1 INTRODUCTION

To create any web site from scratch any text editor can be used but it more difficult and time consuming to create web pages using text editors. Front page is the solution and you can create web site using front page

more easily which require less time. Web site created using FrontPage will consists following features.

- Quick and easy design.
- No need of deep understanding of HTML.
- Produce attractive and informative pages that work together to create well designed full functional web site.
- Less effort required.
- No experience required.

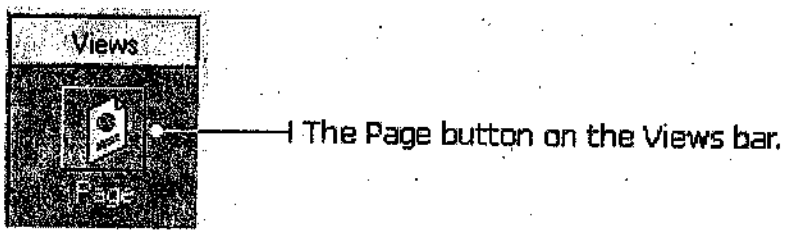
12.2 TEXT

Editing an HTML document in Frontpage looks suspiciously similar to word, So if you are already familiar with Microsoftsoft Word you won't have any trouble getting started in FrontPage

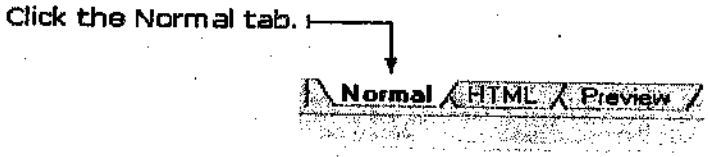
You can have multiple documents open at same time, but only one will active which will receive text and all commands. Front Page automatically wrap text. Windows of all opened documents stacked one on top of other you can't reduce their size or minimize them.

To add text to your Web page:

1) If you are not in Page View, click the Page button on the Views bar.



2) Click the Normal tab at the bottom of the page.



3) Insert the cursor into the blank page.

4) Type your text.

Format text

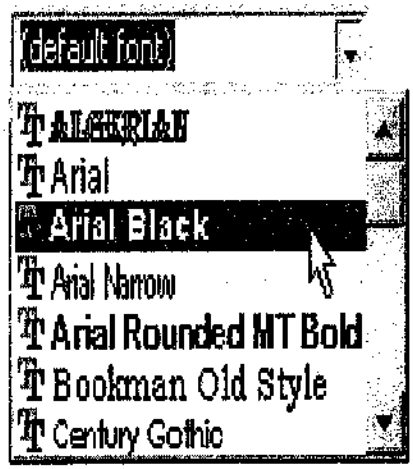
Its browser that determine how page is displayed. you can decide formatting of a page as you want but one's it's on web all design work may be lost since browser can't support features you have included.

Once you've put text on your page, you can change its style, color, size, and more such as text bold, italic, underlined, left justified or right justified.

To change your font style:

1) Select the text.

2) Click the arrow button next to the Font display. A drop-down list appears with various font styles.



What you see is what you get!

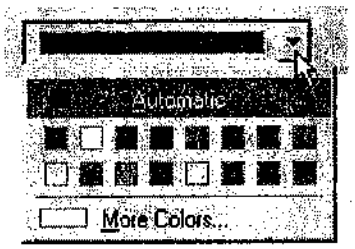
3) Click the font style of your choice.

To change your text color:

1) Select the text.

2) Click the arrow button next to the Font Color button. A Color menu appears.

3) Click the color of your choice from the Standard Color palette. Or, select from a larger color palette by clicking More Colors.

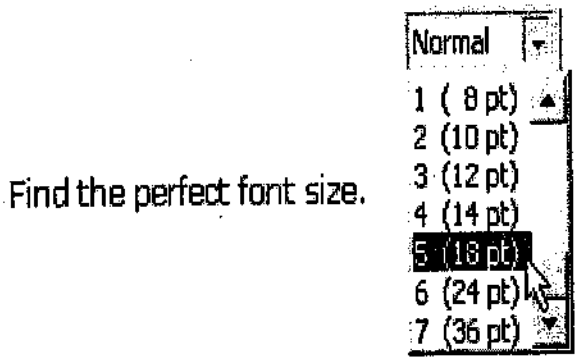


Choose a color for your font.

To change your font size:

1) Select the text.

2) Click the arrow button next to the Font Size display. A drop-down list appears with various font sizes.



3) Click the font size of your choice.

To undo your most recent action, click the Undo button on the Standard toolbar. This feature gives you a chance to experiment - and Undo your changes with ease.

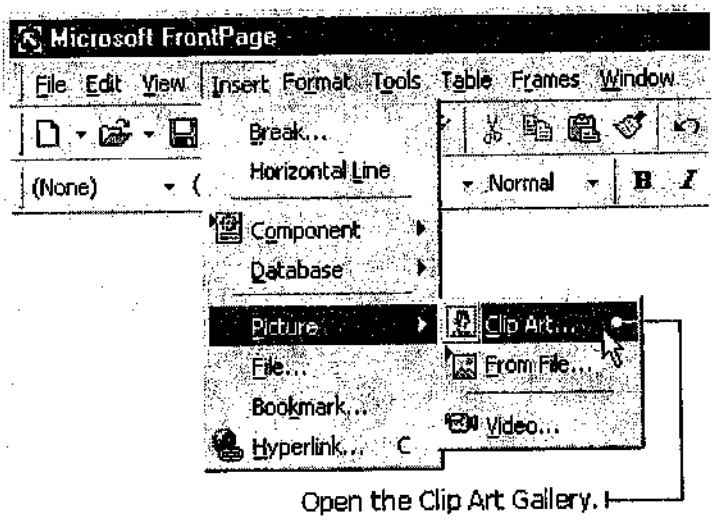
12.3 IMAGE

Using FrontPage you can bring an image into page, position it and edit it. A file format of image is how information is saved in a file not file's content. World Wide Web widely accept GIF and JPEG format as a standard format which are compressed images so that saved image is smaller than in other non compressed file format, because small files take less time to transfer on web.

To add a clip art image to your Web site:

1) Place the cursor on the page.

2) Click Insert on the Menu bar and select Picture, then Clip Art. The Clip Art Gallery dialog box appears.



3) Click the Pictures tab. A group of picture categories appears.

4) Click the category of your choice. A group of pictures appears.

5) Click the picture you want to add. A drop-down list of buttons appears.

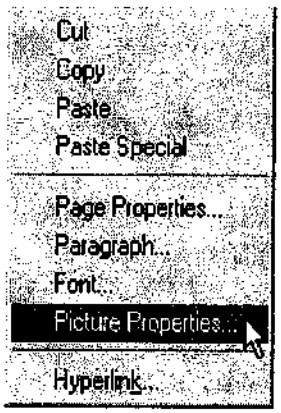
6) Click the Insert Clip button.

Some people shut off their image display when they visit Web sites - which means they see only text and no pictures. Not everyone wants to see pictures because it takes longer to download a page that contains them. For these visitors, you can provide alternative text in place of the images - like a title that tells them what the picture is.

Alternative text also makes your Web site accessible to the blind or visually impaired. These visitors use screen readers that will look for the alternative text and describe the images to them.

To add alternative text to an image:

1) Place the pointer on the image and right-click your mouse button. A pop-up menu appears.

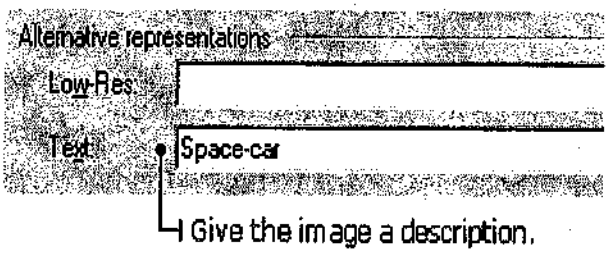


Select Picture Properties from the pop-up menu.

2) Click on Picture Properties. The Picture Properties dialog box appears.

3) Click the General tab.

4) Type the alternative text into the Alternative Representations text box.



5) Click OK in the Picture Properties dialog box.

Add Any Image

Here are a few types of digital images you can add to your Web page:

· a picture from the Internet saved on your hard drive

· a scanned photo or drawing

· a picture taken with a digital camera

· an image from a CD-ROM.

To add your own image to your Web page:

1) Place the cursor on the page.

2) Click the Insert Picture from File button on the Standard toolbar. The Picture dialog box appears.

Click the Insert Picture from File button. 

2) Click the Select a file on your computer button. The Select Files dialog box appears.

Click this button in the Picture dialog box. 

4) Locate the image file on your computer, then select it. The file name appears in the File name text box.

5) Click OK in the Select File dialog box.

6) Click OK in the Picture dialog box.

Move Image

To move an image from one location to another:

1) Click the image to select it.

3) Click the Cut button on the Standard toolbar. The image disappears.

Click the Cut button. 

3) Place the cursor where you want the image to go. Note: You can place the image on the same page you cut it from or on a different one.

4) Click the Paste button on the Standard toolbar. The image reappears in its new location.

Use the Paste button to make the image reappear. 

You can also use the 'drag and drop' method to move an image to a different spot on the same Web page. Just click on the image and hold down your mouse button. Drag the image to a different spot, then release your mouse button to drop the image into place.

Transparent Images

You can take out the background of an image saved in .GIF format. This is a good option when you want to blend an object into your Web page background - but it only works with .GIF pictures.

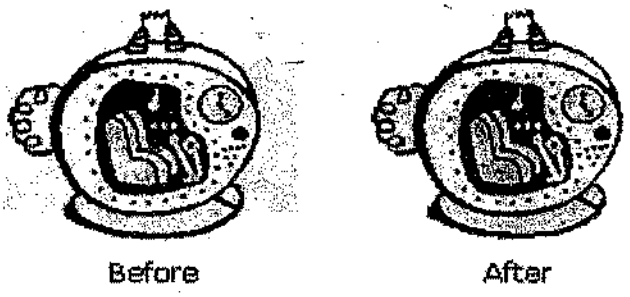
To give an image a transparent background:

1) Select the .GIF picture by clicking on it. Note: You cannot make JPEG quality pictures into transparent images.

2) Click the Set Transparent Color button on the Image toolbar. The cursor will turn into a pencil icon.

Select this button from the Image toolbar. 

3) Position the pencil icon over the color you want to make transparent (invisible). Click the color. The color becomes transparent.



Interlaced images

You can "interlace" your GIF images to create a special visual effect. With an interlaced image, your Web site visitors will see pictures fade into view. The image looks blurry at first, and then it comes gradually into focus while the download is completed. Without interlacing, the picture slowly fills in line-by-line from the top to the bottom.

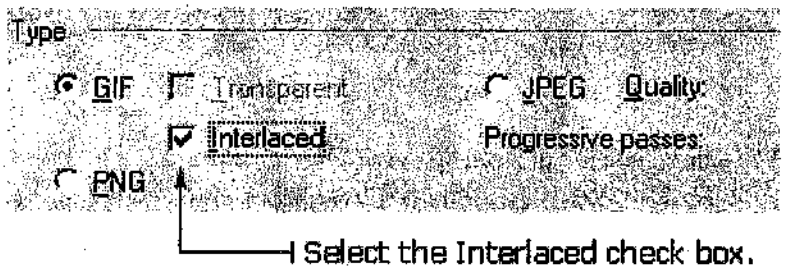
To interlace an image:

1) Place the pointer on the image and right-click your mouse button. A pop-up menu appears.

2) Click on Picture Properties. The Picture Properties dialog box appears.

3) Click the General tab.

4) Click the Interlaced check box.



5) Click OK in the Picture Properties dialog box

Cropped images

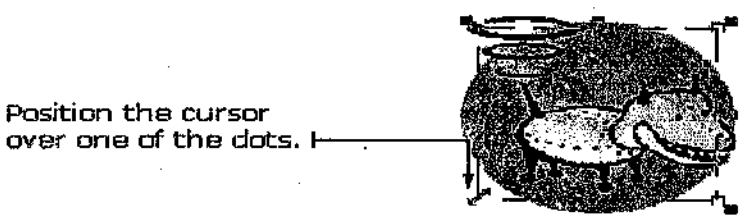
To "crop" an image means to cut off part of it.

To crop an image:

1) Select the image by clicking on it.

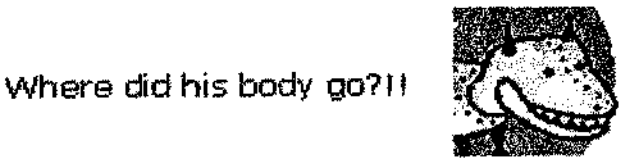
2) Click the Crop button on the Image toolbar. A crop box with eight small dots appears on top of the image.

3) Position your cursor over one of the dots. The cursor turns into a two-way arrow.



4) Hold down your mouse button and drag the arrow to resize the crop box.

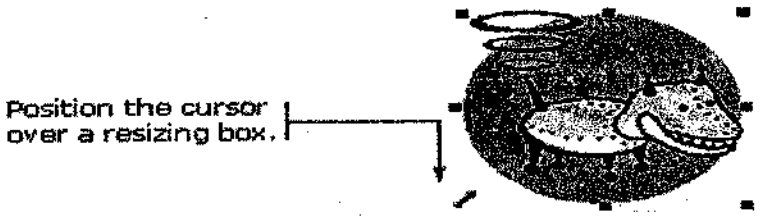
5) Press the Enter key on your keyboard.



If an image is too large, you can resize it. Resizing an image is different from cropping because you will not be cutting off a part of it.

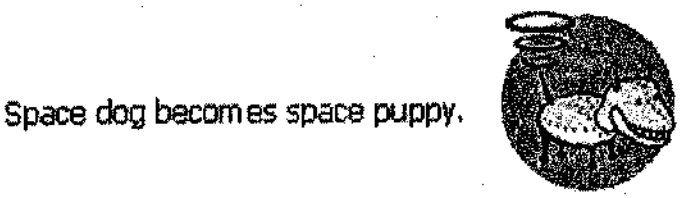
1) Select the image by clicking on it. Eight small dots appear at the sides and corners of the image.

2) Position your cursor over one of the dots. The cursor turns into a two-way arrow.



3) Hold down your mouse button and drag the arrow to change the size of the image.

4) Let go of the mouse button when the image is the size you want it to be.



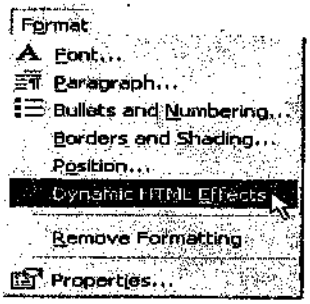
12.4 DHTML ANIMATION

Dynamic HTML is a way to add movement to a page without compromising load speed. Animation effects can make a Web page more lively. You can animate text or images using Dynamic HTML (DHTML) - which creates a special effect that looks like the words or images are bouncing, slipping, or spiraling onto your Web page. A little animation goes a long way! It's best to animate only one object per page - so your Web site visitors aren't too distracted.

To animate text or images using DHTML:

1) Select the text or image you want to animate.

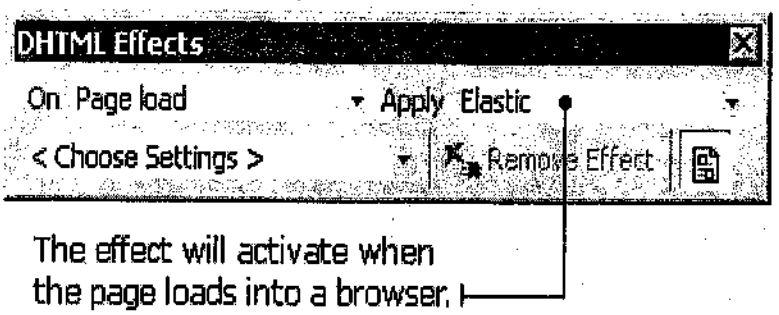
2) Click Format on the Menu bar, then click Dynamic HTML Effects. The DHTML Effects toolbar appears.



Open the DHTML Effects toolbar.

3) Select Page Load in the On box. This means the object will be animated when your Web site visitors load the page onto their computers.

4) Select Elastic in the Apply box. This means the object will have a special elastic effect.



5) Click the X button to close the DHTML Effects toolbar.

12.5 HYPERLINK

Hyperlink is a connection from a page on WWW to another page, image, e-mail address or a file at another location on web. Every hyperlink consists of

Hyperlink – text or image in page that define as hyperlink; clicking hyperlink penes link's target.

Target – the page or file that open when user clicks on hyperlink; target is usually defined by its URL.

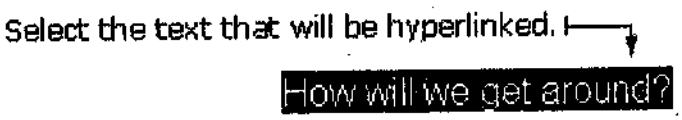
In FrontPage you can change hyperlink or target components and also can disconnect hyperlink while leaving text or image.

Hyperlinks are like springboards that send you:

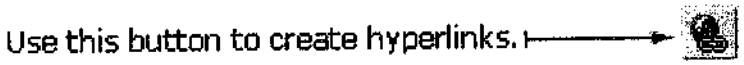
- to another location on the same Web page (great for really long scrolling pages!)
- to a different page in your site
- to a different Web site.

To make text into a hyperlink:

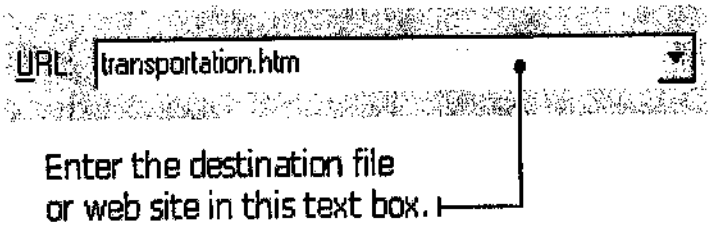
1) Select the text.



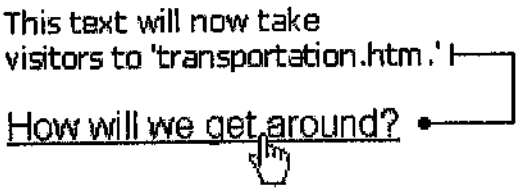
2) Click the Hyperlink button on the Standard toolbar. The Create Hyperlink dialog box appears.



3) Find and click the file name of the page you want to link to. The file name appears in the URL text box. If you are linking to another Web site, type the URL (Web address) into the URL text box.



4) Click OK in the Create Hyperlink dialog box.



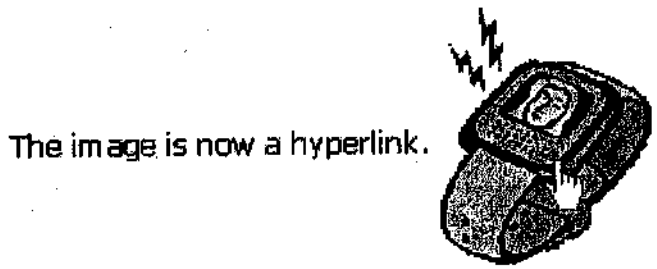
To make an image into a hyperlink:

1) Select the picture by clicking on it.

2) Click the Hyperlink button on the Standard toolbar. The Create Hyperlink dialog box appears.

3) Find and click the file name of the page you want to link to. The file name appears in the URL box.

4) Click OK in the Create Hyperlink dialog box.



e-mail link

You can use a hyperlink to invite your Web site visitors to send you e-mail. When your visitors click this special hyperlink, their computer will open an e-mail window where they can compose their message to you.

To create an e-mail hyperlink:

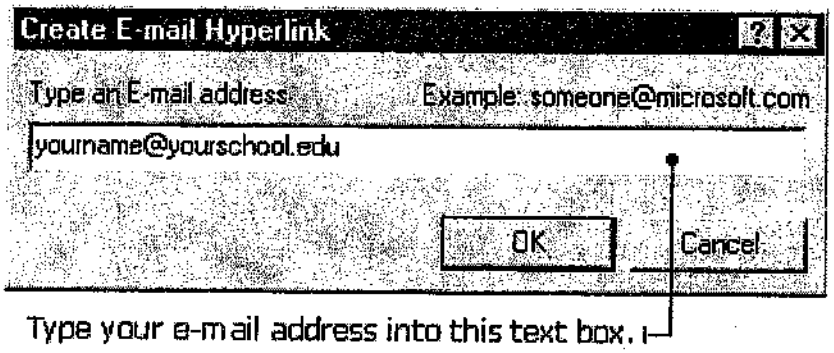
1) Select the text or image.

2) Click the Hyperlink button on the Standard toolbar. The Create Hyperlink dialog box appears.

3) Click the Make a Hyperlink that Sends E-mail button.

4) Type your e-mail address into the Type an E-mail Address text box, then click OK.

5) Click OK in the Create Hyperlink dialog box.



12.6 TABLES

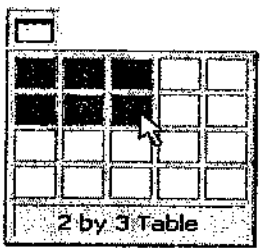
Tables are handy when you need to display information in columns and rows. Tables are powerful and versatile tools in web designer's tool kits.

To create a table:

1) Place the cursor on the page.

2) Click the Insert Table button on the Standard toolbar. A drop-down grid appears.

3) Move the pointer to select the number of columns and rows you want, then click once to accept the setting. The new table appears on the page.



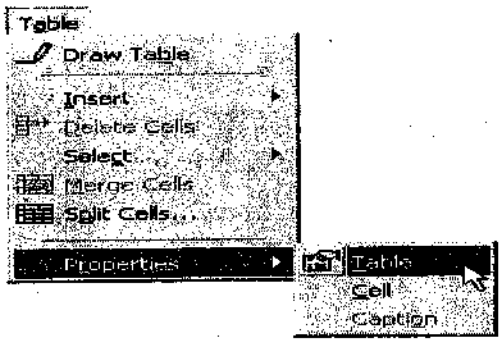
Select the number of columns and rows.

Format Table

To adjust the width, color, and alignment of your table's borders:

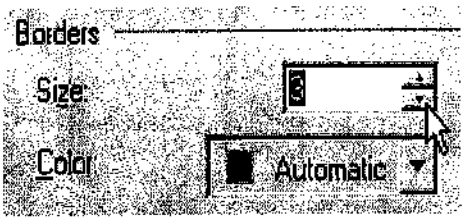
1) Place the cursor in the table.

2) Click Table on the Menu bar and select Properties, then Table. The Table Properties dialog box appears.



Use this command to open the Table Properties dialog box.

3) Adjust border width by clicking the spin controls on the Border Size box. Note: To make the Borders invisible, set the spin control to zero.

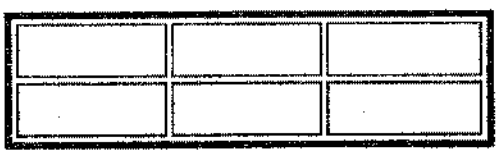


Adjust the width of the borders.

4) Adjust border color by clicking Border Color and choosing your color from the drop-down color box.

5) Align table on your Web page by selecting an option from the Alignment drop-down box.

6) Click OK on the Table Properties dialog box.



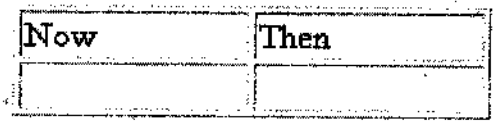
Create a wild-looking table.

Add Text and Images

To add text to a table:

1) Place the cursor into the cell you where you want the text.

2) Type your text.



Type text directly into a table cell.

TIP: A "cell" is one block in a table.

To add images to a table:

1) Place the cursor inside the cell where you want the image.

2) Click the Insert Picture From File button on the Image toolbar. The Picture dialog box appears.

Click the Insert Picture from File button. 

3) Find and click the name of the image file. The file name will appear in the URL text box.

4) Click OK on the Picture dialog box.

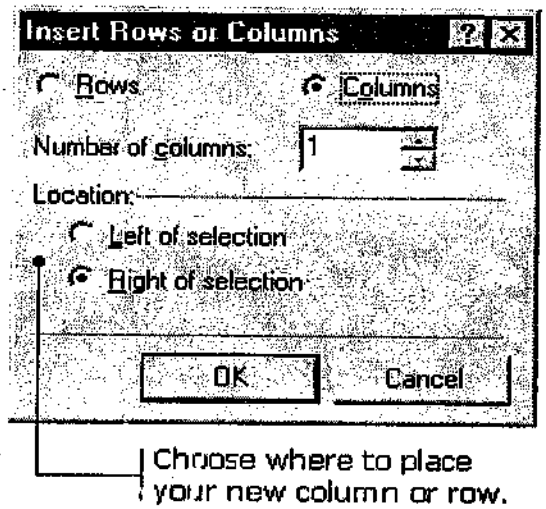
Adjust the width of the borders.

To insert additional columns or rows into a table:

1) Place the cursor in the table in a cell that is next to where you want to insert the column or row.

2) Click Table on the Menu bar and select Insert, then Row or Columns. The Insert Rows or Columns dialog box appears.

3) To add a row, click Rows, and then click Above selection or Below selection. To add a column, click Column, and then click Left of Selection or Right of Selection.



4) Click the Number of rows / columns spin controls to enter the number of rows or columns you want to add.

5) Click OK on the Insert Rows or Columns dialog box.

12.7 PREVIEW IN BROWSER

Ultimate outcome for a page is viewed within web browser. FrontPage show page as that will appear within browser but it can never offer final view of a page. This is just because of that HTML code can be interpreted differently in different browser.

The only way to be sure how your web looks is to view it within browser by clicking preview tab at the bottom of the editing pane.

To preview your Web site in your browser:

1) Click the Preview in Browser button on the Standard toolbar. Your computer opens a browser with your web page in it.

12.8 BROWSER COMPATIBILITY

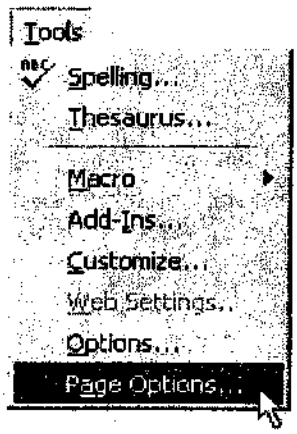
Not everyone uses the same Internet browser. Some people use Microsoft Internet Explorer, while others use Netscape Navigator. Some people have the latest versions of the browser programs, while others have older versions.

FrontPage 2000 can add a lot of cool features to a Web page - but they don't work on all browsers. Sometimes, Web pages that include certain features will not even appear in some browser versions. It's a good idea to decide - right from the start - which version of which browser you are developing your Web site for. Once you make your decision, FrontPage 2000 will only include features that work with the browser you have chosen.

It's easy to check which version browser you are using. Simply open your browser, then select About from the Help menu.

To choose which browser version to design your Web page for:

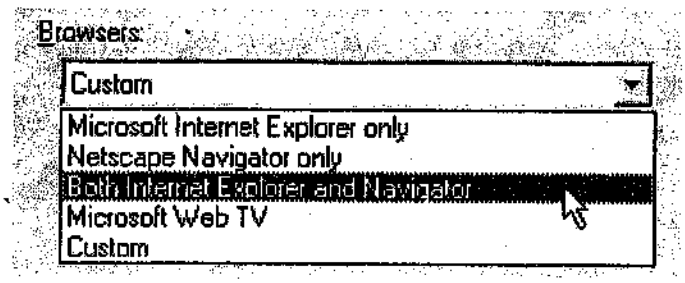
1) Click Tools on the Menu bar and select Page Options. The Page Options dialog box appears.



Open the Page Options dialog box.

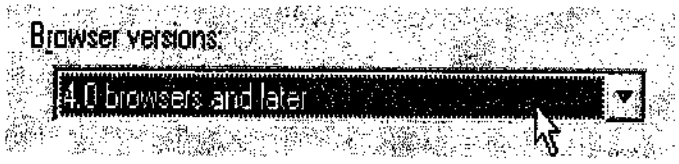
2) Click the Compatibility tab.

3) Click the Browsers drop-down box and select a browser name.



Choose a browser.

4) Click the Browser Versions drop-down box and select a version. You can see that certain features become disabled when you choose different versions.



Choose a minimum version.

5) Click OK on the Page Options dialog box.

12.9 VIEW, ORGANIZE AND EXPAND SITE

View Site

There are six different ways to look at your Web site in FrontPage 2000. You can change views by using the View bar.

These are the six views on the Views bar.

The six different Views are:

1) Page view - where you create and edit individual pages.

2) Folders view - where you see all the pages that make up your Web site. You also see the names of all the graphics and files on each page.

3) Reports view - where you test the links between all the pages, graphics, and files in your Web. You can see reports that list slow or unlinked pages, recently added files, broken hyperlinks, and more.

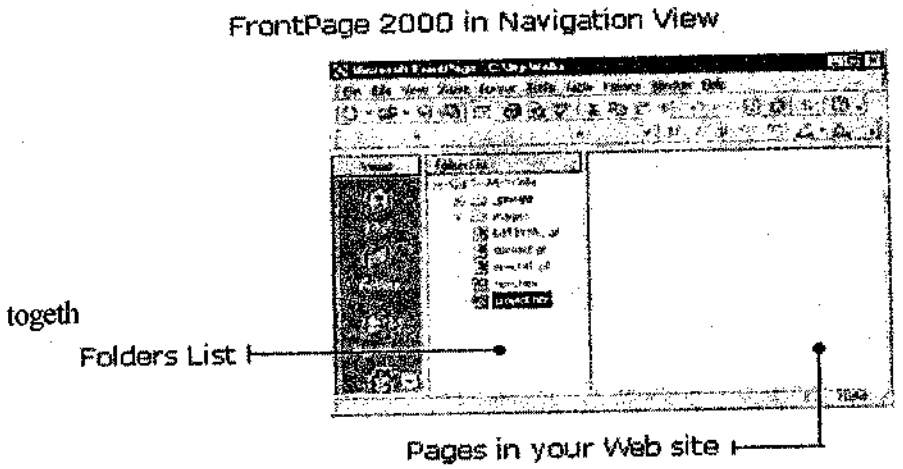
4) Navigation view - where you look at how visitors will navigate your Web site. You can create navigation bars and zoom in to work on particular parts of the site.

5) Hyperlinks view - where you see all the items that link together in your Web site. In this view, you can see if any links are broken.

6) Tasks view - where you list tasks that need doing, prioritize them, and keep track of who is going to do them.

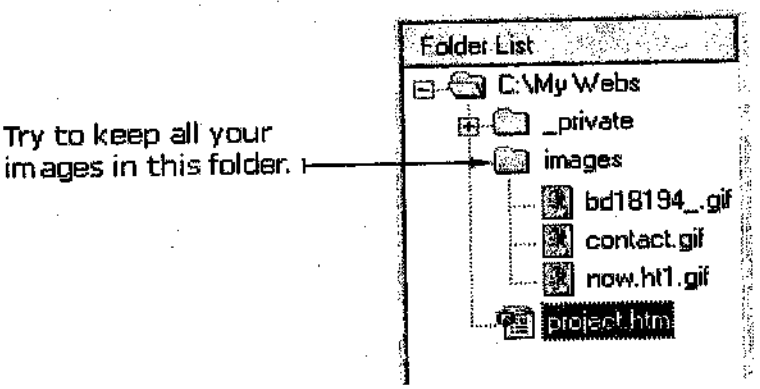
Organize site

Navigation View shows how the pages of your Web site are linked together. The Navigation View window is divided into two sections. On the left is the Folders List, which lists all folders and files. On the right are boxes that represent the pages of your Web site and how they are linked



A private folder is used to hide certain documents from your Web site visitor. This is where you keep information on your Web site that you don't want anyone else to see - like private database information. Whenever you create a new Web, FrontPage 2000 automatically includes a private folder.

FrontPage 2000 also includes an image folder with every new Web. It's a good idea to save all your images in this file to help you stay organized. This way, you will always know where your images are.

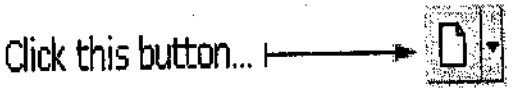


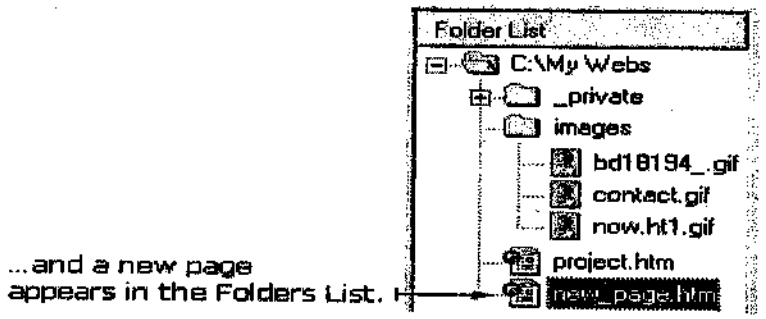
Expand Site

When you're in Navigation View, you can double-click on a page box to open it in Page View - where you create and edit individual pages.

To add a new page to the site in Navigation View:

1) Click the New Page button on the Standard toolbar. The file name new_page_1.htm appears on the Folders List and a New Page 1 box appears in the right window.

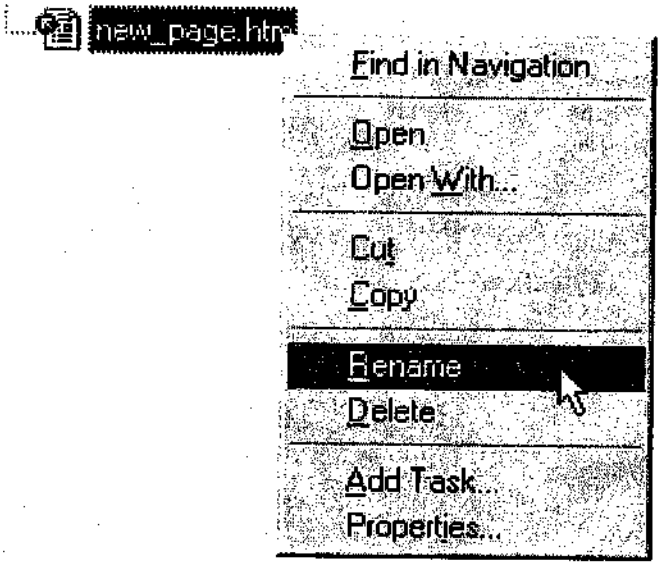




To rename the new file:

1) Right-click the new_page_1.htm text in the Folder list. A pop-up menu appears.

2) Click Rename in the pop-up menu.



Select Rename from the menu.

3) Type in a new name, leaving the .htm extension on the end of the file. For example: new_name.htm.

4) Press the Enter key.

12.10 STYLE

A style is a set of formatting characteristics identified by a unique name. Styles enable you to quickly format a whole group of page elements in one simple task.

You can apply styles to most page elements in Microsoft FrontPage, including text (individual characters or entire paragraphs), graphics, and tables.

Creating the Style Sheet Using the FrontPage Editor

1. Start the FrontPage program and open an existing web.

2. Choose Show FrontPage Editor from the Tools menu or click on the FrontPage Editor icon on the tool bar.

3. Select New Page from the File menu or click the New button on the tool bar.

4. Choose Page Properties from the File menu.

5. Title the page "Web Style Sheet" to differentiate it from the others.

6. Use the Background tab to specify the background properties you want for your Web site, including background colors or page text.

7. Change the margins, if necessary, using the Margins tab. Click OK.

8. Choose Save As from the File menu. Save the file as "webstyle.htm" and click OK.

9. Follow the directions in the dialog boxes to save any images or attachments to the web.

Applying the Style Sheet to Web Pages

1. Open the FrontPage Editor and create a new Web page, or open an existing Web page.

2. Choose Page Properties from the File menu and select the Get Background and Colors From Page radio button.

3. Click the Browse button and locate the style sheet (webstyle.htm). Click OK. The settings you created on the style sheet page are applied to the new page.

4. Save the page when finished.

5. Preview the page in a Web browser by choosing Preview in Browser from the File menu. From the dialog box, choose which browser to use and what settings.

12.11 FORMS

You can collect information from your Web site visitors by using "forms." These special tools allow you to conduct surveys and tests, collect names and addresses, and even sell products over the Internet.

Your form will only work after your Web site is on the Internet. It does not work when your Web site documents are on your own computer only.

A form lets users of your site enter information and send it to your server, moving from mere surfing into a two-way communication mode. With forms, you can find out who is visiting your site what they liked to see improved, and why they visited – user information that's impossible to acquire unless you ask. Behind a form is a form handler used to collect information from the form and save it in your web.

Some of FrontPage's form fields with their purpose is given below-

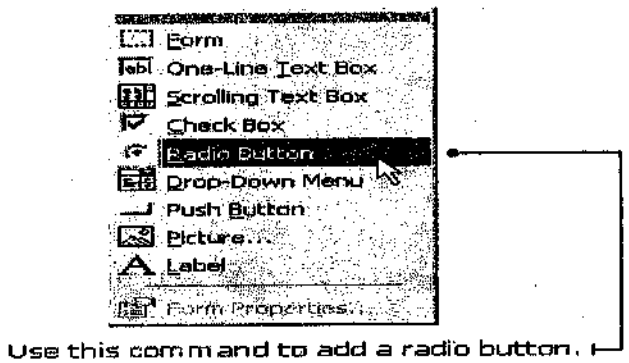
Text Box	-	to enter single line text
Check Box	-	To select more than one choice from a group of choices.
Radio Button	-	For mutually exclusive selection.
Drop Down Menu	-	user can select one or more items from drop down list.
Push Button	-	Execute an action.

To add radio buttons:

Radio buttons are useful when you want your visitor to choose only one option from a list.

1) Type a question. For example: *Which word means "a period of 1,000 years"?* Then press the Enter key.

2) Click Insert on the Menu bar and choose Form, then Radio Button. A radio button appears on your page along with two larger buttons that say "Submit" and "Reset." Your cursor is between the radio button and the Submit button.



3) Type your text for Option 1. For example: *century*. Then press the Enter key.

Label the radio button. ⟶ century

4) Click Insert on the Menu bar and choose Form, then Radio Button. A second radio button appears.

5) Type your text for Option 2. For example: *millennium*. Then press the Enter key.

6) Repeat Step 4 with the text for Option 3. Then press the Enter key.

Check Box

You can use check boxes when you want someone to select more than one option from a list.

When you add other form elements - like text boxes and check boxes - make sure the "Submit" and "Reset" buttons are at the end of the form. All other questions and form buttons must go above the "Submit" and "Reset" buttons. Your Web site visitors use these buttons to send their information to you over the Internet.

To add a check box:

1) Click Insert on the Menu bar and choose Form, then Check Box. A check box appears on the page.

2) Type your text. For example: *basketball*.

Label the check box. ⟶ basketball

3) Press the Enter key.

Text Box

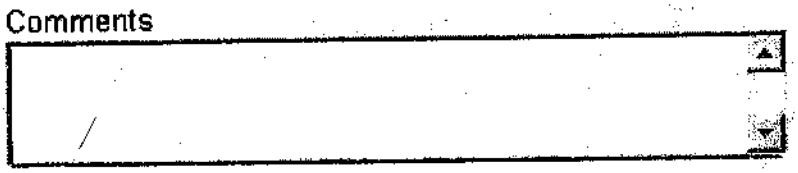
A one-line text box provides a place for your visitor to enter one line of text. To resize a one-line text box or scrolling text box, click on the box. Resizing dots appear on the corners and edges of the box. Position the cursor over one of the resizing dots until it turns into a two-way arrow. Then click and drag your mouse to resize the text box.

To add a one-line text box:

1) Type a label for the text box.

2) Click Insert on the Menu bar and choose Form, then One-Line Text Box. A one-line text box appears on the page.

A scrolling text box provides a place for your visitors to enter a comment or message.



To add a scrolling text box:

1) Type a label for the text box. For example: *Comments.*

2) Click Insert on the Menu bar and choose Form, then Scrolling Text Box. A scrolling text box appears on the page.

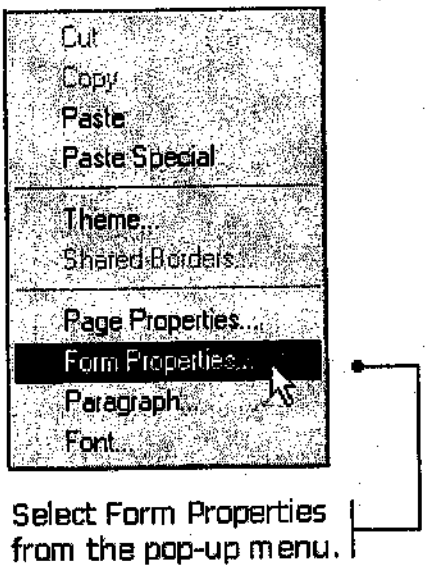
12.12 DATA

Send to e-mail

After your visitors fill out your online form, they send it to you over the Internet. You can choose how to have it delivered. One option is to have it sent to you by e-mail. Every time a visitor completes a form, the information in the form is delivered to you in an e-mail message.

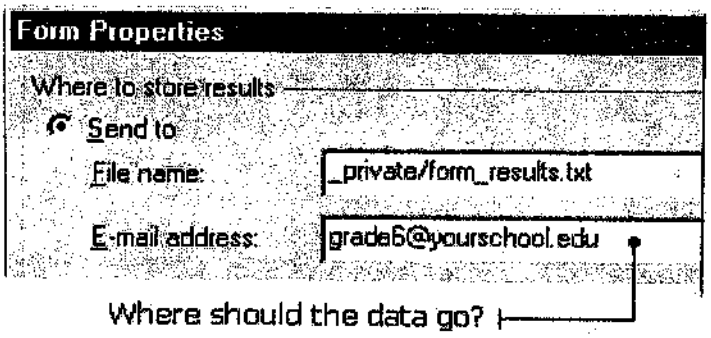
1) Right-click over the form in your Web page. A pop-up menu appears.

2) Click Form Properties. The Form Properties dialog box appears.



3) Click the Send To radio button.

4) Type your e-mail address into the E-mail address text box.



5) Click OK on the Form Properties dialog box.

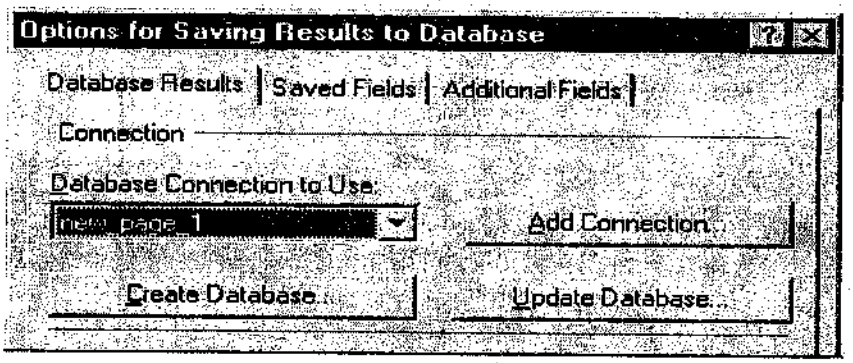
Send to database

1) Right-click over the form. A short-cut box appears.

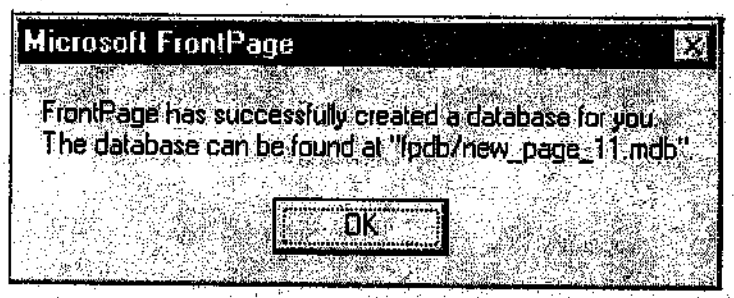
2) Click Form Properties. The Form Properties dialog box appears.

3) Click the Send to Database radio button.

4) Click the Options button. The Options for Saving Results to Database dialog box appears.



5) Click the Create Database button. FrontPage creates a mini database for you. A message appears, telling you where you will find the database when you want to look at results from your form.



Message that appears, telling you where to find the database.

6) Click OK on the Options for Saving Results to Database dialog box.

7) Click OK on the Form Properties dialog box.

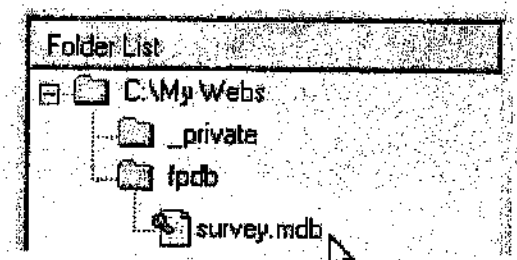
View data base

After your visitors have submitted data to your database, you will probably want some way to view the data. There are two ways you can do this. You can view the data directly by opening the database in Microsoft Access 2000. Or, you can set-up FrontPage to present the database in a Web page.

1) Click the Folders button on the View bar.

2) In the Folder list, click the folder marked A list of database files appears.

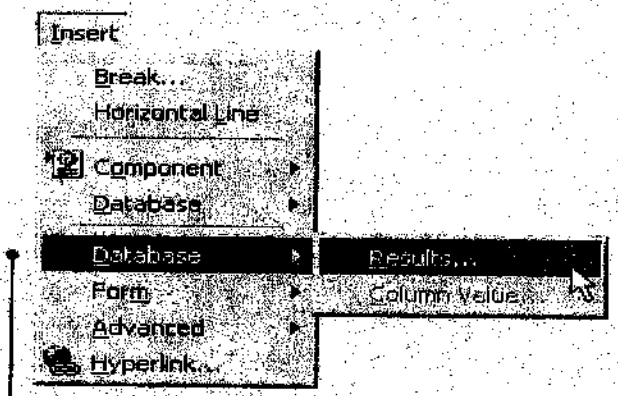
3) Double-click your database file in the Contents window. The file should have an .mdb extension. If Access 2000 is already installed on your computer, Access opens the specified database.



Double-click the database file in the fpdb folder.

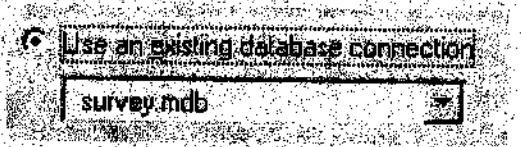
To present the database in a Web page:

1) Click Insert on the Menu bar, and choose Database, then Results. The Database Results Wizard dialog box appears.



Activate the Database Results Wizard.

2) Click Use An Existing Database Connection. The name of your database (created in the previous section of the tutorial) appears in the text box under Use An Existing Database Connection.

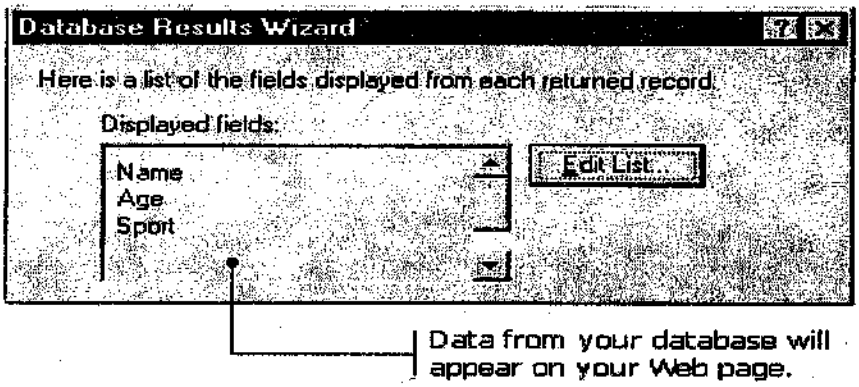


Insert an existing database into a Web page.

3) Click Next.

4) Click the Record Source radio button, and select Results from the drop-down list.

5) Click Next. A list of fields displayed from each returned record appears. (Each of these fields represents the questions you asked on your form.)



6) Click Next.

7) Select "Table - one record per row" from the drop-down list, and click on all three check boxes below.

8) Click Next.

9) Click Display all Records together, then click Finish.

Name	Age	Sport
Michael	14	Hockey
Susan	12	Volleyball

This table will display data from your database.

12.13 REPORTS

Report view of FrontPage lets you see the details of your web in plain and simple Columnar reports. Report covers wide range of web related statistics site summary report which will give following information-

- Total number of files in your web
- number of image files.
- number of files that are target of hyperlink in your home page
- the number of files that are not reachable via links in your home page.
- The number of hyperlinks in entire web.
- The number of both internal and external links.
- The number of links no longer valid.
- the number of pages slow to download.

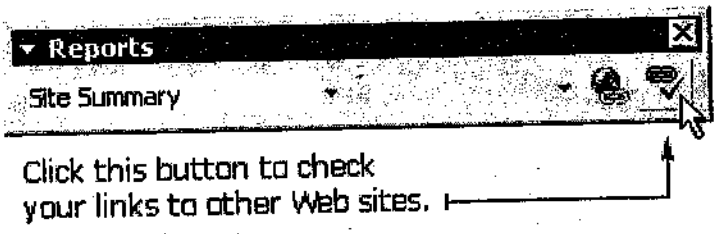
Report broken links

You'll need to make sure all your hyperlinks work before your Web site goes live on the Internet.

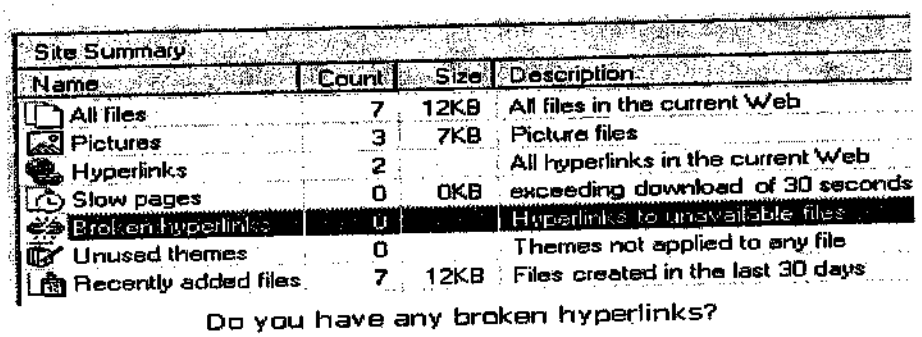
To check and fix broken links:

1) Click the Reports button on the View Toolbar. The Site Summary page appears.

2) On the Reports toolbar, click the Verify Hyperlinks button. FrontPage checks hyperlinks that you have made to other Web sites. (Note: FrontPage may prompt you to connect to the Internet so it can verify outside links.)



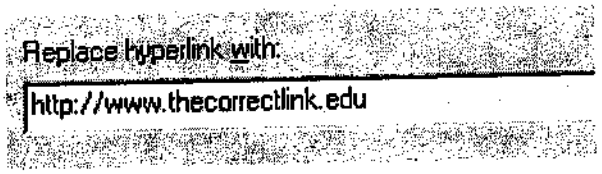
3) In the Name column of the Site Summary table, locate the Broken hyperlinks row. If you have broken links, a number appears in the Count column. If you don't have any broken links, the number "0" appears in the Count column.



4) Double-click the Broken hyperlink row. The Broken Hyperlinks page appears.

5) To fix a broken link, double-click the broken hyperlink. The Edit Hyperlink dialog box appears.

6) Type the correct hyperlink into the Replace Hyperlink With box. You can also click the Browse box and select a file.



7) Click the Change in All Pages radio button.

8) Click the Replace button.

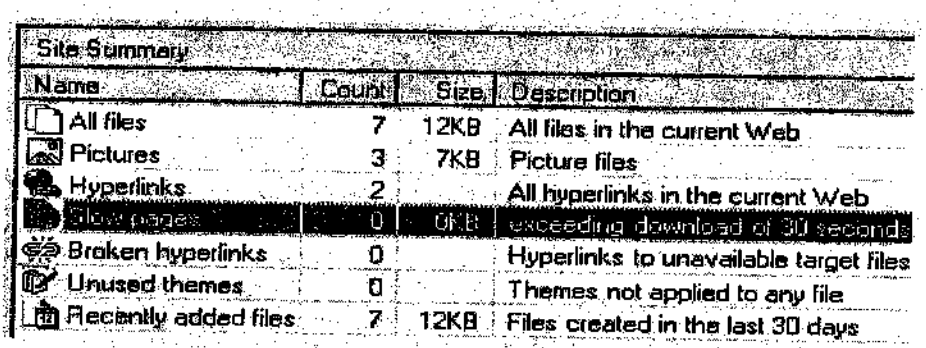
Slow pages

When a Web page contains a lot of pictures and effects, it may take a long time for it to download onto your visitor's computer. If you have a slow page, you may want to take out some of the graphics - because, otherwise, your visitors may not want to wait.

To check for slow pages:

1) Click the Reports button on the View Toolbar. The Site Summary page appears.

2) In the Name column of the Site Summary table, locate the Slow pages row. If you have slow pages, a number appears in the Count column. If you don't have any slow pages, the number "0" appears in the Count column.



Are some of your pages too heavy?

3) To identify which page is slow, double-click the Slow pages row. The Slow Pages table appears.

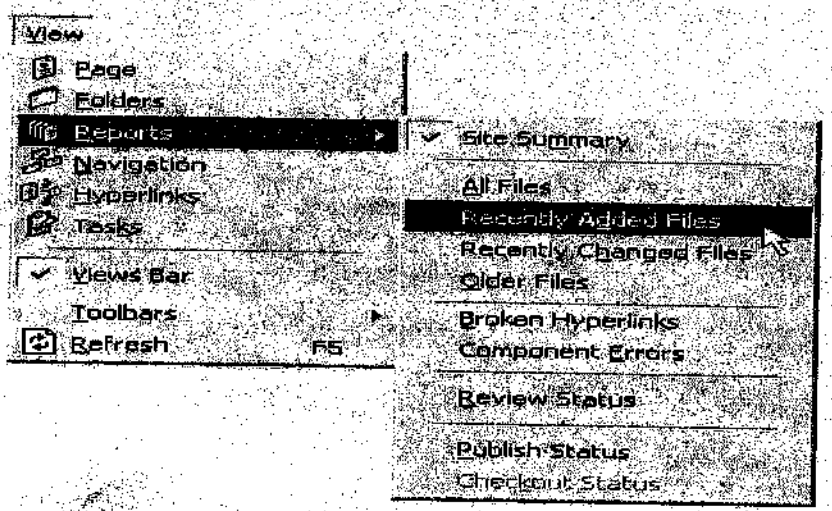
In general, any page that takes longer than 30 seconds to download (with a 28.8 modem) is considered a slow page. If you want to change this criteria, say to 20 seconds, select a new time-setting from the Reports toolbar.

Recently added files

It's a good idea to make sure your most recently added files are included in your site.

To check for recently added files:

1) Click View on the Menu bar and choose Reports, then Recently Added files. A list of recently added files appears in Reports View.



Has anyone added files to your Web site recently?

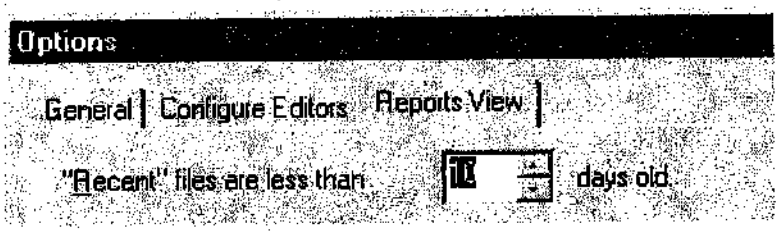
FrontPage automatically defines "a recently added file" as one that was added to your site within the last 30 days. You can change this number of days. You can also change FrontPage's definition of an older page, a slow page, and the modem connection speed you assume your visitors will have.

To change the definition of Recently Added Files:

1) Click Tools on the Menu bar and choose Options. The Options dialog box appears.

2) Click the Reports View tab.

3) Type a number in the Recent Files Are Less Than box. For example: *10*.



Redefine what is a recently added file.

4) Click OK on the Options dialog box.

Self Learning Exercises

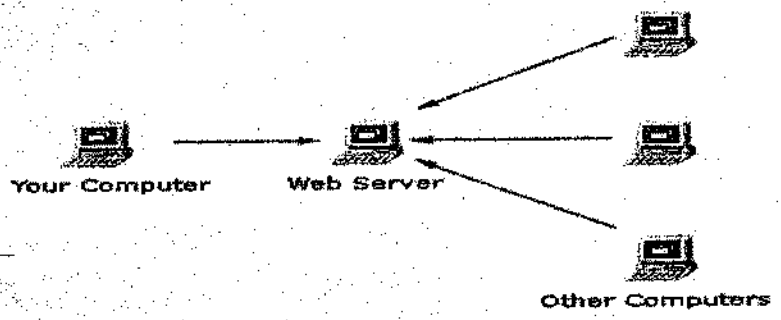
1.How to edit HTML in frontpage?

2. How to delete a cell within a table in frontpage?

12.14 PUBLISH TO SERVER

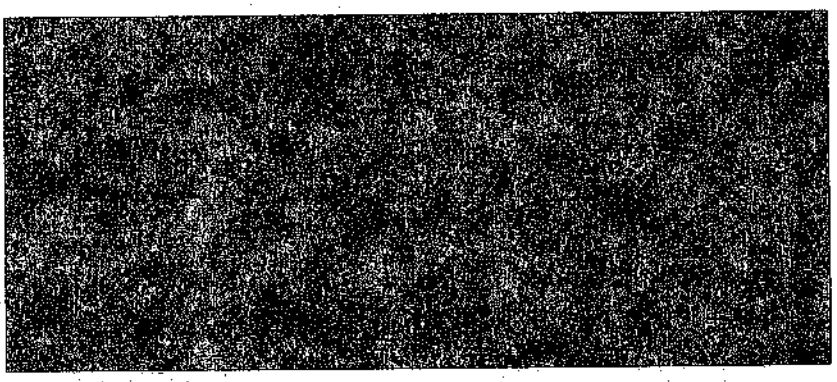
You need to "publish" your Web site before other people can see it on the Internet.

While you were creating your site, you saved your Web documents on your own computer. To "publish" your site means to transfer these same documents onto a Web server. A Web server is a high-powered computer that places Web site files onto the Internet. Once your files are on the Web server, other computers can 'connect' to the Web server and retrieve your files for viewing.



Publishing your Web site not only allows you to share it with the public, but it also lets you check out how your forms and databases work.

Your school may have its own Web server. If not, you'll have to find an Internet Service Provider (ISP) that will publish your Web site on its server. An ISP is a company that provides Internet access and rents space for people's Web site files.

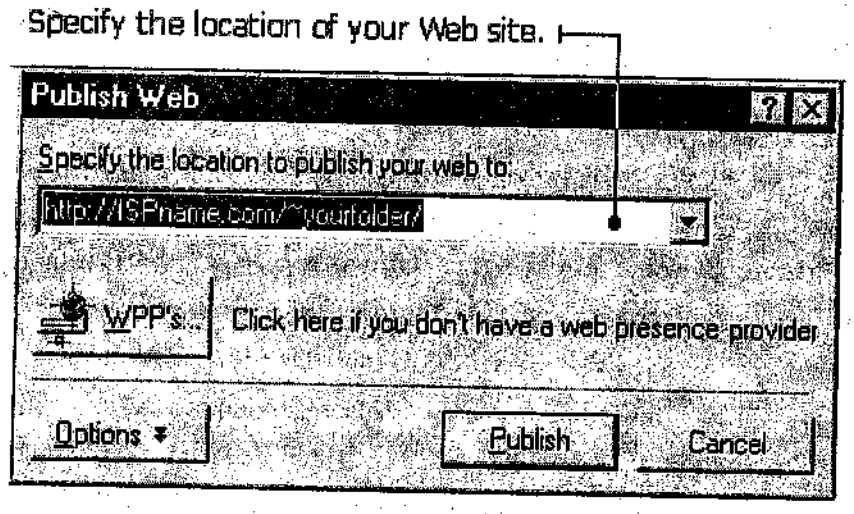


Ask your ISP or your school's network administrator if your Web server has FrontPage Server Extensions. Server extensions are like special mini-programs. You can publish your Web site even if your server does not have these extensions - but you just need to do it a little differently.

To publish your Web site to a server with FrontPage Server Extensions:

1) Click File and choose Publish Web. The Publish Web dialog box appears.

2) Type in the location you want to publish your Web to. The location will look something like this: **http://ISPname.com/~yourfolder/**. Your ISP or your school's network administrator will give you this location information.

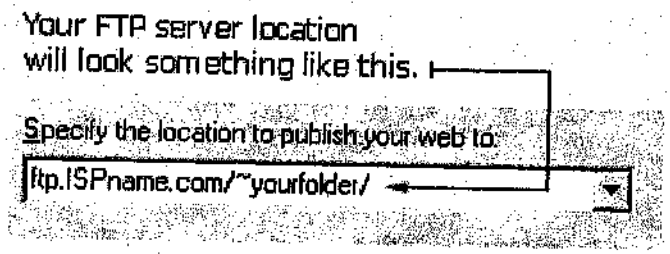


3) Click Publish. FrontPage prepares to publish your Web site to the server.

To publish your Web site to a server without FrontPage Server Extensions:

1) Click File and choose Publish Web. The Publish Web dialog box appears.

2) Type the FTP server location. The location will look something like this: **ftp.ISPname.com/ ~yourfolder/**. Your ISP or your school's network administrator will give you this location information.



3) Click Publish. FrontPage prepares to transfer your files to the Web server.

12.15 SUMMARY

Front page is the solution and you can create web site using front page more easily which require less time. Web site created using FrontPage will consists many features.

Microsoft FrontPage (full name **Microsoft Office FrontPage**) is a WYSIWYG HTML editor and web site administration tool from Microsoft for the Microsoft Windows line of operating systems.

12.16 GLOSSARY

active hyperlink: A hyperlink that a site visitor is clicking in a Web browser. For example, a hyperlink is active between the time a site visitor presses and releases the mouse button, when clicking that hyperlink.

ActiveX: A set of technologies that allows software components to interact with one another in a networked environment, regardless of the language in which the components were created. ActiveX is used primarily to develop interactive content for the World Wide Web, although it can be used in desktop and other programs.

broken hyperlink: A hyperlink that points to an incorrect URL or a missing page or file.

form: A set of data-entry fields on a Web page. The data is sent to the server when a site visitor completes and submits the form.

Web site: A set of associated Web pages, graphics, documents, multimedia, and other related files that are stored in a shared directory on a Web server.

12.17 FURTHER READINGS

- Official Microsoft® FrontPage® 2000 Book, W. Brett Polonsky and Kerry A. Lehto
- Microsoft Office FrontPage 2003 Inside Out by Jim Buyens
- Microsoft® Office FrontPage® 2003: the complete reference By Martin S. Matthews, Carole Boggs Matthews, Erik B. Poulsen

12.18 ANSWERS TO SELF LEARNING EXERCISES

1.In Front Page 2003 and above click the Code button at the bottom left hand of your screen

2.Select the cell first by going up to table and then clicking on Select Cell. Once the cell has become highlighted, press your delete key on your keyboard. Note that this method deletes the cell in Front Page 97; in 98, it only deletes the contents of the cells.

12.19 UNIT END QUESTIONS

Q1. Describe various features of FrontPage?

Q2. What do you mean by Broser Comaptibility?

Q3. Write short note on publish web site to server?

UNIT XIII

MULTIMEDIA CONTENT IN WEB

STRUCTURE OF THE UNIT

13.0 OBJECTIVE

Multimedia and web design technology play an important role in the field of education, agriculture, product launch, science and technology, corporate development and enhanced business opportunities. This has become possible by combining following elements through the digital format.

- Text and Data (alphanumeric)
- Still Images (pictures of real or imaginary world scene)
- Graphics (drawing, sketches, geometric forms in 2D and 3D etc.)
- Audio (speech, music, sound and noise)
- Video (dynamic sequence of real or imaginary world scene)
- Animation(dynamic sequence of graphics)

13.1 INTRODUCTION

Multimedia is media and content that uses a combination of different content forms. The term can be used to describe a medium as having multiple content forms. Multimedia includes a combination of text, audio, still images, animation, video, and interactive content forms.

Multimedia comes in many different formats. On the Internet you will find many of these elements embedded in web pages, and initially Internet browsers had support for text only, and even the text support was

limited to a single font in a single color, and little or nothing else, Then came web browsers with support for colors, fonts and text styles, and the support for pictures was added.

today's web browsers have support for a number of multimedia formats.

The support for sounds, animations and videos is handled in different ways by different browsers. Some elements can be handled inline, some requires a plug-in and some requires an ActiveX control. Some of these will be discussed in this chapter.

13.2 SHOCK WAVE

The Shockwave was developed by Macromedia. It is one of the format of sound and video file. Shockwave is a technology that was created specifically for the Web. Shockwave technology works by streaming information to the Web browser via a plug-in or embedded browser support.

The Shockwave format requires an extra component to play(Shockwave Player). This component comes preinstalled with the latest versions of Netscape and Internet Explorer.

Shockwave however, have many advantages over most Web-based media programs. It supports audio, animation, and advanced interactive events. Web pages with Shockwave are considered to be "shocked," and they are popular among certain Web enthusiasts.

Videos stored in the Shockwave format have the extension .swf. Macromedia Flash is not the only product that can produce .swf files. CorelDraw 10 has .swf support, and Beatware's epicture pro software is an excellent tool for animation with full support to .swf. Flash Shockwave provides a means to add interactive animation and movies for Websites for authors without having to program complex graphics.

Although Shockwave was designed for making a wide variety of online movies and animations, its actual use has become concentrated in the area of game development. It is often used in online applications which require a very rich graphical environment.

Shockwave content to be downloaded to your computer more quickly. The best case scenario is to run only your web browser while viewing Shockwave content.

Shockwave Player allows you to view interactive web content like games, business presentations, entertainment, and advertisements from your web browser. The Shockwave Player is free, easy to get, and available to everyone on the web. Shockwave Player displays destination web content such as interactive multimedia product demos and training, e-merchandising applications, and rich-media multi-user games.

13.3 LINGO

Director is a powerful multimedia authoring tool. It has two components: a design package capable of creating sophisticated animations and an extremely powerful programming language, called Lingo. Lingo contains the core of Director's power and adds complex interactive and decision-making components to an already robust design tool.

Most developers, however, use Lingo to add control and interactivity to Director movies. Lingo, as Director's programming language, adds the capability of clicking buttons, branching choices, controlling animations, and much more. For example, you could use Lingo to enable viewers to select various fish (tropical, saltwater) or to view photos of various fish tanks. Lingo enables you to turn your Web sites into interactive experiences.

You can also use Lingo to incorporate Web-related commands into shocked movies. For example, viewers could click an Order button that would take them to a new HTML page where they could fill out an order form.

Although Lingo has over 200 commands, numerous additional Web-related commands-*extensions*-have been added to the Lingo language for creating shocked Web sites.

Although Lingo is not case-sensitive, protocol dictates starting all Lingo commands in lowercase and beginning all other words within a group command phrase in uppercase

13.4 ACTIVE X CONTROL

ActiveX is a framework for defining reusable software components in a programming language independent way. Software applications can then be composed from one or more of these components in order to provide their functionality.

ActiveX controls — small program building blocks — can serve to create distributed applications that work over the Internet through web browsers. Examples include customized applications for gathering data, viewing certain kinds of files, and displaying animation.

HTML was designed as a page description language for defining static pages. As originally designed, when users connected to a web site, pages were sent to their browsers and displayed. To change what was shown, a new page had to be loaded. If input was required from users, it was sent back to the web server, processed there, and then new pages were sent back to the users' browsers. No local processing or updates were possible.

With the advent of ActiveX comes the concept of *active content*. You can embed items that will run on the user's machine in the HTML code that creates a web page. These items can dynamically update their displays or validate user input without accessing the web server. An ActiveX control is a modular piece of software that has its own small graphical interface and can perform tasks, compute information, and communicate to other programs.

When an ActiveX-capable browser encounters a Web page with one or more ActiveX controls, it checks the user's local system registry to see if those controls already exist on the user's computer. If they do exist, the browser displays the page and activates the controls. If the controls are not already installed on the user's computer, the browser automatically finds and installs the control over the Web.

13.5 CREATING AN ACTIVE X CONTROL IN WEB PAGE

An ActiveX control is inserted into an HTML page by using the **<OBJECT>**tag, followed by the **<CLASSID>** tag and the CLSID number:

<OBJECT ID="pmenu1" WIDTH=0 HEIGHT=0

CLASSID="CLSID:52DFAE60-CEBF-11CF-A3A9-00A0C9034920">

Initial parameters are set before the CLSID number, along with an **<ID>** tag that sets the size and gives the control a name (**ID**). Control of the OCX is managed by using the **ID**. The **HEIGHT** and **WIDTH** properties of the ActiveX control set a rectangle in which visual controls are displayed. Placement of the control on the Web page is dependent on HTML formatting.

You can set the property values for the object by using the **<param>** tag inside the **<OBJECT><</ OBJECT>** pair. However, many properties of AxtiveX controls are unique, and one should examine them before using ActiveX control. In the below example, the **angle** and **BackStyle** properties of the **Label** control are set :

<param name="angle" value="90">

<param name="BackStyle" value="0">

ActiveX controls are programmed just like any other object on the Web page. You set the properties of the control, and then your script reacts to messages sent by the user interacting with the objects in the browser. Because this is happening mostly on the client machine, the speed of the operation is limited only by the client's hardware.

Each ActiveX control has a set of properties and actions that can be set and reacted to. Suppose that you use the Label control to create some text on your page. You might set up the label like this:

<OBJECT ID="Label1" WIDTH=104 HEIGHT=27

CLASSID="CLSID:99B42120-6EC7-11CF-A6C7-00AA00A47DD2">

<PARAM NAME="_ExtentX" VALUE="2752">

<PARAM NAME="_ExtentY" VALUE="714">

<PARAM NAME="Caption" VALUE="Label Control">

</OBJECT>

Activate Active X Control

Users cannot directly interact with Microsoft ActiveX controls loaded by the APPLET, EMBED, or OBJECT elements. Users can interact with such controls after activating their user interfaces. *Interactive controls* are ActiveX controls that provide user interfaces. When a web page uses the **APPLET**, **EMBED**, or **OBJECT** elements to load an ActiveX control, the control's user interface is blocked until the user activates it. If a page uses these elements to load multiple controls, each interactive control must be individually activated.

When a control is inactive, it does not respond to user input; however, it does perform operations that do not involve interaction. If, for example, you open a web page that uses Microsoft Windows Media Player to play a music file, the music plays after the page loads. You cannot interact with Windows Media Player until the control's user interface is activated.

Activating Active X Control in Internet Explorer Browser

Follow these steps in order for Enabling activeX control in Internet Explorer

1. Open Internet Explorer.
2. Click on **Tools** then **Internet Options**.
3. Choose **Security Tab**.
4. Click on **Custom Level**.
5. Check the radio button against Enable, under **ActiveX controls and Plug-ins**.
6. Click **OK**.
7. In warning window asking Are you sure you want to change the security settings at this zone?, Click **Yes**.
8. Click **Apply** and then Click **OK**.

Activate Web Page using Microsoft Publisher

1 Start Microsoft Publisher. Click on the File menu, and then select "New."

2 Select "Websites" from the Publication Types list.

3 Select "Blank Sizes" and then choose the size of your website.

4 Click "Create."

5 Type your web page content. If you've already created your content, paste it into the Publisher screen. Do not try to divide your content into frames, such as those pasted from a Word file. Publisher does not produce frames on a website.

6 Click on the File menu. Select "Web Page Preview." The web page you've just created opens in your browser (Publisher is designed to display web pages in Internet Explorer and may not display well in other browsers.) Check the preview of your website to ensure that all the elements are working properly, including hyperlinks and navigation controls. Forms will not be visible in a preview because Publisher uses Front Page to process data forms.

7 Upload your file. Be sure to use an HTTP (not FTP) protocol to activate your website. After submitting your form, follow the prompts on the confirmation screen. Your website is now activated.

13.6 VDO LIVE TECHNOLOGY

VDOlive is a relatively new technology that supports both video and audio broadcasting on the Internet. VDOlive adds a video signal to the stream.

Traditionally, when a Web page contains a video, the user must download the whole file (MPEG, AVI, or any other format) and display it by using an external program running on his or her PC. Browser plug-ins and helper applications (built-in or external programs) enable downloading and automatic viewing. Unfortunately, downloading big video files (1MB to 10MB or more) can be a discouraging operation when you don't have a 56Kbps link (at least) to the Internet.

VDOlive technology is based on a scaleable video and audio compression algorithm and a protocol for transmissions of resulting files through the Internet. This technology enables you to view and download videos simultaneously; and the quality of the picture is proportional to the available Internet link bandwidth! The video file downloads and at the same time the player displays the part of the video that resides in the memory buffers. You do not have to download the entire video in order to watch it; you can see it while it is downloading.

Working of VDO Live

VDOlive is based on a client/server architecture, the client being the VDOlive player and the server being a VDOlive server (either the limited Personal Server version or the complete Video Server version). The client enables users to receive and view video clips, whereas the server transmits video over the Internet to users. Connectivity of both are shown in following figure-

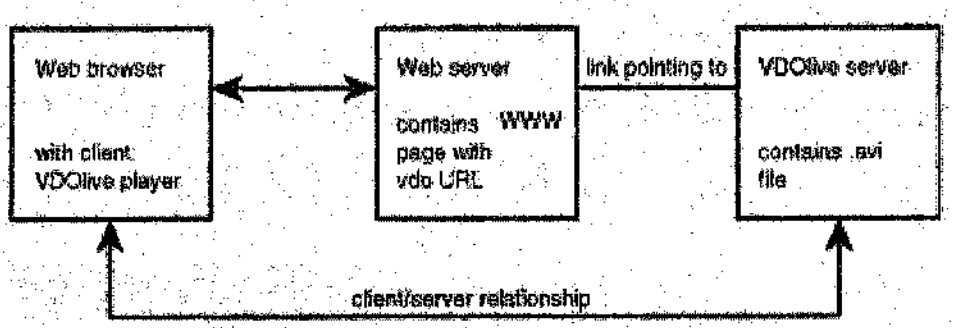


Figure : VDOlive is based on a client/server architecture,

Standard browsers cannot display real-time video and audio, so you must install a helper or plug-in application. This special-purpose program, which runs on the user's PC, interprets the video stream and displays it on a TV-like screen window. The plug-in to view VDOlive video clips is called VDOlive player. It is available for Windows and Macintosh platforms and works with most Web browsers.

On the server side, everything you need in addition to your Web server is a VDOlive server. This program runs in the background, listening to the default TCP port 7000, reads a file in VDO format from the local file system and transmits it over the Internet to a given client, using the UDP protocol. Two VDOlive servers are currently available: Personal Server and Video Server. The first is a limited test version, and the second is the complete program that can serve many video streams at the same time and scale up to different bandwidth connections.

You will have to capture video and audio sources (from VHS or Beta magnetic tapes) and then edit and compress them to the VDO format file, which is compatible with the AVI format. (In fact, the only good reason to have your own server on a Web site is to broadcast original video clips over the Internet.) You can use VDOlive Personal Tools, along with specialized video and audio capture hardware, to create your own video files. Other third-party tools, in particular tools for converting existing video formats (such as MPEG and QuickTime) to VDOlive format, are also available.

13.7 CREATING NETSCAPE NAVIGATOR PLUG-INS

Netscape Communications' Navigator 2.0, dynamic code modules, called plug-ins, were introduced to seamlessly enhance Navigator's functionality without altering its user interface.

Plug-ins provide a way for third party developers to enhance Navigator to support other document types without requiring Navigator to launch helper applications on the user's Macintosh. Unlike Java applets, plug-ins are platform native, which means that a plug-in written for the Macintosh will not work on Windows or UNIX platforms. All Navigator plug-ins exist in the Plug-ins folder that is located in the same folder as Navigator.

Plug-ins can be used to communicate through AppleEvents to other software applications on the user's computer, or can take advantage of other Apple system software features, such as OpenDoc or QuickTime VR, without changing Navigator's source code.

Above all, plug-in implementation doesn't affect the overall user interface for Navigator, making navigation around the World-Wide Web (by clicks on links as well as the "Back" button and bookmarks) the same from the user's perspective even though a plug-in is loaded on the current page.

To install a new plug-in, simply drop the plug-in into the Plug-ins folder and restart Navigator if it is running. When Navigator starts up it scans the Plug-ins folder for files of type NSPL, the type used for plug-ins. Next, a list of MIME types and file name extensions handled by each plug-in is created so that Navigator can map the MIME types and extensions of documents referenced on HTML pages to plug-ins. For example, the MIME type application/myplug could be mapped to the extension .mypl for the plug-in myplugin which would cause any files with names that end with .mypl to load the plug-in (the HTML used to load plug-ins and how to specify MIME types and extensions for plug-ins are explained in the second and third sections of this article respectively). The MIME types for plug-ins are briefly displayed on Navigator's splash screen as it starts up. When Navigator loads a document with a name that ends with one of the extensions mapped to a MIME type for a plug-in, the plug-in is loaded by Navigator. The plug-in is unloaded when the user leaves the page which references the plug-in or when the user quits.

Plug-ins can be one of three types: full screen, embedded, or background. Full screen plug-ins are displayed in a window separate from HTML code, and are usually loaded by clicking on a link to a document with a name that ends with an extension that is mapped to a plug-in MIME type. Embedded plug-ins are included in the same screen as the HTML for the current page using the EMBED tag (the sample plug-in demonstrated in this article is an embedded plug-in). Background plug-ins are used to perform tasks which don't require user interaction, such as playing audio clips.

Full screen and background plug-ins can be loaded with anchor tag that the user clicks on, such as:

```
<A HREF="http://foo.bar.com/testdoc.spec">
```

where .spec files are a plug-in extension .

For embedded plug-ins the EMBED tag is employed, such as:

```
<EMBED SRC="http://foo.bar.com/testdoc.spec"
PLUGINSPAGE="http://foo.bar.com/plugins/testdoc.html"
ALIGN=CENTER WIDTH=200 HEIGHT=75>
```

where SRC is the URL to a document with a name that ends with of one of the extensions which is mapped to one of the MIME types handled by one of the plug-ins in the Plug-ins folder (in this case .spec). The optional PLUGINSPAGE tag gives the URL of a page which has documentation for this plug-in. The other options specify alignment and size, similar to the IMG tag. See the documentation which is included in the Plug-in Software Development Kit (SDK) for other optional attributes that can be used with the EMBED tag (the URL for downloading the SDK is given in the plug-in API section of this article).

Whichever method you use, loading a file with an extension that is mapped to a MIME type of a plug-in creates an "instance" of the plug-in. Instances are used to differentiate between references to the same plug-in using multiple data files with the same extension. This means you can have several EMBED tags which call the same plug-in but use different data files.

The PLUG-IN API

Netscape Communications provides three platform dependent SDKs (UNIX, Windows, Mac). The latest version of the SDK (version 3.0 at the time of this writing) is available at http://home.netscape.com/comprod/development_partners plugin_api/index.html.

Version 3.0 of the Plug-in SDK doesn't include the very useful Plugin Template folder that was included with version 2. When creating plug-ins, it is much easier to start with a template and fill in those methods than it is to write the plug-in from scratch. The SDK does include several sample plug-ins that you can use as templates for your plug-in.

13.8 PULLING WEB INFORMATION

Pulling Web information using the new programs and services truly enriches your personal Web life. Personal Information Gathering Services (PIGS) that essentially fetch information from the Internet and bring it back to your desktop in one form or another.

other programs such as PointCast and Freeloader take care of you. These programs reside on your computer and silently traverse the Internet to retrieve your selected information automatically.

Basically, all the personal search programs perform the following tasks:

- Track information on specific subjects, issues, companies, and people.
- Get relevant and timely news releases from literally hundreds of sources worldwide, from major newspapers online to wire services, Usenet newsgroups, mailing lists, and more.
- Find additional links to other sources on your favourite topics.
- Search archives of collected data. This is especially true for larger content providers and newspaper and magazine companies.
- Open 24 hours a day with news often refreshed hourly or daily. Those PIGS that deliver the news to your e-mail account usually work Monday through Friday. You can customize PIGS such as Freeloader to work when you want them-hourly, daily (you indicate which days), or weekly.
- Change your personalized information page whenever you want, such as adding new categories to search and designing how your page displays. Make them a part of your own home page!
- Act as a screen saver for your system. PointCast and Freeloader do this already. In Freeloader, you just point and click, and it uses your dialer to connect to your provider and get the latest news.
- Entertain you with plenty of advertisements. Well, nothing is truly free. Although you incur no cost using these PIGS programs and services, you can expect advertisements. Some services have so many ads that it might make you want to use another PIGS program. Some services are tasteful enough with their advertisements that they don't slow you down in getting your information. Most of these PIGS work through your Web browser.
- Creates a real contender in replacing your own newspaper in that it will change the way you get your news. Many of these PIGS enable you to tell your computer when to dial out and connect to your ISP and then connect to your news sources.

The many information-gathering programs available are not all the same. They do overlap in the features they provide, but they each have nuances that I discuss to help you decide whether the program or service is for you.

Self Learning Exercises

1. What are the two types of events generated by ActiveX controls?

2. _____ refers to any type of application or presentation that involves more than one type of media, such as text, graphics, video, animation, and sound.

3. What are ActiveX objects?

4. Which information about a client is NOT usually available to a server via the http protocol?

5. User Interfaces are commonly programmed using:-
a. application driven architecture
b. network driven architecture
c. event driven architecture
d. None

13.9 CREATING CUSTOM INTEGRATED APPLICATIONS WITH MULTIPLE PROTOCOLS

Here is a checklist you can follow to write your own multi-protocol applications:

- Think about the functions your application will provide and the protocols it needs to use.
- Take some time to search for something similar on the Internet that might suit your needs.
- Get the specifications (usually an RFC, or Request For Comments, document) of the protocols you will use.
- Take a look at the sockets (communication) interface of the programming language of your choice.
- Make a draft of the overall design (such as subroutines and modules) of the application.
- Code the application in the language of your choice.
- Test your application, taking special care with the subroutines that implement the different protocols.

Web servers and Web browsers exchange information using the *HyperText Transfer Protocol* (HTTP), but several Internet services are based on other well-known protocols such as SMTP (mail), NNTP (news), FTP (file transfer), and so on. Fortunately, there are ways to exchange information between different servers and to present it all under the same Web-based interface. The integration of several protocols in one application requires a careful design process from the programmer and, most important of all, a good knowledge of the protocols and languages used. A common characteristic of multi-protocol Web-based applications is the use of the CGI (*Common Gateway Interface*) specifications. Unless an application uses a proprietary Application Programming Interface (API), it probably uses the CGI because it is the standard way of communication between a Web server and a custom application.

CGI applications can be written in virtually any computer language, such as Perl and C; it is just a matter of using their communication possibilities (using the sockets library, for example, available for all major platforms) in order to write an application that talks with different servers and outputs the results in HTML format. This is the idea behind multi-protocol applications based on the Web: Talk with other applications; treat the information they provide; and present the results in HTML.

One of the advantages of using CGI applications is that you don't have to worry about making a version for every known platform. Because the program is executed in the server-side, and because the output is in standard format (HTML, plain text, and so on), CGI is a good choice for creating multi-platform applications.

WebPop

To illustrate the use of an integrated application with multiple protocols, presented here is a CGI program called WebPOP (POP stands for Post Office Protocol, the most common Internet protocol for mailbox

contents retrieval). It is a very simple and practical mail-reading program that gets user input and presents results formatted in HTML so that the user's browser can display it correctly.

WebPOP was created to fill the need to offer Internet users an easy-to-use mail program. Internet and the World Wide Web are attracting a lot of new users, most of whom are not computer experts-some aren't even computer literate. These users need a very simple mail program that they can use to process a few messages per day. The use of a standard Web browser, along with WebPOP on the server-side, eliminates the need for a special purpose (platform-dependent) mail reader. These are generally good mail readers, but they frequently offer more possibilities than many newcomers need or want.

On the client side (the user side), the only piece of software needed to use such an application is a common Web browser. On the server side, the Web server must comply with the CGI specification, as do all well-known Web servers today.

13.10 SUMMARY

Plug-ins are dynamically loaded code modules. A plug-in that is loaded more than once is considered to have multiple instances. Navigator creates a child window in UNIX and Windows, but it shares the main window with a Macintosh plug-in.

The ActiveX technologies are extremely powerful and have the potential to enable Web-based applications to do things that were previously impossible. Using ActiveX controls, ActiveX scripting, and ActiveX documents in combination with HTML and Java applets, the software developer can develop truly interactive, interesting applications using the Web browser as the operating environment.

ActiveX itself comes with several advantages and disadvantages. It has the advantages of being language independent, having good performance, and a large existing code base. Some of its drawbacks include its platform dependence (it can be used only on Windows at the current time), its access to the local operating system, and its level of browser support (only Internet Explorer at the current time).

ActiveX controls combine the best features of standard OLE controls with the exciting environment of the Web browser. ActiveX technology is changing the Internet, and Microsoft has announced an open ActiveX standard to ensure that industry titans and smaller third-party developers alike can use this new twist on OLE/COM technology. A typical ActiveX control enhances a Web page by providing interactivity, animation, and OLE Automation programmability through scripting languages.

ActiveX controls can be programmed within a Web page by scripting languages such as Microsoft's Visual Basic, Scripting Edition (VBScript), and with the JavaScript language, co-created by Netscape (the founding father of the modern Web browser) and Sun (creator of the Java language).

Shockwave is a powerful plug-in for experiencing interactivity on the Internet and intranets. Afterburner is the developer's tool that turns a Shockwave-compatible application into a shocked file, ready for use in the HTTP environment.

Plug-ins are dynamically loaded code modules. A plug-in that is loaded more than once is considered to have multiple instances.

In this chapter you created an application that enables users to read their mail through Web pages. This application has served as an example of the principles and characteristics of multi-protocol applications. Not only have you created what can be a very useful application, but you have also gone through all the steps in the creation process of such applications and have acquired the know-how needed to proceed with the development of other applications.

13.11 GLOSSARY

Multimedia : transmission that combine media of communication (text and graphics and sound etc.)

Pixels - **PI**Cture **EL**ements. The tiny dots comprising a picture.
Video Teleconferencing :transporting real-time voice and video over telecommunications services.
Netscape Navigator :A popular graphical web browser. Like Internet Explorer, Netscape supports the latest interactive features offered on web sites, including Java and JavaScript.
Plug ins : A program that adds a specific feature to a user's browser so it is able to play/view certain files. Examples: Flash, Shockwave

13.12 FURTHER READINGS

- Web programming Unleased by Bob Breedlove et.al, Sams.net publishing
- Web Graphics Bible by Ron Wodaski, Comdex Computer Publishing.
- Internet Millenium Edition, Complete Reference by Young, TMH.
- Official Microsoft® FrontPage® 2000 Book W. Brett Polonsky and Kerry A. Lehto
- Dynamic HTML: The Definitive Reference
- JavaScript Programmer's Reference, Wrox, Author:Cliff Wootton
- Beginning JavaScript, Wrox, Author:Paul Wilton
- JavaScript: The Definitive Guide, O'Reilly, Author: ,David Flanagan

13.13 ANSWERS TO SELF LEARNING EXERCISES

1. Stock events & Custom Events
2. Hypertext
3. ActiveX objects, also known and Microsoft ActiveX Data Objects (ADO), are used by developers to enable software clients to access data from different databases. ActiveX objects allow connections to the database without requiring the developer to fully understand how the database is implemented.
4. The MIME types of applications accepted by the user's browser.
5. (C)

13.14 UNIT END QUESTIONS

Q1. Write short note on Shock Wave And Lingo.

Q2. What Do you mean by Active X Control?

Q3. What is VDO Live technology?

***

UNIT- XIV

ADVANCE MULTIMEDIA IN WEB

STRUCTURE OF THE UNIT

14.0 OBJECTIVE

This introduces students to the exciting world of multimedia, a combination of sound, animation, graphics, and video. Students will get exposure of sound and video production, multimedia presentations, web and desktop publishing, and photo & image editing. Multimedia is combining following elements through the digital format.

- Text and Data (alphanumeric)
- Still Images (pictures of real or imaginary world scene)
- Graphics (drawing, sketches, geometric forms in 2D and 3D etc.)
- Audio (speech, music, sound and noise)
- Video (dynamic sequence of real or imaginary world scene)
- Animation(dynamic sequence of graphics)

14.1 INTRODUCTION

Years ago web was little more than black text on a grey background. Good web sites require a seamless integration of text and graphics. All web WebPages can be divided into following categories.

No graphics at all

Heavy graphics

Light graphics

Good graphics

A page with only text download speedily but does not look beautiful, page with heavy graphics will take quite good but download slowly. A pag with good and light graphics have beauty with effectiveness properties.

14.2 WEB GRAPHICS

There are mainly two kinds of ways to have graphics on your web page. The first, is to use a graphic that is on another web page somewhere on the web. The second, is to upload the graphic to your own account. Personally, I prefer to use the upload method. If you are using the other way, there is always a chance that the person who made that page will decide to delete that graphic. Then a symbol with a circle, square, and triangle will appear where the graphic was supposed to be, sometimes it will look bad.

As the web become more and more graphically oriented, knowing the ways in which graphics are used on web become important web graphics deals with some following questions

- How graphics fit into larger picture ?
- How do manage large collection of graphics ?
- How to use graphics to make it easier for visitor to find their way around a web site ?

14.3 GRAPHIC VIEW OF WEB

A page should design to use user enough graphics to attract attention of visitor without using so many graphics that visitor will never have patience to see what you want to display.

Organize Graphics:-

By organizing your web pages, images and multimedia you can keep truck of various part of web site. The basic unit of web site is web page. Web page generally not contain graphics on multimedia Graphics and multimedia stored as separate files.

Web sites can be categories as

Small web site consists one or two web pages and graphics files reference on those pages. All files stored in single folder

Medium Sized sites consists number of pages fewer than ten files which are significantly of different types such as some text files, some images and some audio files. This require arrangement of each types of files in separate folder it makes easy to find files you want.

Large Sites consists many web pages. To organize create folder that correspond to overall structure of web site which require various levels of folders. The best way to organize large site is to break it down into smaller simpler web site and use the exact organization on your local hard disk and on web server.

14.4 EASY WEB GRAPHICS

There are many image editors some of them created for creating images and other fun editions images and few of them works both tasks. Photoshop is taken as a image edition example in this bak the real power of image editions comes when you combine various effects a good images edition is limited only by your imagination.

The more colors better looks but slow to display on web page. Special software is now available to help you reduce colors without sacrifice of too much image fidelity.

Easy Web Graphics tools removes the frustration of creating graphics. It looks and functions similarly to Microsoft Word™ (except it makes graphics, of course), so there's virtually no learning curve. In fact, **anybody** can create and update graphics without any artistic ability or technical knowledge in about 5 minutes or less. As an Example two of such tools are summarized below

Net studio

Features

- Web Graphics in 10 Minutes
- Easy to use - No Learning Curve
- Wizards to create web banners, web buttons, Ad Banners, Navigation

- Works seemlessly with leading Web Page Editors such as MS Front
- Ideal for Do it Yourself Web Designers

Extra Features

- fastest all-in-one graphics package you'll find.
- For drawings or photo work, for print or web graphics, it's the perfect choice.
- an easy template based solution
- It offers comprehensive WYSIWYG web graphic, web page and website creation

14.5 IMAGE AND HYPERLINKS

World Wide Web widely accept GIF, JPEG and PNG format as a standard format which are compressed images so that saved image is smaller than in other non compressed file format, because small files take less time to transfer on web. Strength and weaknesses of each one is summarized below

GIF (Graphics Interchange Format)

Strength - Lossless (if < 257 colors)

Weakness - Maximum 256 colors

Poor Compression gradual changes in colors

JPEG(Joint Photographic Expert Group)

Strength - Millions of colors

Weakness - Lossy : Sharp edges will appear blurred

Does not support transparency

PNG(Portable Network Graphics)

Strength - Millions of colors, lossless

Weakness - Not supported by older browsers.

Graphics requires knowledge of how web works and how graphics fit into the longer, picture. It is very easy to add image to web pages but creating good images, arranging images those are artful tasks that make on break web page.

Any decent graphic image really is worth at least a shous and wonels. But small graphics is better, fewer colors are bather and good design and tight integration are still strict requirement.

Adding Images as Hyperlink with Navigator Gold:-

1. Open file in edition menu selection.
2. Switch to edit mode
3. To add images or edit their properties you use picture dialog box
4. To add more space between image and text enter the require space into text box for left and right pixels in picture dialog box.
5. click OK.

Working with Hyperlink :-

A hyperlink consists of two parts; first, the full address of the external or internal link and second, the text or image that is displayed on the page.

An internal hyperlink is one that takes us to a new location within the current open web page. They provide a wonderful means to maneuver through the information we've presented on our pages. They are easy to set up, understand and use.

Before we can establish an internal hyperlink first we must create either a 'bookmark' (Microsoft terminology)

or a 'target' (Netscape terminology). A bookmark (or a target) defines the place within the text (a bookmark must refer to some text, not an image) where we the href will include the full address of the remote resource using the URL (Uniform Resource Locator) of the resource.

There are following types of links –

- Link to file on same server (Link to files).
- Link to web page on other web server (Link to web sites)
- Link which Pop-up email program with address already filled (mail to)

Link to files require location of file to be linked which you can browse but in link to web site URL required which can not be browse while in mail to links are not really links it is link to e-mail address. Complete mail to is as

MAIL TO : name@domain.com

Idea behind mail to is to make it easy to send mail to given e-mail address.

14.6 ADDING GRAPHICS TO WEB PAGE

A text-only page isn't going to catch anyone's eye. After all, the World Wide Web is all about color and pictures.

- Two file formats are used for graphics files on the Web: "GIF" and "JPEG."
- Graphics files should be in the same folder as your web page "HTML" file. If you have only one or two graphics files, they can be in the same folder. But if you have several graphics files, it is best to put them in their own folder inside the

To add Graphics to web page we have two option one by using web page edition s.a. Front page Netscape Navigator Gold other is by HTML code. Front page method to add Graphics is already explored HTML code is an alternate which fells that img tag can add Graphics and also specified properties of Graphics to be displayed HTML Code founding Graphics has be covered in HTML portion of this course. Therefore we can use web page edition and fanged about ever knowing what an image tag on how it work or you can fell your webpage to add features to your Graphics that are not covered by editor. Knowing image tags gives you additional control over images used on your pages.

Steps involve in adding a graphic to your web page in approximated all tools

- Position the cursor at the place where you want the graphic to appear:
- Go to the Insert menu and select Image:
- Click on Choose File:
- Navigate to the desired folder. If you have a graphics folder, open it.
- Select the desired file and click on Open:
- Click on OK (or hit Enter) at the next screen.

14.7 SITE AND PAGE DESIGN

Since Most web sites consists of many pages, therefore putting various pieces together into a coherent whole is became challenging for this purpose site design and page design become important for web page designer

Create Site Design:-

Good site design is critical and Main objective of a site Design is to deliver information. It in a site user can't fine information of his interest in your site and can't navigate around your site to explore then your web site is not worth.

Principles of site design:-

Some basics of good site design are as follows:

- Examine every elements of site from are perspective only that is visitor to site.
- The larger site, greater need for clear canaries organization of information.
- The page that load quickly is better than the slow page.
- Don't provide districting links on pages where the distraction isn't warranted.
- Make sure you have got the right images.
- Know the purpose of every graphics so you can decide if the time it takes to download is justified.
- Check the organization of your side.
- Prototype your web site before you release it on an unsuspecting world.

Implementing a Design:-

It is hard to separate design from implementation steps involves in implementation of Design is summarized below:-

1. **Start with a site concept:-** Site must provide all divisions and operation involve in that.
2. **Layout overall site Structure:-** Graphical representation of plan which site map with all the features.
3. **Establish navigation requirements:-** To provide visitor easy explore to all the best part of site.
4. **Identify major page types**: -To know what kind of features are going to be needed on typical pages identify main page, bar section page subsection page etc.
5. **Design navigation**:- Navigation bar has more region and allows visiting to go straight to their destination.
6. **Create a generic page design**:- Some generic information regarding design should be used in all pages such as logo, navigation bar etc.
7. **Establish Themes** : Themes provide standard take for each page such as logo on left, Transparent icon.
8. Refine the overall site structure for upgrade site.
9. Create a home page design to integrate all over featured of site.
10. Create major page design, design special purpose pages.
11. Revise existing content and add new content.

To generate traffic web site has to present new data then only you can allow of web site.

14.8 FRAMING YOUR GRAPHICS

Frames divide browser window into two or more sections to display different web pages at a time. Frames can be created either by HTML code or by editor HTML code tedious and guarantied to be challenging but understanding how frame work at base level gives you greater understanding.

e.g. <frameset row= "50%,50%">

<frame src = "First HTML" name = "First" >

<frameset Cols = "25%,75%">

<frame Src = "Second HTML", name= "Second">

<frame Src = "Third HTML", Name = "Third">

</frameset>

</frameset>

Firstly web browser divide displays into row of equal size, than second row divide in to two part of 25 and 75%.

Key points are given below:

- Frames are arranged into frameset
- Frameset can be nested
- Individual frames have names
- Each frame display a web page
- You can fell non-frame browser what to display instead of frames like

<no frames> frames does not support </no frames>

Controlling the frames

You can use various HTML tags and parameters the control the appearance of frames or to control which web page display in what frame.

Some parameters are discussed following-

Frame Border – determine whether frame display its border or not.

MarginHeight – number of pixels between top edge of frame and frame's content.

MarginWidth – number of pixels between left and right edges of the frame and frame's content.

NOResize – Prevents the visitor and resizing the frame.

scrolling – determine whether scroll bar is displayed for frame or not.

SRC – specifies URL of web page that is displayed in the frame.

COLS – determines number of columns allocated to each frame in frameset.

ROWS – determine number of rows allocated to each frame in frameset.

FrameSpacing – determine width of frame borders.

Graphics with frames

The relationship between frames and graphics is similar to the relationship between tables and graphics: You get more control over page layout with frames. However by putting a different web page in each frame you also gain a tremendous amount of flexibility. By careful management of MARGINWIDTH, MARGINHEIGHT and other parameters for the frame and frameset tags you can create versatile and interesting web sites.

However working with frames require either a lot of hand coding of HTML or the use of a fairly sophisticated web page editor. Frames are often an option when creating when sites with wizard and you use the frame wizard to add individual framesets to your web site.

The design rules for adding graphics to page that are used in frames aren't really any different from the design rules for graphics on individually web pages. The key difference is that you will display more than one page at a time, and you should pay close attention to the way that graphics in different pages interact.

Self Learning Exercises

1. It is possible to display pictures (i,e, images) in HTML specification by using the tag.
   a. <GR src = Picture file>
   b. <PIC src =Picture file>
   c. <IMG src =Picture file>
   d. <GIF src=Picture file
2. The title of the web page appears where
   a In the browser's title bar
   b The blue bar at the top of the browser window

c In a bookmark
d All of the above

3. When coding for a linking tag, there has to be text between the opening link tag and the closing link tag. This gives the person actual text to click on in the browser.
   a True
   b False
4. When publishing a web file and it is too large, which of the following is an option:
   a Reduce number and/or size of multimedia elements
   b Pay for additional storage space
   c Reduce number and/or size of images
   d All of the above
5. What two attributes are used to control the size of an image?
   a Height and width
   b Pixel ratio and value
   c Depth and width
   d Pixel value and width

14.9 DYNAMIC GRAPHICS : ANIMATION

Animation is just a series of graphics images showing successive steps. Each image is called a frame of the animation. There are many ways to present an animation and many ways to create the animation. You can add an animation to a web page using GIF files or by converting the animation to a video clip and adding the clip to web page. Two animation techniques are

Interpolation – you create starting and ending frame and use software to create intervening frames.

Key Framing – You have to draw each frame individually. Most animation Software allows you to draw new frame accurately.

14.10 SUMMARY

Advanced multimedia in web does following-

- Develop advanced knowledge and skills relevant to the design and creation of combined real and virtual interactive and intelligent multimedia and tools to assist in the creation of combined real and virtual interactive and intelligent multimedia.
- Develop the ability of designing complex combined real and virtual interactive and intelligent multimedia creations, and the versatility to apply a variety of different design tools and technologies across a range of different media areas to realize the creation.
- Develop creativity and independent learning ability required for continuing professional development, further research, and for acquiring new skills at a high level.

14.11 GLOSSARY

ActiveX: A programming interface (API) that allows web browsers to download and execute Windows programs.

Animation: A set of pictures simulating movement when played in series.

Bitmap: A pixel-by-pixel description of an image. Each pixel is a separate element. Also referred to as a raster image.

Internet service provider (ISP): A company that provides direct access to the Internet. The ISP usually has fast, dedicated connections to Internet services and multiple modems to which individual users connect over phone lines. When you establish an account with an ISP, the company provides the information and basic software you need to set up your computer for Internet access.

IP address: IP is short for Internet Protocol, a way of specifying how information is transferred across computer networks. The IP address, which identifies a specific computer, consists of a 4- to 12-digit number separated into four sections by periods (for example, 130.43.2.2).

Image Resolution: Total number of pixels of a particular image. Device Resolution - Determines output resolution. Example: monitor resolution = 72 or 80 ppi (Web graphics are set to 72 ppi, and print graphics are set to 266 or 300 ppi)

CP/IP network connection: Abbreviation for Transfer Control Protocol/Internet Protocol, a way of specifying how information is transferred over the Internet (by means of a network connection).

WYSIWYG: What You See Is What You Get - A desktop computer system feature that allows the user to preview to some degree the final output to the printed page

14.12 FURTHER READINGS

- Web programming Unleased by Bob Breedlove et.al, Sams.net publishing
- Web Graphics Bible by Ron Wodaski, Comdex Computer Publishing.
- Internet Millenium Edition, Complete Reference by Young, TMH.
- Official Microsoft® FrontPage® 2000 Book W. Brett Polonsky and Kerry A. Lehto
- Dynamic HTML: The Definitive Reference
- JavaScript Programmer's Reference, Wrox, Author: Cliff Wootton
- Beginning JavaScript, Wrox, Author: Paul Wilton
- JavaScript: The Definitive Guide, O'Reilly, Author: ,David Flanagan
- Multimedia and Web design by Vikas Gupta
- Writing for Multimedia and the Web, Third Edition: A Practical Guide to Content Development for Interactive Media By Timothy Garrand

14.13 ANSWER TO SELF LEARNING EXERCISE

1. d
2. d
3. True
4. d
5. a

14.14 UNIT END QUESTIONS

Q1. What are basic elements of multimedia?

Q2. Describe in short small, medium and large web sites.

Q3. Compare GIF, JPEG and PNG.