UNIT-I

The Internet has experienced spectacular growth over the last few years. A wide range of knowledge is needed by anyone interested in publishing on and participating in the **World Wide Web**. In other words, everyone should be Internet Literate.

The **World Wide Web (WWW)**, or **Web** for short, is a software application that makes it easy to publish and browse hypertext documents on the Internet. The Web has developed a huge following because of its ease of use and visual appeal. It is called a "web" because the interconnections between documents resemble a spider's web.

The Internet can be thought of as a very large heterogeneous group of networked computers. The Information on the web is transported over the Internet. In fact, the web is now the driving force behind the Internet and new Internet technology is being developed to meet the needs and wishes of web users.

Overview of www

➢ The World Wide Web (WWW) is a network of the computers all over the world.

➢ WWW is also knows as the web is a client-server network.

➢ Communication on the web happens through HTTP.

➢ Web information is stored in Web pages

➢ Web Pages are stored on Web servers

➢ Web clients view the pages in a Web browser.

➢ Popular browsers are Internet Explorer and Netscape Navigator

➢ Internet is a communication network linking computers world wide.

➢ The World Wide Web is a way of accessing information over the medium of Internet. It is an information sharing model that is built on top of the Internet.

➢ WWW is also known as the web.

➢ WWW is not a single entity it is a client-server network that includes web servers that are designed to deliver files to the client.

➢ The web uses the http protocol to transmit data.

➢ A web site is a collection of files, linked together and saved on the web server. These files are known as web pages.

➢ Client utilizes browsers such as Internet Explorer, Netscape Navigator etc to access web documents called web pages.

➢ First page which is displayed in the web browser when it connects to the web site is called the home page.

BROWSING & PUBLISHING

Browser Bare Bones

A Web browser is one of many software applications that function as the interface between a user and the Internet. The browser not only sends messages to Web servers to retrieve wanted page, but also parses and renders the HTML code. That is, the browser interprets the code and displays the page content in browser window. Many browsers have built-in mail clients and/or newsreaders. Additionally, auxiliary programs such as helper applications and plug-ins can be configured into the browser. Browsers will continue to grow in complexity and functionality in the foreseeable future.

Popular browsers – Microsoft's Internet Explorer (IE), Netscape Navigator, Mozilla Firefox etc.,
Below figure illustrates the terminology associated with a browser window. The different components of the window are numbered. A short explanation of each part is
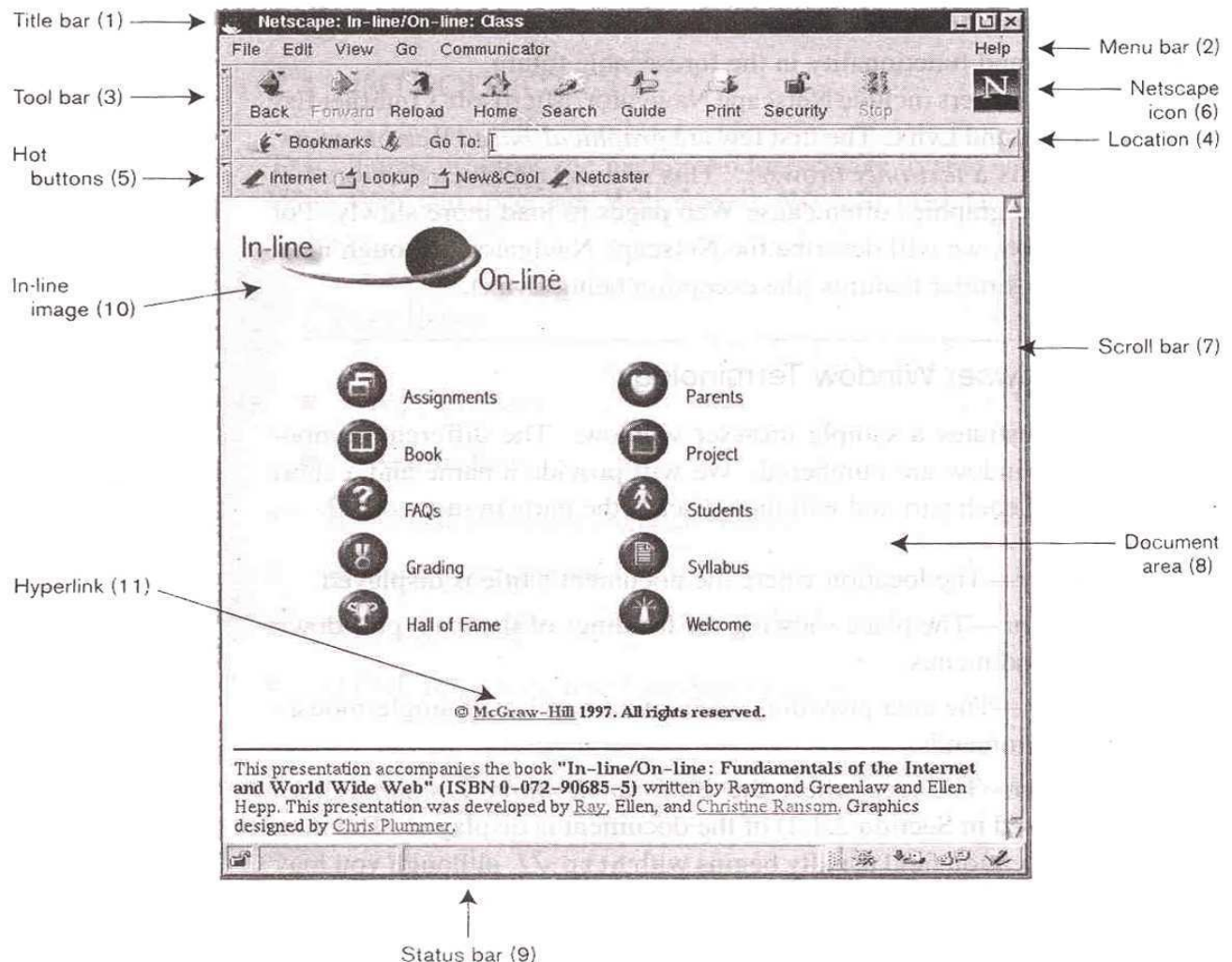
1. **Title bar** – Location where the title is displayed
2. **Menu bar** – Headings of the main pull down command menus
3. **Tool bar** – Number of single mouse click commands
4. **Location or Address bar** – The area where the URL is displayed
5. **Hot buttons** – Single click buttons to provide no. of convenient features
6. **Icon** – Image which shows movement when a document is being downloaded
7. **Scroll Bar** – Arrows which allows to display a different part of the page
8. **Document area or browser window** – Part of the window used to display the contents of documents
9. **Status bar** – Area to display a programmer specified message
10. **Inline Image** – An image appearing with in a document
11. **Hyper Link** – A high lighted part of a document that, when selected, causes the browser to retrieve and display a new document

Note on Hyperlinks and Coast-to-Coast Surfing

Hyperlinks are clickable text and/or images that generally cause the downloading and rendering of a new HTML document. Hyperlinks are often displayed in a different text color than the remainder of the document, and they are usually underlined to make them stand out. An image serving as a link may have a border around it that is the same color as other hyperlinks on the page. Moving the mouse over a hyperlink will cause the mouse cursor to change appearance, perhaps form an arrow to a hand . The location (URL) of the link being moused over will be displayed in the status line, which is very helpful to understand URLs.

"Web" is a shorter form of World Wide Web, other common short forms are WWW, W3 and W^3. The web provides a means of accessing an enormous collection of information, including text, graphics, audio, video, movies and so on. One of the most exciting aspects of the web is that information can be accessed in a nonlinear and experimental fashion. Unlike reading a book by flipping to the next page in sequential order, you

can jump form topic to topic via hyperlinks. This nonlinear approach to information gathering or browsing is sometimes referred to as "**surfing the web**" . Different readers will proceed through the same web presentations in totally different ways, depending on their backgrounds, needs, and personalities.

Web Terminology

WebPages or Files:- The Global collection of documents associated and accessible via the world-wide-web (w3 or www)

Hyper media: Media with links and navigational tools

Web Presentation: Collection of associated and hyperlinked web pages

Web master: A person who maintains, creates (or web manager) and manages a web presentation for a organization

Website: An entity on the internet that publishes web pages. For example www.Microsoft.com where www.microsoft.com/index.html is the name of a web presentation

Web Server: A computer that satisfies user requests for web pages

Mirror site: A site that contains a duplicate copy of a web presentation from another site. If one server is down a mirror site can be tried if exists

Brief note on URL (Uniform Resource Locater)

The world-wide-web is the universe of network accessible information, the embodiment of human knowledge. A URL is a compact string which represents the location for a resource that is available via the internet. Typing a URL in the location area or address bar and hitting the return key will cause the browser to attempt to retrieve that page. If the browser is successful in finding the page the browser will render and display it. To do this the browser needs to answer following three questions

1. How can the page be accessed
2. Where can be page be found
3. What is the resource name corresponding to the page

The URL is designed to incorporate sufficient information to resolve above three questions

Format of URL

How://where/what

Example: http://microsoft.com/package/os/index.htm

1. Http – Defines the protocol or schema by the which the page being accessed. In the above example, the protocol is hyper text transfer protocol. This is the set of rules by which an html document is transferred over the web. Other protocols that may occur in URL are ftp, gopher, mailto, news and telnet.

    https   – Hypertext Secure

    ftp   – File Transfer Protocol

    gopher – Gopher

    mailto – sending e-mail

    news   – Requesting news

    telnet   – Remote login

2. Second part in the URL identifies the domain name of the computer where page resides. The computer is the web server capable of satisfying page requests.

    In the above example "Microsoft.com package/os/" tells the browser where to find the webpage.

3. The last part of the URL provides the local name usually a file name to identify specific page uniquely. If no name is specified the web server may supply default page or file. On many systems the default file is named as index.htm or index.html

    Examples of URL

    http//:www.mail.yahoo.com

    http//:-www.englishlearnings.com

    http://www.campusconnect.infosys.com

Web page Installation

In order to view your pages on the web, you need to install them on a web server. A web server is a program located on a computer with internet access that responds to a browsers request i.e., web server meets the demands of users by supplying the web pages requested. Ideally the server should have an uninterrupted internet connected. So, that the pages it handles, are always available. Many ISPs (Internet Service Providers) include space on a web server as part of the basic set of services covered in their monthly fee. The system administrator whose is responsible for the server will provide specific details for publishing your web pages.

Requirements for web page installation

1. You need to have web pages to publish
2. A web-server where the files can be placed must be available to you and you need to learn the steps to put the files in the appropriate place (uploading)
3. The permissions on the file need to be set, so that any user any where can print them (world readable)
4. When some one request your web page with valid URL, the server has to deliver it.

All above details of exactly how these steps are performed vary from plat-form to plat-form.

What is HTML?

• HTML stands for Hyper Text Markup Language .

• It is used to design and develop Web Pages.

• HTML is

– Simple

– Browser/Platform Independent

– Not Case Sensitive

– Different from other Programming Languages

– A medium for User Interface

Web Pages are coded in HTML. HTML documents are stored on the web server and are downloaded as part of a response to a request from the client. HTML stands for **Hyper Text Markup Language** and is used to create hypertext documents that are platform independent. An HTML document is a text file that contains the elements a browser uses to display text, multimedia objects, and hyperlinks. Using HTML, an author can format a document for display and add hyperlink jumps to other documents. A user with the mouse can select text that is formatted as a hyperlink. Once selected, the hyperlink jump will load the referenced document into your browser.

HTML tags and attributes

• The HTML instructions are called tags, and look like

– <TAG> ….. Text here…….. </TAG>

• Container tags :Tags that have starting as well as ending part.

– e.g.: <TITLE>Title of the Web Page </TITLE>

• Empty tags : Tags that do not have the closing part.

– e.g.
 , <HR>

• (HTML instructions + text to which the instructions apply)= HTML elements

• An attribute is an additional feature you can use to configure the element

• Attributes are optional.

• e.g.: <H1 ALIGN = "CENTER"> This is a heading </H1>

An HTML file contains markup tags that tell the browser how to display the page. HTML tags are used to mark the elements of a document for your browser. These elements could be headings, tables, lists etc. and can contain plain text, other elements, or both. The tags consist of a left angle bracket (<), a tag name, and a right angle bracket (>). Tags could be paired (e.g., <H1> and </H1>) to start and end the tag instruction. Some tags don't need to have the closing part - these are called empty tags e.g.
 whereas some tags necessarily need to have both the staring as well as ending part - these are called container tags e.g. <H3> and

</H3>. HTML tags are case insensitive. Many HTML tags also have attributes assigned to them. An attribute is an additional feature you can use to configure the element. For example, <H1> tag can also have an attribute "ALIGN" assigned to it, so that <H1 ALIGN = "CENTER"> will generate a center aligned heading. Attributes are optional, can be used depending on how you want to modify the tag. Attributes always come in name/value pairs like this:

name="value" and are added to the start tag of an HTML element.

Structure of HTML Document

<HTML>
<HEAD> <!-- Head Section -->
<TITLE>Title of the Web Page </TITLE>
</HEAD>
<BODY> <!-- Body Section -->
<!-- Contents on Web Page -->
</BODY>
</HTML>

- ➢ An HTML file can be created by using a simple text editor viz notepad, textpad, editplus.
- ➢ HTML file must have an extension htm or html. Every HTML program or document has a rigid structure. The entire web page is enclosed within the <HTML> </HTML> tag. Within this tag, two distinct sections, head and body are created. These sections are as described below. Document Head The text between the <HEAD> tag and the </HEAD> tag is header information. Header information is not displayed in the browser window, it is necessary for the internal working of the document. An exception to this is the <TITLE> </TITLE> tag, which displays the document title in the browser's title bar.
- ➢ Document Body the <BODY></BODY> tag encloses the body of the HTML document.
- ➢ Comments The <!-- --> tag is used to insert a comment in the HTML source code. A comment will be ignored by the browser. Comments can be used to explain your code or earmark the areas that need improvement, which can help you when you edit the source code at a later date. e.g.: <!-- This is a comment --> Note that you need an exclamation point after the opening bracket, but not before the closing bracket.
- ➢ HTML Document – Head Enclosed in <HEAD> </HEAD> tag. Tags that can go in the document head <TITLE>Indicates the title of the document that is used as the window caption. <BASE> specifies the absolute URL address. <LINK> specifies the relationship between the current document and other documents. <META> element can be used to specify name/value pairs describing various properties of the document. <BASE> element specifies an absolute URL address that is used to provide server and directory information for partially specified URL address called relative address. e.g: <BASE HREF ="http://www.inf.com/file.html">. Specifies the base URL of the document. This is used when dereferencing relative URLs in the page. <META> element uses name value pairs to provide meta information about the document. It often provides descriptive information that is targeted by search engines.

    Eg:

    1. To have your page automatically reloaded every X seconds

         <META HTTP-EQUIV="REFRESH" CONTENT=X >

    2. To have a different page automatically loaded after X seconds

         <META HTTP-EQUIV="REFRESH" CONTENT="X; URL= http://address/file.html">

    3. To specify an expiration date for the page so that it will be reloaded after a certain date.

         <META HTTP-EQUIV="Expires" CONTENT="Mon, 23 Sep 2001 01:21:00 GMT">

    4. To specify keywords for certain search services to use.

         <META HTTP-EQUIV="Keywords" CONTENT="keyword1, keyword2, ...">

    5. To specify a description of your page for certain search services to use

<META HTTP-EQUIV="Description" CONTENT="Describe your site here...."

6. <LINK> element is used in linking style which will be discussed in later chapters.

HTML Document – Body Enclosed in <BODY> </BODY> tag. Some important attributes of the BODY tag

- – BGCOLOR = "color" / "#rrggbb"
- – BGPROPERTIES=FIXED
- – BACKGROUND = "url of the image"
- – TEXT = "color" / "#rrggbb"
- – LEFTMARGIN = n
- – LINK = "color" / "#rrggbb"
- – ALINK = "color" / "#rrggbb"
- – VLINK = "color" / "#rrggbb"
- – TOPMARGIN= n

<BODY > tag attribute

BACKGROUND=x.jpg - Specifies an image to be tiled as background.

BGCOLOR=color - Specifies the background color

BGPROPERTIES=FIXED -Fixes the background image so that it doesn't scroll.

LEFTMARGIN=n -Specifies the left margin for the entire page

TEXT=color -Specifies the color of text in the page

TOPMARGIN=n-Specifies the top margin for the entire page

Creating your first HTML page

➢ Type the following code in a notepad/textpad/ editplus file

```
<HTML>
<HEAD>
<TITLE> My first HTML Page </TITLE>
</HEAD>
<BODY >
WELCOME TO HTML
</BODY>
</HTML>
```

➢ Save this file with the name "LearningHTML.htm".

➢ Open this document in the browser.

Formatting the web page

➢ <FONT> tag – Allows you to specify the font face and font size. Some common attributes are

FACE specifies the font style.

SIZE specifies the font size. Value can range from 1 to 7. The default is 3.

SIZE can be set as a relative value using + or − .

COLOR- The color of a font can be specified using a hexadecimal number value six characters long.

E.g.: <FONT FACE="Helvetica, Arial" SIZE="7" OLOR="#FF0000">

Text Formatting tags

➢ Header Tags. HTML has six level of headings. Displayed in larger and bolder fonts. The font size of the heading will go on decreasing from H1 to H6. Different level heading tags.

1. <H1> Heading 1 </H1>
2. <H2> Heading 2 </H2>
3. <H3> Heading 3 </H3>
4. <H4> Heading 4 </H4>
5. <H5> Heading 5 </H5>
6. <H6> Heading 6 </H6>

➢ Paragraphs <P> </P> - used to create paragraphs.

➢ Line Breaks
 - to insert returns or blank lines in the document. e.g. :<P>This <BR> is a para
graph with line breaks</P>

➢ Horizontal Lines <HR> - used to draw a horizontal line across the web page. e.g: <HR ALIGN = "right" WIDTH = "50%" NOSHADE >

Physical text formatting tags

➢ Tag Description

1. <B>….</B> - Bold
2. <I>……</I> - Italic
3. <U>….</U> - Underline
4. <STRIKE>…</STRIKE> - Strikethrough
5. <TT>….</TT> - Typewriter (monospaced)
6. <CENTER></CENTER> - Centers the text on the screen.
7. _{….} - Subscript
8. ^{….} - Superscript
9. <BIG>….</BIG> - Bigger font (one font size bigger)
10. <SMALL>….</SMALL> - Small font (one font size smaller)

Brief Note on Linking Pages (or) Short note on Anchor Tag

The anchor tag, <A> and </A> , is the mechanism by which hyperlinks are placed in hypertext documents. The term anchor is used because it indicates the static positioning of a hyperlink.

Attributes : – HREF – NAME (bookmarks inside the page) – TITLE (balloon help in IE)

e.g.: <A href="next.html"> Click here </A>

A link is a unidirectional pointer from a source document that contains the link to the some destination. Links help the user to navigate across pages as well as within a page. The text or an image that provides such link(s) is called Hypertext or Hyperlink. Hyperlinks can be created by using a <A> tag, which stands for anchor and has the following attributes.

a. HREF - Hypertext Reference: This attribute points the link to a bookmark, another file, either within the same webs site or elsewhere on the internet.
b. NAME - Name: The name of the bookmark. This attribute lets you
c. "bookmark" a location on the web page. An HREF anchor can point
d. a link to that area on the page.
e. ALINK - Specifies the color of the activated links
f. LINK - Specifies the color of links
g. VLINK - Specifies the color of the visited links
h. TITLE - Displays balloon help in IE

You can use HREF to point to a URL and allow the reader to view the page from the beginning. Or, you can use HREF to point to a specific area of that page, indicated by a NAME bookmark, so that the user goes straight to that section of the document.

Syntax and Examples :

(a) Clickable Text Hyperlinks

<A HREF = http://www.usa.gov/document/index.html> White House </A>

(b) Clickable Image Hyperlinks

<A HREF = http://www.usa.gov/document/index.html>

<IMG SRC = "barrow.gif" ALT = "Under Construction" Height = "50" WIDTH ="50">

</A > …..with this if user clicks on the baroow image, the document named index.html will be loaded.

(c) Mailto Hyperlinks

<A HREF=mailto:xyz@gmail.com>Contact xyz </A> - when user clicks on the hyperlink "Contact xyz", a mail dialog box will be launched, with To field filled in with xyz@gmail.com. All the user has to do is complete the remainder of the message and send it.

(d) Intra-document Linking

Another important attribute of the anchor tag is NAME. The NAME attribute lets you crate a hyperlink to any part of your document, rather than just the beginning. That is, any portion of the document can automatically be displayed at the top of the browser's document area. This is useful if you have a long web page and would like users to be able to jump to various section of it without scrolling.

<A HREF = "#one"> First </A>

<A HREF = "#second"> Second </A>

<A HREF = "#third"> Third </A>

………..

<A NAME = "first"> <H3>FIRST</H3></A>

<A NAME = "second"> <H3>SECOND</H3></A>

<A NAME = "third"> <H3>THIRD</H3></A>

Note that if the hyperlink is in the same page/file, as in shown above, the URL does not need to be specified. You can begin the HREF with # symbol as shown above.

THE INTERNET

The information super-high-way is necessary to lead into the 21st century. The different definitions of the internet are

1. "Internet refers to the global information system" that is logically linked together by a globally unique address space based on the internet protocol or its extensions

2. Internet is able to support communications using the transmission control protocol or other IP compatible protocols

3. Internet provides, uses or makes accessible either publicly or privately high level services layered on the communications and related infra-structure.

All above definitions can be simplified into, "The internet is a global system of Networked computers together with their users and data".

The concept of being able to access information quickly and easily and communicate more easily and quickly led to the vision of the internet.

There are many ways to use the internet to send and retrieve information these include but not limited to e-mail, file transfer, remote-log-in and the web. New methods of using the internet can be conceived and developed.

Note on how web page can be retrieved using URL

The webpage retrieved is based on URL specified in the address bar of a web browser

Suppose URL specified is,

http://microsoft.com/techbooks/downloads/c++-cprogramming.dat

The following steps occur while retrieving a web page

1. The how part of the URL is http

2. Utilizing the where part of the URL, the browser queries the DNS for the IP address, Microsoft.com

3. Let us suppose, the IP address of Microsoft.com is 172.172.173.2

4. The browsers next establishes a TCP connection to 172.177.173.2. The default port for web servers is port 80

5. Now the browser sends a message asking for what part of the URL,

~techbooks/downloads/c++-cprogramming.dat

6. The server, Microsoft.com, services this request and sends back the file c++-cprogramming.dat

7. The TCP connection is closed, this ends the "conversation" between the client and the server

8. Browser displays text portion of the file

9. The browser repeats same steps in case of in-line images

10. The browser displays the images as they are retrieved.

Internet Congestion

As the internet becomes increasingly heterogeneous the issue of congestion control becomes more important. Internet handles an enormous amount of traffic every day at any given movement millions of users are sending messages or browsing the 80-million more pages of the World Wide Web.

The flow of data/traffic on the internet can suffer from congestion on the number of points. Consider the (for example) retrieval of web page from the US – White house internet site (http://whitehouse.gov) by a user at SK University, India.

Possible points of congestion include

1. White house's server's link/connections speed

2. The India/US link (National backbone) that the data travels over

3. The regional network (with in India) which delivers the traffic to the SK. University

4. The SK University own connection speed to the internet

5. The Band width available in the SK University local area network etc.,

Any or all of above may be the points with which user can suffer from congestion as a result of the traffic being carried exceeding the capacity of the connection.

Solutions

W3C (World Wide Web consortium) along with other researchers are addressing the issue of network congestion. Some of the solutions are

1. Improving the process of connecting to a web server

2. Introducing new techniques to serve web page request

3. Refining how a URL is resolve

4. Avoiding unnecessary graphics and using "PNG" format over the "gif" format

5. Reduction in the size of router tables by rearranging how blocks of addresses are identified

Along with above technological improvement w3c continuously working to reduce Internet congestion created by the World Wide Web.

Internet Culture

An entire culture as sprung – up around the internet. The Internet has emerged from being a research medium to one that includes advertises, commerce, forums for exchanging ideas on a near infinite set of subjects.

Since the internet is not-regulated any thing and every thing can be found on the web that is the editorial control which is applied to traditional print media is missing. So, distinguishing between inaccurate and accurate information is a necessary part of the Internet culture. To, find valuable information user need to be able to shift through web pages and separate the useful from the useless.

The lack of regulation that permits the proliferation of information on the internet also facilitates the interchange of ideas i.e., any one with an internet connection can express their views globally i.e., freedom of expression is one part of the internet culture.

Another aspect of Internet culture is created by the communication channels. People from all over the world are able to exchange ideas via e-mail, IRC/Internet relay chart), mailing list, news groups, web pages, web logs (blogs) etc

The marketing techniques for advertising on a web are also becoming more sophisticated. An industry is developing to monitor who visits what sites. So, that ads can be targeted more specifically to certain users.

So, as a conclusion the Internet has had a enormous impact on society and its influence will no doubt continue.

Business culture and the Internet

Many businesses are recognizing opportunities in on-line activities. In news papers and magazines. We constantly see URL's with which we can read (surf or browse) them instantly. Another question that may users and companies pose is "Is it safe to do business on the internet". Some companies are prime to convenience you that it is safe. Business on the web is till in its infancy and many questions remain unanswered.

On-line business

The Internet functions nicely as a means of facilitating business communications with in a given company as well as between companies. This is also an excellent venue for advertising and conducting trade with consumers. In addition to lowering transaction cost, the internet is transforming the market place in to a global environment. For companies, this means more potential customers, for customers this means a greater selection of services and products. This revolution is literally changing the way a lot of companies do business so, few interesting business models on the internet.

- Marketing – web presentations or web-casting to market through net
- Partnership – services and products can be deliver to a joint ventures
- Advertising – consumers can be targeted for a specific type of ads on the basis of their search requests
- Retail – consumers can view select, order and pay for their products on-line
- Service – consumers can use wanted service on-line and pay accordingly
- Software – users can use software and pay for it on-line and also potential buyers can try a product before purchasing it.
- Subscription – subscribers can subscribe on-line for a newspaper or a magazine. They also can view, the news paper on-line 24-hours a day, with which they can get most currently news.
- Any no. of business models can be evolved using internet as a tool or media.

Note on cookies

In CGI programming one of the most annoying problem is storing state information. When users go from one page to the next, it is hard to keep track of what they were doing or even if they are the same users. Netscape Corporation created "cookies" as one solution to this problem

A cookie is a chunk of information sent by the server, which can be stored on the client. Cookies are stored with a date they expire and the name of the host from which they come. When the user communicates with the same host later the data is sent back.

Cookies can be used in the following cases

1. Cookies can store uses preferences for a web page with which when users returns to the page they can view it in their wanted passion
2. Cookies can maintain state between CGI scripts or java script programs. For example, storing your score in a quiz up to the last question, where each question appears in a separate page
3. Cookies can remember information so, that users can avoid entering it, every time they access page. For example user name can remember with a cookie

Cookies can also be used in JavaScript. Each cookies store named piece of information which includes an expiry date. The cookies are stored in a "cookie-jar" on the user's computer. Specifically each cookie is a line in a file called cookies.TXT. The amount of data that can be stored in a cookie is very limited. The purpose of putting information in the cookies file on user disk is to reduce the servers search time. Typically cookies file contains about 300 cookies. So, after some-time least recently used entries are deleted when space is needed. One concern about the cookies file is that information may be used to determine an individuals personal habits, credit card nos., account nos., etc. some systems will also encrypt the vital information in the cookies file for the security reasons. So users will have to decide on the cookies controversy on their own. But general feeling is that their benefits are sufficient to justify their use.

THE World Wide Web

The World Wide Web (WWW) or Web is a software application that makes it (internet) easy and possible for any-one to publish and browse hypertext documents on the internet. The web as encompassing all

of the information available through web browsers. The web has developed a huge following because of its ease of use and visual appeal. It is called a "web" because the interconnections between documents resemble a spider's web.

WWW is the part of the internet that most users see and use and which has made it so popular.. The internet can be thought of "As a very large group of networked computers" i.e., the web therefore uses the internet. In fact, the web is the driving force behind the internet. The web runs on the HTTP protocol. Browsers are multi-protocol, i.e., they can talk to many different kinds of resources that make up the internet.

Technology has improved to such an extent that the web is now considered to be indispensable for education, business and entertainment. There are billion of pages on the web and millions more are added every day. The following figure illustrates the relationship between the internet and the no. of other applications.
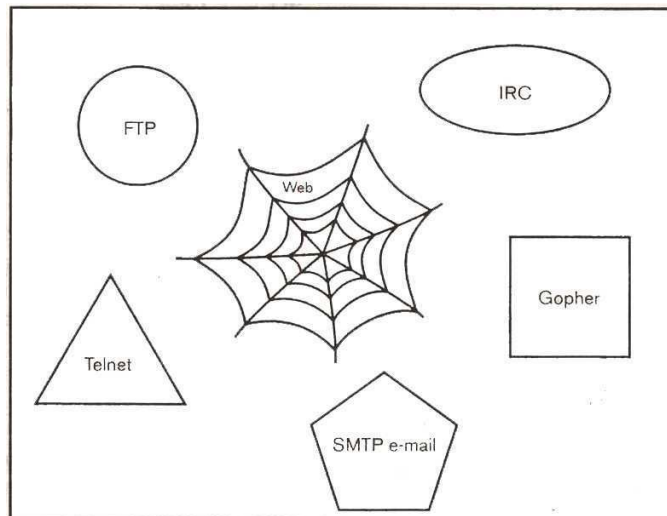
The relationship between the Web, the internet, and a number of common applications

As indicated in the above figure, each application uses the internet as a transport mechanism. A central idea in the development of the web was "URL" which uniquely identifies a resource on the web. This unique address make linking to any one web documents possible. The non-linear nature of the web is one of its main attraction. The sheer amount of information available on the web makes it the greatest collaborative non-governmental effort in the history of human-kind.

Web-browser details

Some of the interesting features of web-browsers are bookmarks, plug-ins, and helpers. Most of the browsers have a number of options that users can set some of them are

1. **Cookies** – user can ask to be notified before a cookie is written and user can then decide whether or not to allow the cookie to be written.

2. **Disk cache** – we can set the size of cache, which stores the HTML source code and images of web presentation you have visited. Then, If you reload one of these pages, the browser can load the cached copy and the page will appear very quickly.

3. **Fonts** – user can select a wanted font specification and also set default font size.

4. **Helper applications** – user may configure *helper applications* to handle contain types of data that the browser is enable to process. For example MS-word or PostScript files.

5. **Home page location** – user can specify the initial page that gets loaded when the browser is first launched.

6. **Images** – users can specify whether or not images are loaded. Options for colour selection are also available.

7. **Scripting options** – users can enable or (java or vb scripts) disable these type of scripts from running within user browser.

8. **Messages** – user can specify a default signature file or a default carbon copy (cc) address for outgoing messages. This can be set for regular email or for posts to newsgroups.

Note on Book-marks

A convenient feature of browsers allows a user to save the URL is called a "book-mark" or "favorite", with bookmark user can have his own set of book-marked pages. A collection of bookmarks is sometimes referred to as a hot-list or lists of favorites.

Many new users begin bookmarking a wide range of URL's with which they can return to later. The bookmark pull down menu can list all of user bookmarks, which appears in the browser's menu bar. Bookmark folders are also created using the browser's bookmark editor. Some browsers also allow the users to save bookmarks to a file.

The two main, and very different, reasons for saving a bookmark are

1. It is a page you expect to visit often.
2. It is a page user may never find again, so user bookmark it on the chance user will want to go back.

Some new version of browsers contains a feature called "what's new?" which automatically test your bookmarks and reports back on pages which are no longer available. This is a great way to eliminate outdated/not available bookmark URLs.

Plug-ins Vs Helper Applications

New web products and file formats (different type of resources) are constantly being developed. A web browser cannot handle every product and file format that currently exist or may exist in future i.e., browsers are not build to handle all data formats. Further more browsers are already huge programs to trying to build more features make them even larger.

Two possibilities, of extending the browser capabilities are

1. Plug-ins
2. Helper applications

These two extend the power of browser.

Plug-ins is more tightly integrated with the browser. So, there is a less work for the browser to do plug-ins, which are in the browser's plug-ins folder will be loaded at the time of launching browser. For example *macromedia's shockwave* is the plug-in, capable of playing audio, movie and running animations. The *Adobe Acrobat* plug-in is another example. Plug-ins run normally in the browser window but there are exceptions.

Helper applications, or Helpers, are stand-alone programs that are used to process or display data that is not directly integrated in to a web page. Helper display data in their own window. The browser activates the appropriate helper application when it encounters a format that it does not know how to handle.

Plug-ins	Helper Applications
1. Closely tied to browser.	1. Stand alone programs.
2. Displays inside browser window	2. Displays in its own window.
3. Installation involves downloading the plug-in and running a procedure	3. Configuring involves downloading the helper application and editing user preferences.
4. Broad selection available.	4. Broad selection available.
5. Launches quickly.	5. May launch slower than plug-ins.

Web-writing Styles

Writing style require for a web page is different than that of writing style for printed page

Readers usually spent less time at a web page than they do with off-line page.Web-pages are typically very short where off-line material as large in size and greater life.So, to design a web page, designers should have presentation capabilities to grab the attention. We-pages are dynamic and also often involve multi-media. In the case of off-line material, the quality of writing holds the reader's attention. The following are the few examples for different web writing styles with different goals.

The Biography

The web page has some background and is covered with information. The page must contain image of an author with numerous hyperlinks. The hyperlinks are displayed as a group of images as well as clickable text.

Each image incorporates a short, descriptive phrase explaining where the hyperlink leads. The use of multimedia and choice of pages and their connections are user choice.

The Business Exposition

The web page must catch the attention of the user. The menu is located in an easy-to-use spot, and very little must be read before a hyperlink can be selected. The page must be compact, colorful, and easy to explore. The writing style must be simple and direct. The page has a descriptive title, an effective header, a short footer, and a centrally placed, well-designed menu.

The Guide

The page starts with a descriptive title. The image map should appear at the top of every page. The page should provide convenient information about bands. The graphics are well done, the page is easy to read, and the hyperlinks are easy to follow. The image map at the top of the screen and the search mechanism allow you to locate the information quickly. The color scheme must be appealing. Notice the alternating-color horizontal bars that separate the different sections.

The presentation is coherent, informative, and easy to use. It creates an uncluttered user-friendly environment.

The Tutorial

The presentation packed with information must be impressive. The text phrases are easy to read. The select menu allow the user to decide what topic to purse next. All the presentation must be user-friendly. The writing must be short, descriptive, and light but informative. The graphics spruce up the appearance of the page.

Web presentation outline, design and management

A web presentation is a collection of associated hyperlinked web pages that have some underlying theme or concept. The Key elements in an effective web presentation are

1. **Details**:– A presentation that includes well-thought-out touches can make a positive impression on the reader. Good choices of background color, headers, footers and even appropriate size of fonts are all important.
2. **Coding**:- A competent HTML programmer uses the appropriate elements of style in the web page
3. **Features**:- A few "bells and whistles" can improve the feel of a set of web-pages.For example animated GIF, flash screens or applets
4. **Graphics**:- A modest use of in-line images is probably one of the most significant way to enhance your design
5. **Layout**:- A poor layout will discourage people from spending too much time on the presentation. So, web pages with convenient navigation make more people to visit.
6. **Writing quality**:- Good writing and an interesting style are also necessary for a solid presentation.
7. **Load time**:- Care should be taken not to include two many graphics or any large graphics
8. **Hyperlinks**:- Navigation is a key element to any good web presentation. If user can move around the pages easily, he will be more impressed.

Goal Setting

The important steps in producing a high-caliber presentation are goal Setting, outlining, navigating, designing, coding and revising.

The objective of goal setting is to decide on specific parameters for your web presentation, to aid you in focussing your project. Most people find it helpful to write down their goals. The written records allow you to go back and see how successful you were at accomplishing your goals. Each project will merit its own additional questions.

Outlining

Once the goal is set for the web presentation it is a good idea to produce an outline. The subject matter, combined with goals, will dictate the way the material is most naturally portioned. Most users work

best if they design their outline in HTML, rather than just handwriting it on paper. Actually seeing the outline on-line seems to help users to decide what is missing, who needs to be deleted, and what needs to be moved.

Navigation tools

These tools provide hyper-links that allow you to move more smoothly through your web pages. Readers should be able to jump to any other page directly according to their interest. The organization of a web presentation will dictate the nature of its accompanying navigational aids. Some of general organizational arrangements are

a. **Circular**:-

This arrangement of web pages supports forward and backward movements through web pages. As illustrated in figure.

A four-page circular web presentation.
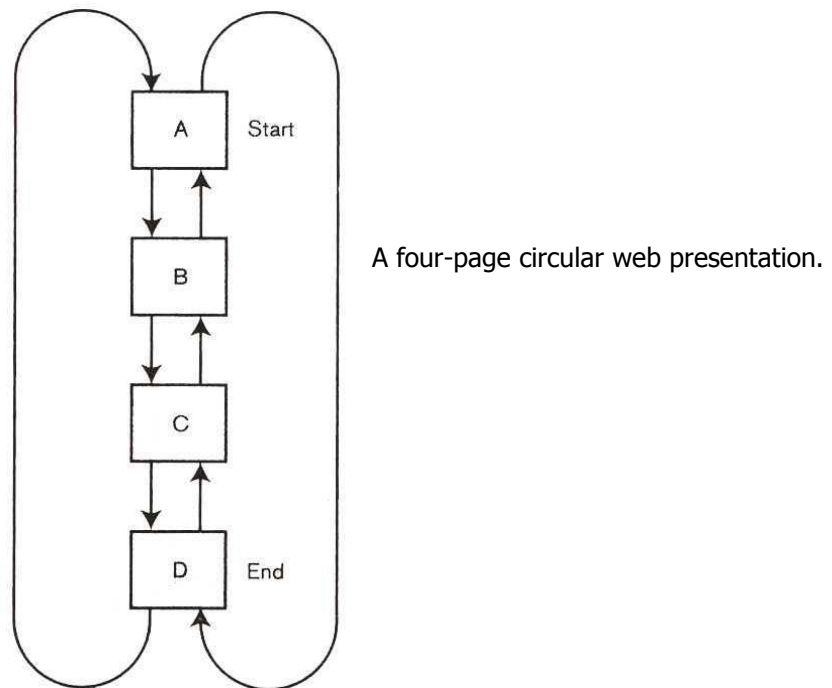
This is good for describing step-by- step procedures or instructions. Conceptually the pure circular organization is very clear. One draw back in this approach is that there is no chance to jump to the middle of the presentation. But to add a bit more complexity one can add hyper links to the first and last page to jump in to the middle of the presentation.

b. **Exploratory**:-

A nine-page exploratory Web presentation
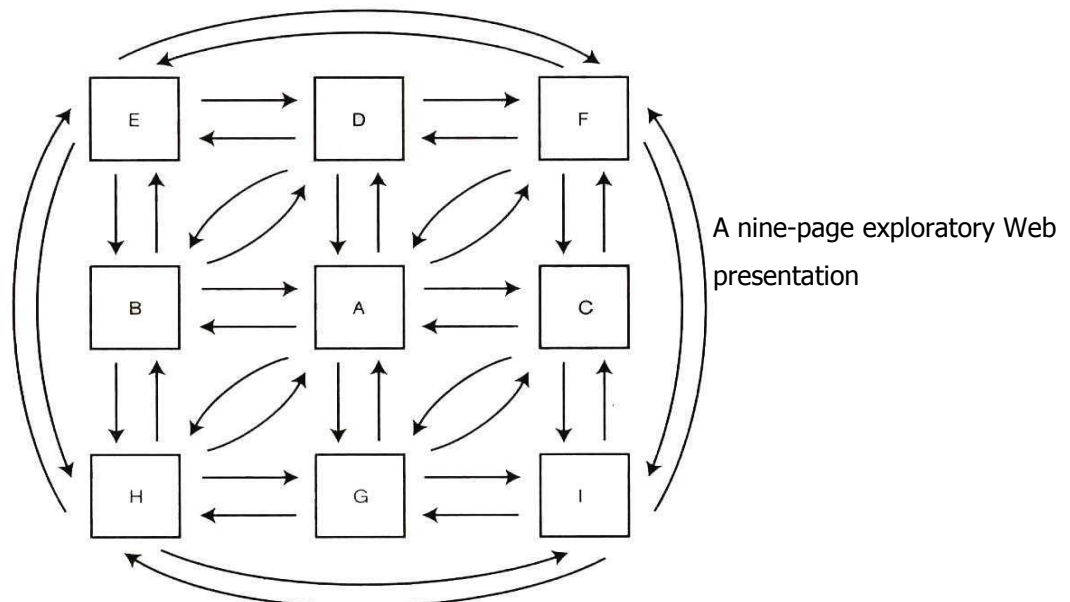
This arrangement allows jumping from nearly every page to nearly every other page. The first thing you need to notice about these arrangements is that there are more hyperlinks. But this arrangement gives the reader the freedom to move, as he desired, as illustrated in the figure.

Note that image maps work well in the explanatory type of organization

c. **Hierarchical**:-
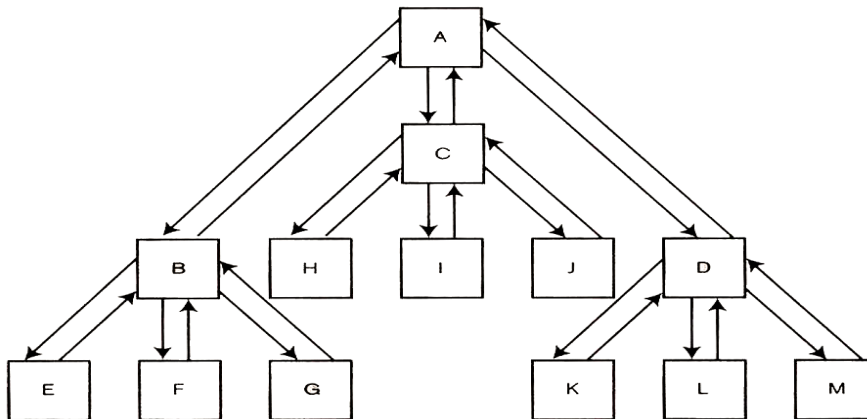
A thirteen-page hierarchical Web presentation.

The hierarchical arrangement permits a more limited number of hyperlinks from the introductory page and each succeeding page leads to additional hyper links. This arrangement yields a tree like directory structure. The fanout, defined as the maximum no. of hyperlinks available from any page should be kept small in this arrangement. In general it should be no more than ten hyperlinks. The depth of the web presentation i.e., levels of the tree should be restricted to five at most.

This model is well suited for describing organizations, institutes and companies, which has inherent hierarchy. So, as a conclusion try to incorporate best navigation in your web presentation depending on objective.

Designing & coding

To write an effective web presentation, the goal should be set and develop an outline and a global navigational design. Producing an HTML document from a design involves coding, as well as writing. There fore, it is necessary to develop a serious web presentation. The writing and coding are both essential, and they should take place in parallel. This is true whether an individual or a group is developing the presentation.

Revising

Having completed the first draft of the web presentation, fine-tuning is the crucial step for converting an average presentation into a excellent one. The goal at this point is to move forward with the remaining work of perfecting the presentation.

Registering Web pages

Registering a web page means having the page indexed by a search engine or having other prominent pages display hyperlinks to the page. The goal is to have the page viewed by more user i.e., search engine indexes a page then it return the page to user's queries. Many search engines allow you to fill out and submit an on-line form telling the search engine about your page. Search engine designers want their programs to know about more web pages then any other search engine. In general the speed of the search and the number of hits a search engine finds judge the performance of search engine.

Some search engines may index your WebPages automatically, since they have techniques for "going out and seeing" i.e., pro-active registration. People with commercial pages most commonly use this service.

UNIT-II

SEARCHING THE WORLD WIDE WEB

The rapid growth of the web as well as its huge size, peoples are spending their time trying to find things on the web rather than actually reading the material 'web directories' and 'search engines' are the tools which allow you to find information more quickly and easily i.e., these two are the basic approaches which are evolved in response to the need to organize and locate.

A. Web directories or Directories

The first method of finding and organizing web information is the directory approach. A web directory or "web-guide" is a hierarchical representation of hyperlinks. The top level of directory provides a wide range of general topics such as Arts, Education, Entertainment, News, Science, Sports and so on. For each of these topics there may be hyperlinks which leads to more specialized sub topics. They intern may have a number of sub-topics and so on, until you reach a specific web page.

It is very easy to use and also you need to know exactly what for you are looking i.e., you can continue to move down through the hierarchy by selecting sub-categories and narrowing the search at each level.

Directories are useful if you want to explore a topic and its related areas. If you are interested in a very specific topic then search engine or Metasearch engines are more useful.

Popular directories –

www. Yahoo.com

www.hotmail.com

www.google.com

www.aol.com

www.infoseek.com

B. Search engines

This is second approach to organize and locate information on the web. Search engine is a computer program that does

1. Allow you to submit a query that consists of a word or phrase, which describes the specific information.
2. It searches in its database to try to match your query.
3. Returns a list of clickable URLs, the list is usually ordered i.e., better matches appears at the top.
4. It also permits to revise and resubmit a query

The user-friendliness and power of query languages vary from search engine to search engine. Once you learn to use a specific search engine query language effectively. You can quickly search a very narrow topics.

The popular search engine are –

www.google.com

www.infoseek.com

www.webcrawler.com

www.yahoo.com

www.alo.com

www.altavista.com etc

C. Metasearch engines

These Metasearch engines are all-in-one search engines, which performs a search by calling more than one search engine. The results are without duplicate and also ranked according to match. The advantage of Metasearch engine is that you can access no. of different search engines with a single query. The disadvantage is that you need to spend more time evaluating the results to decide which hyperlinks to follow. So, as a conclusion for very specific topic, which is hard-to-locate Metasearch engine can often be a good starting point.

Popular Metasearch engines are

www.metasearch.com
www.metafind.com
www.metacrawler.com etc

D. White pages

White pages provide you with an on-line mechanism for looking up information about individuals. These pages can be use to track down telephone numbers, s-mail addresses and e-mail addresses. Users can request that information about them be put in to a database. For a given set of white pages. Many of the white pages are very comprehensive listing information about people, who are not even listed in the telephone book.

When you submit a request for information about a person some of the white page services may make a record of your requests obviously people can abuse white pages and some people feel that white pages are an invasion of their privacy.

popular white pages are

        www.whowhere.com

        www.bigfoot.com etc

Search Fundamentals

Some of the common search related terms are –

1. **Search tool**:- Mechanism for locating information on the web.
2. **Query**: - Description of information being sort.
3. **Query syntax**:- A set of rules to form a legal query.
4. **Hit**: - A URL that a search engine returns in response to a query.
5. **Match:** - A synonym for hit
6. **Relevany score**:- A value that indicates how close a match a URL was to a query.
7. **Pattern matching queries**:- The most basic type of query is a pattern matching query. User can formulate it using a key word or a group of keywords. The search engine returns the URLs, which contains "these keywords". The meaning of this phrase varies between search engines. Some search engines perform a process called "stemming", which means they use variations on the endings of words in your query.

For example, the search engine may try the plural form of words as well as the singular or vice versa. The query with the quotes is the return URL contains complete keywords. It also important to spell the keyword correctly because misspelling a keyword might result in zero hits.

Boolean Queries

Boolean queries involves the Boolean operations (AND, OR, NOT) and most search engines allow you to formulate Boolean queries. For example "paint" and "house" or "Information" & "Technology" i.e., some search engines allows you to do multiple "ands". The exact syntax of a query will vary from search engine to search engine. For example, some search engines use "+" for AND, and nothing for "OR", and – for NOT.

Search domain

Most search tools provide some flexibility in the choice of domains to search. For example, you can search the web, newsgroups, newsgroups, specialized databases or the internet. Depending on the item for which you are looking, Search in the specific domain first, is less time consuming and more efficient.

Search strategies

Determining which search engine to use can be challenging. But one can try to find one based on the following

1. Possesses User friendly interface.
2. Has easy-to-understand, Comprehensive documentation.
3. Speed (time required to process).
4. No. of return hits.
5. Good job in assigning relevance scores.

If you can find a search engine that meets most of these criteria, you should can concentrate on learning it well.

How does a search engine works (components of search engine)

If you understand how a search tool works ,there is a good chance to use it more effectively. To describe how a search engine works, we split up its functions into a number of following components.

1. User interface

The user interface must provide a mechanism by which a user can submit queries to the search engine. Universally this is done using forms. In addition the user interface should be friendly and visually appealing. Finally the user interface needs to display the results of the search in a convenient way along with the relevancy score. With this the user can make an informed choice as to which hyperlinks to follow.

2. Searcher

This is a program that uses the search engines index and database to see if any matches can be found for the query. User query must first be transformed into a syntax that the searcher can process. More over a highly efficient search strategy must be applied. Computer scientists have spent years developing efficient search and sorting strategies. This sophisticated algorithms are implemented in the searcher.

3. Evaluator

The searcher component locates URLs that match your query (result set) not all of the URLs will match your query equally well. So, the ranking process is carried out by the "evaluator" ,a program that assigns a relevancy score to each URL in the result set.The relevancy score is an indication of how well a given page matched your query.

The process of computing relevancy score varies from search engine to search engine. A number of different factors are involved, and each one contributes a different percentage towards the overall ranking of a page.

1. "How many times" the search word appears in the page
2. Whether the search words appears in the title/subtitle
3. The proximity of the query words tothe beginning of the web page
4. Whether the query words appear in the CONTENT attribute of the META tag.
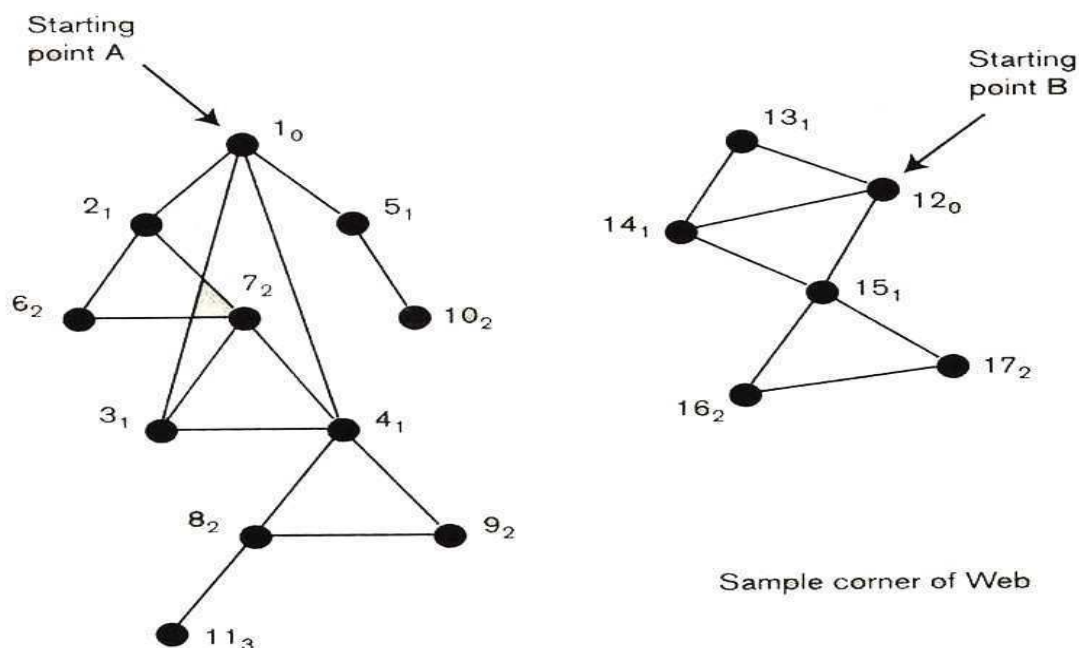5. How many of the query words appear in the document.

The algorithms used by evaluators are imperfect but they are getting better day-by-day

4. Gatherer

Search engine obtains its information by using "gatherer" – a program that traverses the web and collects information about web documents. This program does not collect the information every time a query is made. Rather, the gatherer is run at regular intervals to incorporate URLs into the search engine's database. Alternate names for this program are bot, crawler, robot, spider and worm.

A Gatherer may employ following two different methods to search the web for new pages. In practice hybrids of these two procedures are often used. These two techniques are well-known search strategies.

a) Breadth First Search (BFS)

Breadth Fist Search proceeds in levels "across" the pages. The Gatherer begins at a particular point and explores all pages that it can reach by using one hyperlink from the starting page. Once it has exhausted all web pages at that one level, it explores all of the web pages that it can be reached by one hyperlink from any page that was discovered at level one. This process is repeated level-by-level until no web pages are found. Then the gatherer may need to jump to a new starting point.

For example as illustrated in the above figure having found page 11, the Gatherer has exhausted the entire collection of web pages hyperlinked to the starting point 'A'. The gatherer than chooses a new starting point and continues from there.

b) Depth First Search (DFS) method
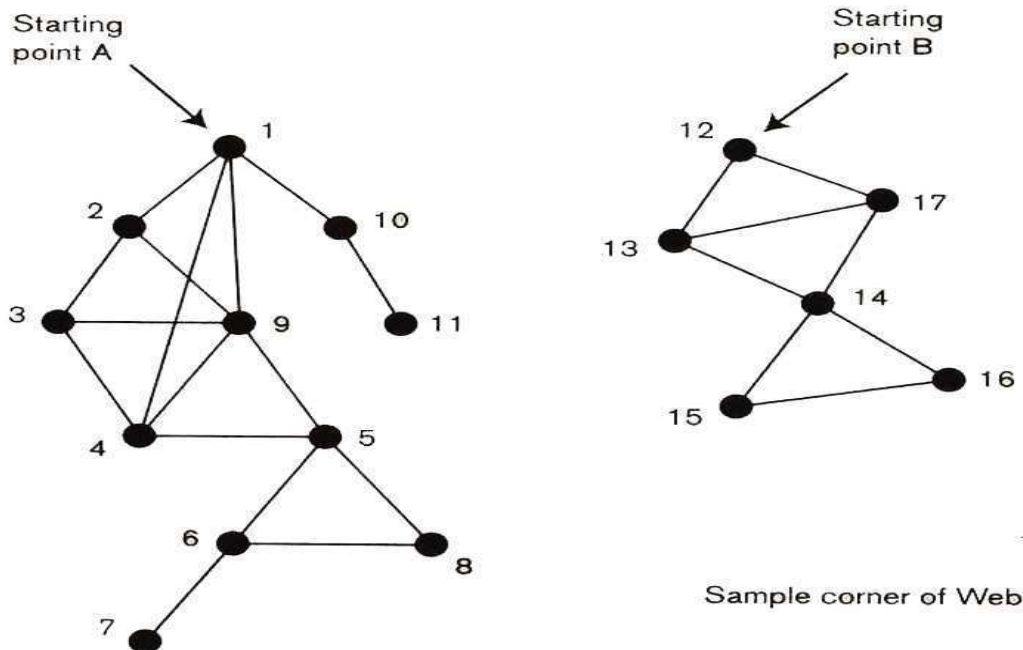
A DFS proceeds by following a chain of hyperlinks "down" as per as possible. The gatherer begins at a particular web page and explores one of its hyperlinks at the new pages. The Gatherer follows another hyperlink and so on. In contrast to the BFS hyperlinks on a given page are not fully exhausted before the Gatherer goes to the next level page. When the Gatherer reaches a page from which no new pages can be discovered it back-tracks until it go forward again and discover new pages i.e., the search goes as deep into the document collection as possible before back-tracking.

As with when no more pages can be located often full back-tracking DFS jumps to a new starting point. For example as explained in the above figure have found 11th page DFS jumps to a new starting point.

Facts about Gatherer

1. Gatherers place a very heavy load on web servers.
2. Gatherers algorithm is much more complex when it deals with documents includes frames.
3. The best gathering strategy depends on the underlying collection of documents.
4. Some Gatherers may only retrieve the head of a document, while others retrieve the entire content of the page.

5. Indexer

Once the Gatherer retrieves information about web pages the information is put into a database and indexed. The indexer creates a set of keys that organizes the data, so that high-speed electronic searches can be conducted to locate and retrieve wanted information quickly.

TELNET AND FILE TRANSFER PROTOCOL (FTP)

Telnet:-

Telnet and Remote log-in are two programs that allow you to log-in to another computer. These two programs allow you to use and interact with software which is the remote mission. To do this user needs second computer account that is accessible. This second computer is usually at a different physical location hence the phrase "Remote-long-in".

The Telnet command uses the Telnet protocol to log-in to a remote computer on the Internet. A wide range of Telnet clients provide user friendly interfaces. One of the ways of invoking Telnet illustrated in the below figure
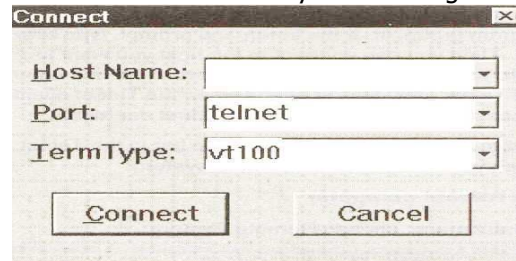
A Telnet client can usually be launched from one of the systems menu, then the above interface appears through which user can select the remote system option. On UNIX systems, user can type the command and receive the telnet prompt "telnet >". The host name is the machine domain name or the numerical address of the machine. Once user specified the host name and establish a connection user can log-in and begin executing commands on the remote machine. It is usually necessary to have an account on the remote system in order to telnet /connect to it. However some systems allow "guests" to access their database without account (anonymous).

The login command is similar to Telnet except that it provides the remote computer with information about where you are logging-in from. On the Unix systems the list of host names is given in a hidden file called "rhosts". As with Telnet, once you are logged into a remote machine you will not be able to execute commands using your own local log-in sessions. So, as a conclusion Telnet is a more secure remote log-in mechanism than rlog-in.

FTP:- (File Transfer Protocol)

"File Transfer" is an application that allows you to transfer files between two computers on the Internet or on the same network. Following two most important facilities provided by File Transfer application.

1. Copying a file from another computer to your computer
2. Sending a file from your computer to another computer

Below figure illustrates the idea of the File Transfer process
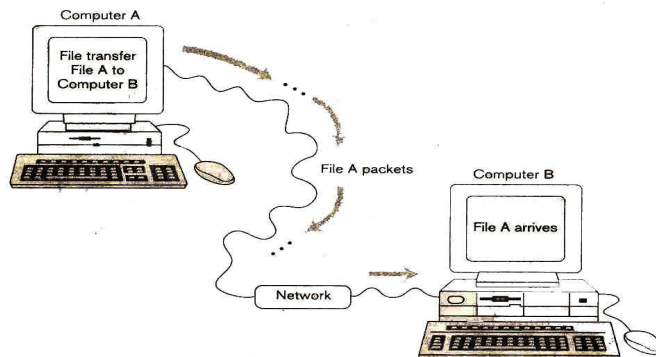
File Transfer is the fastest and most convenient method to transfer file, however there are other ways of copying a file from one computer to other. For example if the file is not too large, You may be able to e-mail the file to an account on the second machine.

Graphical File Transfer Files:-

Graphical File Transfer clients are the easiest to use. These applications display the sending computer's file system in one window and the receiving computer's file system in a second window as shown in the below figure. In this scenario you first need to login to each computer to prevent unauthorized File transfers. To transfer a file from one system to another you can "drag" using mouse and drop it on the destination system. One important point is the transfer setting mode, which can specify by clicking on a button. Most FTP clients have a "text transfer mode" and a "binary transfer mode". Mode should be set to binary when transferring images.

Text based File Transfer clients:-

Along with graphical systems there are text based file transfer clients. For example you can launch the UNIX FTP client by typing following command   % ftp hostname

Host name is the name of the computer with which you want to exchange files. Once you have successfully initiated on "FTP" session you will be greeted by the prompt **ftp:>**. At this prompt can enter the following commands, to transfer the files.

	Command	Description
1	Bye	Terminate the ftp session
2	Cd	Change directory
3	Get	Copy a file
4	Help	View list of commands
5	ls	List the files in current directory
6	Put	Send a copy of a file
7	pwd	Print the name of the current directory

File Compression:-

It is wise to compress files which need to be transferred between two computers via network because compressing a file makes it smaller and can be transferred quickly.

A wide variety of compression tools are available for example

1. Compress
2. gzip
3. pkzip

File extensions will usually alert you to whether or not the file is compressed. Ex.

".z" (compress), ".gzip" (gzip), ".zip" (pkzip).

 You need to decompress the file to use it i.e., one must use the appropriate decompression tool which depends on how the file was compressed. There are number of web sites from which you can download compression and decompression programs. File compression is on extensive field in computer science and algorithms used are very interesting.

Computer Viruses:-

In 1983, "Fred Cohen" coined the term "computer-virus" and a year later 1984 expanded his definition as,

"A virus can spread, through out a computer system or network using the authorizations of every user using it to infect their programs. Every program that gets infected may also acts as a viruses and thus the infection grows". In contrast to viruses, "computer-worms" copy themselves from system-to-system, for example a mass mailing e-mail worm will send copies of itself via e-mail "Trojans" another form of "Malware" (virus) which are associated with remote access programs that perform illicit operations such as password stealing. So, as a conclusion

- Viruses infect other files (program text, pdf and image etc)
- Worm make copies to themselves
- Trojans perform illicit actions but do not spread
- Malware is all encompassing term that describe any malware software program or file operating without explicit concern.

"Adware" is a program that installs an additional component that feeds advertising or often installs a tool bar in your browser. "Spyware" monitors your computer and internet use. For example key loggers, that records key strokes.

Definition: " A virus reproduces, usually without your permission or knowledge. In general terms they have an infection phrase where they provide widely and an attack phrase where they do what ever damages they are program to do, (if any)".

"A virus is a program, that reproduces its own code by attaching itself to other executable file in such a way that its code is executed when the infected file is executed. viruses coming in many types using many different infecting strategies".

Viruses can infect a no. of different portions of the computer operating and the file system. This includes

1. System sectors
2. Files (data, image etc)
3. Macros
4. Companion files

5. Disk clusters

6. Batch files

7. Source code

8. Works – using vb code

Safe computing practices:-

1. Update anti-virus software

2. Safe boot disk

3. Hard disk boot

4. Use "rtf" (rich text format) not doc format

5. Consider alternate software

6. Don't open attachments (specially when they are from unknown)

7. Turn of preview

8. Disable scripting

9. Show file extensions

10. Protect medias (read-only)

11. Back-up copy, finally most importantly back-up.

BASIC HTML

Semantic v/s syntactic based style types

Semantic based style types:- [content based style types]

HTML tags are used to indicate the content of the text for example the text may be an address or citation and the browser interprets address and citations according to built-in settings. You merely tell the browser the category into which the text falls.

Examples:-

Emphasis Tag: The Emphasis Tag, <EM>, with its corresponding </EM> ending tag is used for highlighting text.

Example: Meet me to night. It is <EM> important </EM>

Strong Tag: The strong tag,<STRONG>, is used to indicate an even higher level of emphasis.

Example: I <STRONG> love <STRONG> you Juliet. Yours, Romeo

Citation Tag: The citation tag, <CITE>, is used to specify a reference. A collection of citation creates a bibliography. Every reference is bracketed between <CITE> and </CITE>.

Example: lots of interesting information about networking can be found in Tannenbaum's book.

<CITE> Andrew S. Tannenbaum

Computer Networks

Prentice Hall

1996

</CITE>

Address Tag: The address Tag,<ADDRESS>,is used to indicate an address. If it is used throughout a series of web pages, it is easy to automate the process of developing an address book for the pages.Tag ended with </ADDRESS>.

Example:

     Please send e-mail to

     <ADDRESS> Paula Ferreria

     412 Jenkins avenue

     Nashville, Tannessee 37212

     </ADDRESS>

Keyboard Tag : This tag is used to delineate keyboard input.

Example: At the UNIX prompt type <KBD>ls –l</KBD> in order to list your files in the long form.

Variable Tag: The variable tag is used to indicate an expression, usually just a sequence of letters that has a number of different possible values. This tag starts with   <VAR> and ends with </VAR>.

In some operating systems, the DELETE command is used to delete a file. The "argument" to the command is a file name.

Example:

To delete a file in the current folder use the **DELETE <**VAR> file1 <VAR> command.

Be careful ! Once the file is deleted, there is no way to get it back.

Code Tag: The code tag,<CODE>, is used for specifying program code.

Example: beginning programmers often have difficulty understanding why the following program does not stop:

<CODE> let I have the value 1

while I have the value 1

increment I

< /CODE**>**

Small Tag: The method for reducing the relative font size is to use the small tag,<SMALL>. Text appearing in this tag is made proportionally smaller than the surrounding text. It is closed with </SMALL>.

Example:

I thought I heard a voice coming from the floor. What I saw When I looked < SMALL> closely </SMALL> was mind boggling.

Big Tag: The big tag, <BIG>,plays the opposite role of the small tag.

Syntactic based style types:- [physical based style types]

In contrast to the semantic based style types, syntactic based style types allow you to tell the browser specifically, how you want the text to appear.

Example:-

You may want it to be in bold or italics then the browser formats the text in bold and italics i.e., in the syntactic specification the HTML programmer must describe all of the formatting details.

Example:

Bold Tag: The bold Tag , <B>, is used to make text in bold face. Most browsers darken the text and widen the letters.

Example:

<B> The mighty, Mighty Bosstones </B> have some lyrics that could be considered controversial.

Italic Tag: To place a portion of text in italics, use the italics tag, <I>. Italics might be a good choice for the text of a poem:

Mono spaced Typewriter   <I>

 When I met you my life was enhanced.

When I met you my heart danced.

When I met you I felt forever blessed.

Your image came to me as I ran out of time on the test

<I>

Mono spaced Typewriter Text Tag:

The typewiter text tag,<TT>, is used for placing text in a Mono spaced Typewriter font. This can be used to indicate that a certain phrase needs to be typed in.

Example: In DOS you enter <TT> DIR </TT> to obtain a directory listing of your files.

Strike Tag: The strike tag, <STRIKE>, may be used for crossing out a word by having a line drawn through it.If you have a business web page and want to indicate that an item is on sale, you can use the strike tag to show that prices have been slashed.

Example:

Nail polish now <STRIKE> 50 </STRIKE> 60 percent off.

Subscript Tag: The subscript tag ,<SUB>, is used to generate a subscript.

Example:

H₂O

Superscript Tag: The subscript tag ,<SUP>, is used to generate a superscript.

Underline Tag: The underline tag, <**U**>, is used to underline text.

Example:

<U> Huckleberry Finn </U> was written by Mark Twain.

Blink Tag: Flashing text is created using the blink tag, <BLINK>. Because most users find flashing text very

Annoying, it should be used very sparingly.

Example:

<BLINK> I'm annoying you, aren't I ? </BLINK>

Headers and Footers

Headers:- The beginning part of a html page is called the "header". Note that it is not header with the contents of the head tag i.e., the header is not formatted with in the head tag but in the body of a document. Most headers contain a subset of the following information.

1. The title of the page

2. Last update information

3. Signature of the page developer

4. An icon or logo associated with the page

5. A counter of the number of visitors

6. An advertisement etc.,

The purpose of the header is convey the most important information about the page and set the tone for the page. In any collection of related web pages, it is a good idea to use consistent headers. This helps the reader to determine boundaries of the presentation.

The HTML Tag is

<HR>

The horizontal rule tag has several attributes that are supported by most browsers. They are

WIDTH – attribute is used to specify how wide the horizontal should be. The default draws a line that crosses the entire width of the browser window. The value can be specified either as a percentage of the browser window's width, or as a fixed number of pixels.

Example: <HR WIDTH = "45%">

To produce a line 150 pixels wide, use:

<HR WIDTH = "150" >

SIZE – attribute allows to define a taller(thicker) line.

Example: To draw a Horizontal line across 75% of the screen that is 10 pixels high, the HTML code is

<HR WIDTH = "75%" SIZE = "10" >   The order of the attributes is not important.

NOSHADE – To produce a darker,flatter-looking horizontal line, use the NOSHADE attribute, which functions   like a switch and has no value.

ALIGN – may have any of the following values: **left**, **right**, **center**

Example: HTML code to produce the horizontal line is

<HR ALIGN = "center" NOSHADE SIZE = "4" WIDTH = "40%">

Footers:- The ending part of a web page is called the footer, most footers contain a subset of the following information.

1. Navigational aides

2. The web-masters name

3. Last update information

4. A mail-to hyperlink to the webmaster

5. A hyper link to a Frequently asked questions

6. A copy right notice

7. Publication date

8. Acknowledgements etc.,

The purpose of the footer is to convey additional important information about a page. For the collection of related web pages, is a good idea to use consistent footers similar to the headers.

LISTS

A lists are used when data are to be mentioned in the form of points [causes of a particular issue or list of items etc.,]. List break up monotony of a long paragraph and direct the readers attention to the essential points.

In HTML lists are segregated into three types

- Ordered lists
- Unordered lists
- Definition lists

Each list environment is well suited for one or more specific situations, the entire list is surrounded by a begin and an end list tag. List item tags are used to identify each entry in the list.

Unordered lists:-

These lists are also called "Bulleted lists". Unordered list are characterized by list items, that do not have numbers. These lists are useful when the points in the list have no particular order. They are delimited by the

<UL> . .. ……. …</UL>. Each point in the list is delimited by <LI></LI> as illustrated in the below example

Example:-

<UL>

<LI> A big red truck</LI>

<LI> An aeroplane</LI>

<LI>A nice soft tag</LI>

<LI>A drum set</LI>

<LI> A walkwan</LI>

</UL>

the syntax of <UL> of tag is

```
<UL type="     ">
<LI>          </LI>
   ⋮
</UL>
```

Type can be disc, square or circle with which you can change the appearance of the bullet. Note that we can also include custom bullet.

Ordered list:-

In an ordered list, the elements are items are prefixed by a symbol (1,2,3…..,A,B,C,…..a,b,c…,i,ii,iii…..) that denotes their relative order with in the list. The most commonly used symbols are nos, letters roman numerals. An order list is used for a series of sequential steps. The beginning and end tags for an ordered list are <OL></OL>. The beginning tag for each list item is <LI>, the end tag for list item is optional. By default, the items in an order lists are numbered using number.

Ex:-

<OL>

<LI>red

<LI>orange

<LI>blue</OL>

The syntax of <OL> tag is,

```
<OL type="     " START="    ">
<LI>          </LI>
   ⋮
</OL>
```

Where type can be 1,a,A,i,I and start is the first item number. So, it is possible to begin numbering from a value other than one, which the help of value to the START attribute.

The list item tag also as an attribute. The value attribute of the list item tag can be used to change an items value as illustrated in the below example.

<OL>

<LI>step 1

<LI>step 2

<LI> value="8">step 8

<LI>step 9

</OL>

The succeeding items continue from the new value. The VALUE attribute may be used in a similar passion to change the numbering when letters or roman numerals are used.

Definition list: -

Definition list or unordered list in which each item as two parts. A term and its corresponding definition. The beginning and ending tags for the definition tags are

<DL> </DL> respectively

Each item in this list requires a definition term tag <DT> and each definition option used data definition tag <DD>

<DL>, <DT> and <DD> tags usage illustration with an example.

Example:-

<DL>

<DT><B>5k</B>

<DD> A sprint

<DT><B>10k</B>

<DD>a quick hard run

<DT><B>marathon</B>

<DD>a 29.9 mile run

</DL>

Notice that the browser will place each term on its own line and the definition is on the succeeding line and is slightly intended. Also observe the usage of <B> tag to make the headings bold.

The definition list environment can be used to present group items with customized bullets as shown in the below example

<DL>

<DT><IMG SRC="sai.jpg" ALT="not consider">

<DD> a sprint

<DT><IMG SRC="ram.jpg" ALT="hahnnn">

<DD>a quick hard run

</DL>

Nested List:-

It is possible to nest the different type of list with in one another or to nest multiple list of the same time (list layers). When nesting list environment we should not led them overlap i.e., the inner list environment must be closed before the outer list environment is closed. Nested lists are useful when you would like to expand on one or more items has illustrated in the below example.

<UL>

<LI><B><U>mammals</U></B>

<UL>

<LI>whale(blue)

<LI>cat

<LI>buffalo(water)

</UL>

<LI><B>Reptiles</B>

<UL>

<LI>Alligator

<LI>Lizard

<LI>Snakes

<UL>

<LI>Boa

<LI>cobra

<LI>pythan

</UL>

</UL>

<LI><B>insects</B>

<UL>

<LI>Fly

<LI>Hornet

<LI>Mosquito

</UL>

Notice that by default different bullets is used in the outer layer, middle layer and innermost layer. Using "type" attribute of the unordered list tag can change these symbols.

TABLES

Tables in HTML pages allow you to organize information in a row and column format. The horizontal and vertical lines are called "dividers". In addition to laying out information in a tabular format HTML tables are used to present any type of information. For which you want a lot of control over the position of the content. For example, HTML tables could be used to achieve a newspaper like appearance. Tables have many uses are achieving specific layout.

<Table>,<Tr>,<TD> tags:-

These three tags form the essential ingredients for creating a table

1. **<Table> tag**:-

This is the main tag which tells the browser that a table follows. It has size and border, width as attributes

2. **<Tr> tag**:-

A table row definition defines a horizontal row that consist of table data cells

3. **<TD> tag**:-

This tag specifies an individual block or cell in a table row

Table usage:-

The HTML table model allows authors to arrange data (text, image, marquee, links, another table, form, form fields etc) into rows and columns of cells. Each table may have an associated caption, which provides a short description of the table's purpose.

1. **Present tabular information**:-

Table is a better option, if you have information that is naturally divided into rows and columns

2. **Control layout**:-

If you want to control the lay out of the text, positions a group of images are present an extensive menu. Table is the better option to achieve wanted appearance.

3. **Express relationships**:-

Tables are usually a good mechanism to display relationships between a group of items clearly with tables we can also discover new relationships between group of items.

Example for usage of table

<table cellspacing="20" align="center" cellpadding=10 border=5 height=100>

<TR Height=100 valign=top>

<TD> cell </TD>

<TD>cell 2

<TD>cell 3

<TD valign=bottom>cell 4

</TR>

<TR>

<TD>cell 5

<TD>cell 6

<TD align="center"><marquee align="center"

<IMG Src="c:\sai.bmp width=100 height=100>

```
</marquee>
<TD><A HREF="#TOP">TOP</A>
</TR>
</TABLE>
```

- We can create a simple table with out border by not using border attribute in table tag
- End tags of </TR> and </TD> are optional begin of next <TD> will also indicate the end of perious<TD>
- Cell – spacing attribute is to control the space in between two cells
- Cell padding attribute is to control the space in between the boarder and text with in the cell
- Valign (vertical align) can be used both with <TR> and <TD>
- Cell contents can be a marquee or hyperlinks or any other HTML element.

Other HTML table tags:-

1. **Colspan and Rowspan**:-

If you want to extend any cell to the next cell, we can use column span attribute. This amounts the merging of two cells into one. (Similar to the merge cells feature in MS-Excel and MS-word).

Rowspan attribute can be used just like column span to merge two rows as illustrated in the below example.

2. **Table caption tag**:-

We can create captions for HTML tables by using the beginning and ending caption tag. By default the caption option is at the top of the table. However the align attribute of the caption tag can be used to position the caption at the bottom of the table.

3. **Colors**:-

The BG color attribute of the table, table data and table rows tags can be used to add color to any or all parts of your tables. The attribute background also can be used to have wanted background either to the cell, row and table.

Exercise-1: -

Create an HTML page with following table

```
<HTML>
<Head>
<Title> Tables</Title>
</Head>
<Body top margin= 100>
<Table cellspacing= '20' border= 5 align= "center"
<TR>
<TD>R1C1            <TD Rowspan= 3>R1c1
<TD>R1c2
<TD valign= bottom>R1c3
<TD valign= top>R1c4
<TD valign= center>R1,c5
<TR>
<TD>R2c1            <!------R2c1---->
<TD>R2c2
<TD><marquee behavior "alternate" align="center" loop=-1><Img SRC="c:\sai.bmp"></marquee>
<TD>R2c4
<TD>R2c5
<TR>
<TD>R3c1            <!----R3c1----->
<TD>R3c2            <TD colspan=3>R3c4
<TD>R3c3
<TD>R3c4
<TD><marquee logo=-1><Img SRC="c:\sai.jpg" height=20 width=10></marquee>
</table>
```

</body>

</Html>

1. Create an HTML page to display three images one after the other horizontally with 50 pixels as a space in between the images.[use table with three columns with cellspacing attribute].

2. Create a table of two rows three equal column table of six hyperlinks

3. Create a table where each cell is another 2x2 table i.e., nesting table with in another table [2x2 table]

<HTML>

<TITLE> Table with inner tables</Title>

<Body>

<Table cellspacing=20>

<TR>

<TD> <Table>

<TR>

<TD>R1c1 – A

<TD>R1c1 – B

<TR>

<TD>R2c1 – c

<TD>R2c1 – D </Table>

<TD>

<Table>

<TR>

<TD>R1c2 – A

<TD>R1c2 – B

<TR>

<TD>R1c2 – C

<TD>R1c2 – D

</Table>

<TR>

</Table></Html>

Note:- In CSS sheets are more meaningful option than tables to minimize the problems regarding lay out control of HTML document content.

UNIT – III

WEB GRAPHICS

The most popular types of graphics on web pages are

1. Gif – Graphics Interchange Format
2. Jpg or jpeg – joint photographic experts group
3. Png – portable network graphics
4. Tif – tagged image file format
5. Bmp – windows btmap format
6. Ico – windows icon format and fsh, lwf, pcx, tga, emf etc

In most of the instances "jpg" is more suitable(acceptable) to be web designers

GIF in detail:-

GIF images are identified by the "gif" extension. This format is commonly used to save simple images that requires a small number of colours. For example buttons, icons, and simple line drawings (cartoons). GIF was developed by compuserve and it uses a petended form of loseless compression called "LZW". GIF supports upto 256 colors which can be represented by using 8-bits.

Jpg:-

Images in this format are identified by the "jpg" file extension. This format is used to store complex images, which involves large no. of colors. For example photographs, art works etc. "Jpg" was developed by the "Joint

photographic Experts Group" and in contract to "gif" it uses a loss compression scheme. As the name implies this compression involves throwing away some of the information contained in the image. The key to the JPG compression is that, the quality different is not perceptible to the human eye.

PNG:-

Images stored in this format have ".png" as file extension. Like "GIF", "PNG" uses loss less compression. This means that photographs in this format may result in very large files. But for simple images "PNF" compresses slightly more than "gif". More over PNG supports full color representation of images and it is patent free format.

GIF Features:-

GIF files have several advantages as well as few disadvantages

Advantages:-

1. Excellent compression of images with blocks of solid color
2. GIF files can be partly transparent, showing the page background image or color through the image
3. Gif is the only the file format that can be animated
4. Gif files can be enlarged many times without quality loss and only marginal file size increase.

Disadvantages:-

1. GIF files are limited to using only 256 colors.
2. The size of the GIF file is more than Jpg equivalent because of compression without loss

To summarize the GIF format is an excellent choice. For many types of logos, solid color page effects or line art images made up of few colors.

Animated GIF's:-

An animated GIF is actually a series of images displayed in rapid succession (some speed). There by creating the illusion of continuous motion. GIF animation is a feature of "GIF89" which is a newer version of the GIF file format. Most browsers now support the GIF89 animation format and those that don't support will display either the first or last GIF image in the series.

To create an animated GIF you need a series of atleast two GIF images that will serve as frames. Animated GIFs can be created by assembling these frames with the help of Gif animation program. Each frame in the series as a slight variation. When the frames are displayed quickly, the image appears to move using image tag in the customary manner, you can include GIF images in your HTML document. The "stop" button on the browser can be used to freeze animated GIF's .

Sample animated programs:-

Microsoft GIF animator, GIF builder, GIF merge, GIF construction set

Interlaced GIFs:-

Normally, an image is displayed starting from top to bottom on your browser screen i.e., only half of the image is visible approximately half way through the download. Unlike this interlaced GIF's appears such a way that the whole image appears to load at one time but it starts out blurry and slowly improves as download proceeds.

Interlaced and non-interlaced GIF file contains the same image information and at the same size. The difference is the order in which the rows of data making of image are saved. In a 4-pass interlaced image format 4-passes are used to save the image each succeeding pass specifies more detail.

Transparent GIFs:-

Transpose GIFs can create a visual effect in which an image appears to be sitting on the surface of a web page i.e., they allow the background of the page to poke through the image. Transparent GIFs are created by image editing programs that provide the transparency function. Often more than one color or other, image can appear as a background of the image.

Image tag in detail:-

With this tag one can include web-graphic (any format) into the HTML document.

```
<P align = center>
<img  src = c:\sai.bmp width=100 height=100>
<hr>
<img src=c:\sai.bmp width=100 height=100>
```

<hr>

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

<p>

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

<Img src= "sai.bmp" Alt="xxx", height=100 width=30>

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

</p>

1. When we include an image within a line of text as shown in the above example the browser displays the image such that the bottom of the image is even with the bottom of the text as shown below.

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

To change the position of the image vertically with respect to the line of text we can use attribute "align" as shown in the below example.

<img src=sai.bmp Align="text top" ALT="xxx" height=200 width=100>

This causes the top of the image to align with the top of the text.

Other values to the attribute "Align": -

1. **Baseline or bottom**: - Align the bottom of the image with the baseline (default).
2. **Middle**:- Aligns the middle of the img with the baseline
3. **Abs bottom**: - Aligns the bottom of the image with the bottom of the lowest object in the line.
4. **Abs middle**: - Aligns the middle of the image with the middle of the line.
5. **Top**: - Aligns the top of the image with the top of the highest object in the line.
6. **Text top**: - Aligns the top of the image with the highest point of the text in the line.

Spacing control: -

By default the text that wraps around an image to too close to the image. The Horizontal space and Vertical space attributes of the image tag can be used to control the horizontal and vertical space respectively. These two can be assign with numeric values indicating the number of pickles.

Example: -

<Img src= "sai.bmp" hspace=100 vspace=100>

Centering images:- Using the value of left and right for the <img> tag align, you align your images with the left and right edges of the browser window. There are several ways to center images as illustrated below.

1. Use the paragraphs <p> tag

    Example:

    <p align=center>

    xxxxxxxxx

    <img src="sai.bmp">

    xxxxxxxxx

    </p>

2. Use the center tag

    <center><img src="........"></center>

3. Use the header tag

    <h3 align=center><img src="……….."></h3>

4. Use the division tag

5. <div align=center><img……….></div>

    Note that header tag is a symbiotic tag

Image borders: - The border attribute of the img tag allows you to create borders around images by selecting BORDER to "0" it is possible to eliminate border.

Low source images: - This provides a preview of what is coming i.e., this attribute allows another image (quickly loadable) to display in place of the intended image, while the page is loading. The "src" attribute should be specified before "lowsrc".

Example:-

<img src="sai.bmp" lowsrc="j.bmp">

To avoid confusion to the browsers, which are not supporting lowsrc and also note that height and width apply to both "src" and "lowsrc".

Image maps:- In the case of clickable image clicking any where on the image will activate same link. Image maps take this idea one step further, making it possible to load different html pages by mousing over and clicking on various parts of an image.

Image maps have become quite popular as navigational aids and some applications send themselves especially well to their use. For example on actual geographic map is an excellent candidate for an image map. A calendar of events is another example, which is well suited to the use of an image map.

Two types of image maps are currently being use

1. server side image maps
2. client side image maps

Client side image maps are a more recent development (10 years back), one needs to check the support for these image maps in the browser used. Server side image maps are supported by all browsers. Client side image maps are more efficient and easier to implement the server side image maps.

Client side image maps:-

In client side image maps the HTML document contains the map information and the browser perform the necessary calculations. The result is that the better performance.

There are two steps to create client side image maps

I.   For creating a client side image map you will need to specify your pixel location
a.   **Rectangle:-** Requires the upper left and lower right of the defined box
    For example:- A=(26,72) and B=(145,146)
b.   **Circle:-** Requires the center point and radius pixels
    For example:- A=(262,110) B=42
c.   **Polygon:-** Requires the coordinates of each vertex(point) of the area you want to define
    For example:- A(389,64), B(450,64), C(465,105), D(440,167)
II. Create an internal map file
a.   <Img src="test.gif" usemap="#test">
b.   <map name="test">
c.   <Area shap="Rect" cords="26, 72, 145, 146" href="c:\two.html">
d.   <Area shap="circle" cords="262, 110, 42" href="c:\three.html>
e.   <Area shap="polygon" cords="389, 64, 440, 64, 465, 105, 440, 147, 389, 149, 365, 105" href="c:\four.html">
f.   <Area shap="Rect" cords="0, 0, 499, 212" href="c:\one.html">
g.   </map>

Details:-

♦   First line specifies the image used for the client side image map. It also tells to the browser were to look for the internal map file. In above example use map="#test" points the browser to the correct location of the internal map file. Note that internal map file can begin any where in your html document, but name should be same and also you need to start the name with the point(#) sign.

♦   Second line marks the beginning of image map file i.e., a destination marker.

♦   Lines 3 – 5 identify three hot spots in our image and their corresponding URL's. you should replace these lines with your specific pixel location and URL's.

♦ Sixth line specifies the pixel location for the entire gif image, which identifies default URL. Note that it must be the last hot spot listed in your internal map file.

♦ Last line contains the ending tag for the image map.

In some cases it may be advantages to have a separate map file containing the map tag. To point to the map files, if it is separate specify the file name before the # symbol in the use map attribute of the image tag. This is similar to what you do when referring to a hyperlink labeled by the name attribute of the anchor tag.

Server – side image maps:-

A server side image maps involve three components

1. An image that is used as the image map

2. A map file that defines the areas of the image and their corresponding URLs

3. An image map program

The map file and image map program must reside on the server i.e., each time a user click on an area of user map a connection is made to the server and the image map program handles the request. The browser sends the location of the mouse click in the form of (x, y) coordinates then the image map program which resides on the server performs calculations to determine the associated URL. The corresponding document is sent to the client to satisfy the request.

Server – side image map plays an extra burden on the server since they require the web server to perform calculations. This results in a delay between clicking and resulting web page. Clint side image maps are remedy to this delay.

Scanners:-

Scanners have become an important part of the home office over the last few years. Scanner technology is everywhere and used in many ways. Scanners can convert an image to a digital format i.e., suitable for manipulation by computers.

Applications of scanners:-

1. By using OCR (optical character recognition) software scanned documents can be converted into a format suitable for text editing. The OCR software examines each character of the scanned document and attempts to guess what the character is by comparing it to a database of character sheets. OCR software is fairly accurate and it is often included when a scanner is purchased.

2. A digital copy of a scan document can be stored on disk and can then be printed, faxed or utilized in another manner i.e., scanners can be used as a sort of copiers.

Scanner types:-

Four types of scanners are currently on market

1. **Flatbed scanners**:- Also called desktop scanner are the most versatile and commonly used scanners. Flatted scanner are remains stationery and document also remain stationery i.e., the scanner looks like a small phots copier. The CCD (charge couple device) and light pass over the document during the scanning process. These scanners are good for creating digital images, OCR scan and document images.

2. **Sheet-fed scanners**:- These are similar to flatbed scanners except the document is moved and the scan head is immobile. This scanner look like a small portable printer i.e., sheet-fade scanners are similar than flat-bed scanners and larger than hand-held scanners. Most sheet-fed scanners don't currently support colors. However this is not an issue when documents are scanned for text recognition.

3. **Hand – held scanners**:- Uses the same basic technology as a flat-bed scanner but relay on the user to move them instead of a motorized belt. This type of scanners typically doesn't provide good image quality, however more useful for quickly capturing text.

4. **Drum scanners**:- Used by the publishing industry to capture detail images. They use a technology called a photo-multiplied tube (PMT). In PMT the document to be scanned mounted on a glass cylinder at the center of the cylinder is a sensor, which splits lights bounced from the document into three beams to provide qualitative images.

Factors affecting image load type:-

The size of an image file is the major factor in the amount of time, it takes to transmit the image over a network, generally higher quality images require larger file sizes.

Suggestions for developing quick loading images are

♦ Use the appropriate file format for the type of image you are displaying. (jpeg – for photograph and realistic art works gif or png – for icons, line diagrams, logos and images with limited colors)

♦ Use the height and width attributes of the image tag to provide the browser with the dimensions of the image.

♦ Use thumb-nail sketches, when images are large; which gives the user the option the images and also place the size of the image adjacent to the thumb-nail sketch to indicate the needed load time to the user.

♦ Increase the amount of compression for your jpeg images but note that this will result in slightly poorer quality image

♦ Use images only, when they clearly enhance a web presentation. Another wise there is no point in forcing users to spend the extra time to downloading them.

ADVANCED HTML (CHAPTER – 9)

Frames:-

Frames are an important HTML feature, which can give your pages a cleaner look and make them easier to navigate. Frames allow you to divide a browser's window in to several independent parts. Frames are now considered **"standard HTML"**

Frame usage:-

The following situations are appropriate to use frames

1. If you have a collection of documents that share information, you may want to display the common material in a frame.

   For example a header or footer put in to a small frame. Another example frame can be display a company logo, which is always visible.

2. **Form verification**:- If the user is to submit a form, displaying original information in one frame and the information received from the server in another frame side-by-side will make the user to compare and correct.

3. If your pages have table of contents or an index that you want to remain on screen. For navigational purposes you can place this material in a separate frame. For effective navigation. The effective alternative HTML technique for the frame is table.

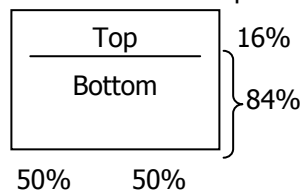**Frame tag**:-

A group of frames in a single browser window is called a frame set, the tag are <frame set>, </frame set> which this tag the browser window can be partition, they by using <frame> tag we can tell the browser what to load into the different frames, as illustrated in the below example.

<HTML>

<head>

<title>My first Frame</title>

</head>

<frameset cols="50%, 50%"> - Note frame set as a container tag which as both opening and closing tags

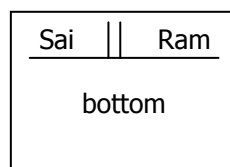<frame src="one.html">   - end tag is optional

<frame src="two.html">   - content of each frame

</frame set>

</html>

Note:- We can also divide into more than two portions (columns) by specifying more values to the attribute "cols" for example
<frameset cols="20%, 20%, 20%, 20%, 20%"> will divide window into five equivalent portions.
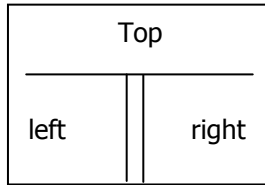
1. <frameset rows="16%, 84%">

     <frame src="top.html" name=top>
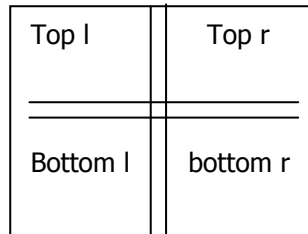
     <frame src="bottom.html" name=bottom>

     </frameset>

2. <frameset rows="16%, 84%">

     <frameset cols="50%, 50%">

          <frame src="sai.html" name=sai>

          <frame src="ram.html" name=ram>
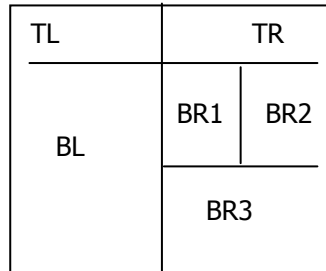
</frameset>

<frame src="bottom.html" name=bottom>

</frameset>

3. <frameset rows="16%, 84%">
    <frame src="top.html" name=top>
<frameset cols="50%, 50%">
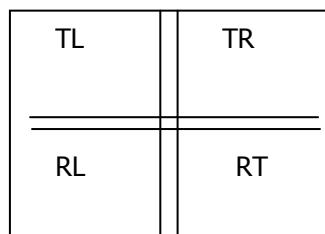   <frame src="one.html" name=left>
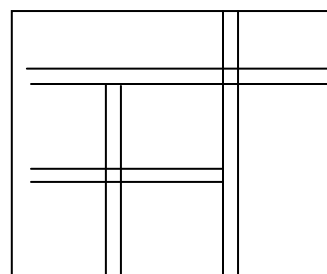   <frame src="two.html" name=right>
</frameset>
</frameset>

4. <frameset rows="50%, 50%">
     <frameset cols="50%, 50%">
    <frame ………>
    <frame ……..>
    </frameset>   <frameset rows………, cols…….>
    <frameset cols="50%, 50%">
    <frame ……….>   (or)   <frame …….>
    <frame ……….>   <frame ……>
    <frame ……….>   <frame ……>
    </frameset>   <frameset>

5. <frameset rows="16%, 84%" cols="50%, 50%">
     <frame ……..>
     <frame ……..>
     <frame ……..>
    <frameset rows="50%, 50%">
    <frameset cols="50%, 50%">
    <frame ……….>
    <frame ……….>
    </frameset>
    <frame ……….>
    </frameset>
    </frameset>

6. <frameset rows="50%, 50%", cols="50%, 50%">
    <frame ……….>
    <frame ……….>
    <frame ……….>
    <frame ……….> </frameset>

7. <frameset rows="16%, 84%", cols=50%, 50%>
    <frame ……….>
    <frame ……….>
    <frameset rows="50%, 50%, cols=50%, 50%>
    <frame ……….>
    <frame ……….>
     <frame ……….>
     <frame ……….>
     </frameset>
     <frame ……….>
    </frameset>

Note:-

A file (html document) which specifies how the screen is divided into frames is called the "frameset".

We can add names to each frame window using attribute "name".

If you don't frame window to be resizeable simply add "no resize" to the frame lines (flag).

Frame syntax:-

<Frameset> is the main container for a frame, it has two attributes

Rows

Cols

"A frame document has no body" and no tags that would normally place in the body appear before the <frameset> tag. The <frameset> tag has a matching end tag </frameset> and with in the frameset we can only have other nested <frameset> tags, <frame> tag or the <no frames> tags.

Rows:- (Rows height value list)

This attribute takes a comma separated list of values. These values can be absolute pixel values, percentage value (1-100) or relative scaling values. The number of rows is implicit in the number of elements in the list.

A simple numeric value is assumed to a fixed size in pixels. Since the size of the viewers windows does vary substantially if fixed values are used. It is necessary to mix them with or more of the relative size values. Otherwise the client engine will override your specified pixel value to ensure that the total portions of the frames are 100% of the width and height of the user's window.

This is a simple percentage value between 1 and 100, if the total is greater than 100 all percentages are scale down. Similarly if total is less than 100 all percentages are scaled up to match a total of 100.

A single star (*) character is a relative size frame and is interpreted as a request to give all remaining space. If there exist multiple relative size frames the remaining space is divided equally among them. If there is a value infront of a * that frame gets that much more relative space. For example <Rows=2*,*> will give two times more space to the first frame than the second frame i.e., 2/3rd of window is first frame and 1/3rd of window is second frame.

Cols:- (columns width list)

Takes comma separated list of values similar to rows attribute. The <frameset> tag can be nested inside other <frameset> tag in which case the complete subframe is placed in the space.

The <frame> tag defines a single frame in a <frameset> which can have following seven attributes.

1. **Src**:- This attributes take URL of the document as value. Frames with out this attributes are displayed as blank space.

2. **Name**:- (window name) This attribute is used to assign a name to a frame. So, that it can targeted by links in another document. This attribute is optional i.e., by default all windows are unnamed. Names must begin with an alpha numeric characters. Named frames can have their window contents targeted with the new "target" attribute.

3. **Margin width**:- This is used when user wants some control of the margin for this frame. The value for margin width, if it is specified in pixels they cannot be less than frame objects. This is optional attribute by default browser will leave appropriate margin width.

4. **Margin height**:- This is just like margin width except it controls the upper and lower margins instead of the left and right margins.

Margin width   Margin height
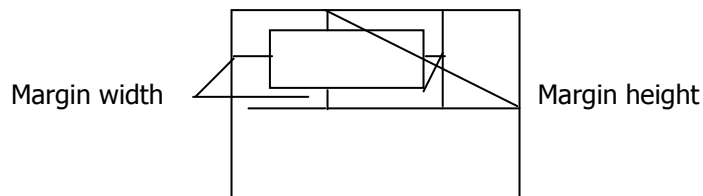
5. **Scrolling**:- (yes or no or auto) This attribute is used to describe if the frame should have a scroll bar or not. The value auto instructs the browser to decide whether scroll bars are needed or not. This attribute is optional and the default value is auto.

6. **Noresize**:- This attribute has no value that is it is a flag, which indicates the frame is not resizable by the user. Note that if any frame adjusts to an edge is not resizable that entire edge will be restricted from moving. This will effect the resize ability of other frames. This is optional and by default all frames are resizable.

7. **Frame border**:- This is optional attribute with which user can set the border to the frame.

<No frames> tag:- The <No frames> tag can be used for these browsers that are not able to interpret <frame> tag. Although most of the browser support frames there are still small no. of browsers or users, who don't have latest functionality. To address as wide as an audience as possible. HTML authors could write a "no frames" version as below.

Example:-

<HTML>

```
<head>
<title>My frame page</title>
</head>
<frameset cols="50, *, 2*">
<frameset rows="50, *, *">
<frame src="one.html">
<frame src="two.html">
<frame src=three.html>
</frameset>
<frame src=four.html>
<frameset rows=50%, 50%>
<frame src=five.html>
<frame src=six.html>
</frameset>
</frameset>
<body><noframes>your browser doesn't supports frames! </noframes>
</body>
</HTML>
```

O/p:-

One.html		five.html
Two.html	Four.html	
Three.html		six.html

If some one is using an old browser it will ship every things above and comes straight down to <noframes> tag. If browser is <frames> capable, it will ignore what is between the <noframes> tag.

Note:- You can also put images in the frames as shown below

<frame src="sai.gif width=100 height=200 ALT=sai.image>

<frame src="sai.gif" scrolling=No>

Frameset design algorithm:-

This algorithm assumes that you have specifications of the browser window division you want to create. Then the steps for the framing algorithm are

1. First decide whether to use 'cols' or 'rows' in the outermost <frameset> declaration.
2. Decide the size of frames in terms of absolute values, relative values or percentage
3. Repeat the one and two steps until no further division are necessary i.e., next <frameset> with in the <frameset> with specifications
4. The algorithm recursive because it uses itself in subsequent steps

Example:-

```
<frameset>
<frameset>
        <frame .......>
        <frame ......>
        <frameset>
        <frameset>
```

FORMS

"Forms" are a mechanism that allows you to type information into fields on a browser screen and submit that information to a web server or to any other program i.e., "HTML forms" allow you to create "interactive web pages".

An 'HTML Form' is a section of a document containing normal content, mark-up, special elements called controls, textbox, button, check box, radio buttons, menus etc and labels on those controls users generally complete a form by

modifying its control before submitting the form to an agent for processing [web server, mail server, another program etc..]

Form tags:-

You can include multiple forms in a single HTML document (nesting of forms not allowed). Forms can have a number of different types of fields, in which viewer or user can enter information. The beginning and ending tags for form creation are <form> and </form>. All the values assigned to items between above two tags are uploaded to the server when a user submits a form.

Attributes of <form> tag:-

1. **Action**:- The form itself must contain the name of the program that processes the information submit. The program location is specified using the action attribute. So, the value of action attribute is an absolute "URL". Usually that of a program.

2. **Method**:- (get or post) This attribute is used for form submission. There are two different ways of uploading values to a webserver.

3. **First method**:-[method=get] This appends the values of the input parameters to the URL specified in the action attribute. In a single communication this information is uploaded to the server that process the form. The "action" URL is separated from the parameter names and values by the question mark symbol as explaining in the below example.

Example:- <form method="get" action=http://www.acme.com/name.age>

When this form is submitted the browser will just try to load the following URL with two input parameters. For example,

   http//www.acme.com/name.cgi?lname="Raju & fname=Ranga

First attribute   Value   Second attribute
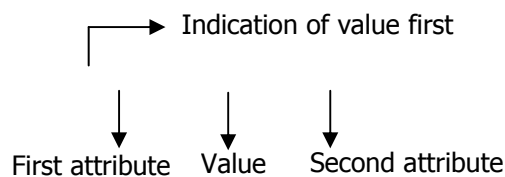
Second method:- [method=post] The post value assigned to "method" attribute provides another way of submitting input value (uploading) from a "form" to a web server. In the post method the server specified in the action attribute of the form tag is contacted. After communication has been established the input values are sent to the server. The encoding style of parameters name and values may differ from server to server.

Whether a form uses the "get" or "post" method the program that handles the form must be able to decode the parameters and use them for processing.

Get Vs post:- To determine which of the above two methods, we should choose, consider the following points.

♦   For a beginner, the "get" method is a is probably preferable since the "post" method requires programming expertise

♦   If you have a small number of input parameters the "get" method is preferable. For efficiency reasons however if a long list of parameters is involved the "post" method is preferable.

♦   The "post" method is preferable to the "get" method if security is an issue.

Examples:-

<form>

name: <input type="text" size=60 max length=65>

</form>

<input type="reset" value="clear form">

<form>

name:<input type="text" size=60>

address:<input type="text" size=60>

city:<input type="text" size=60>

do you like:<input type="radio" name="fruit" value="apples">

<input type="radio" name="fruit" value="oranges">

</form>

<input type="reset" value="clear form">

Form controls (or) widgets:- Form controls are text boxes, radio buttons, check boxes, drop down lists, action buttons, text areas, password boxes and so on. Each control usually creates a name/value pair that forms part of the submitted data. Some controls might also have a default value which can be made so that the user cannot change the default value. You can also have a control which will "rest" all the controls to their default values, so that the users can start over again.

1. **Text boxes**:- These are controls that allow a user to enter some text. A text has a "type" of "text". The 'name' of the control set which the "name" attribute. The default value is set with the "value" attribute other attributes of control are 'size", 'maxlength'.

2. **Password boxes**:- These are identical to text boxes except for the fact that what ever the user types is not displayed in the control i.e., usually '*' displayed in the place of characters. Password boxes are having a type of "password".

   Ex:- password:<input type="password" size=60>

3. **Check boxes**:- This is used to offer the user a 'yes/no' option for something check boxes can either be checked or unchecked or unchecked by default by using the checked attribute. You can have several check boxes with the same name in which case several pairs will be sent if more than one checked box is check. Check boxes have a type of "check box".

   Ex:-

   <form>

   subscribe:<input type="check box" name="use" value="yes"CHECK D>

   </FORM>

   O/P: subscribe: ☑

4. **Radio buttons**:- These are similar to check boxes with the exception that when several radio buttons share the same name only one of them can be checked. When the form is submitted only the value of the selected radio button is sent radio buttons have a type of "radio".

5. File selectors:- These are used to allow the user to select a file to send along with a form file selectors have a "type" of 'file'. The accept attribute can be used to limit the type of files the user can send you can set the value attribute to be the default file name.

   Ex:-

   <form method="POST" Action="cgi-bin/html/frm.ogi">

   <p>name:<input type=text name="xxx" size=60>

   <input type="file" name="entry" accept="image/bmp,image/gif"> <p>

   <input type=submit>

   </form>

6. **Submit buttons**:- (Action buttons) A submit button is a button which, when clicked, will submit the form with its current values. Submit buttons may have names and values, if they don't the button simply says submit query or something similar. You can also have multiple submit buttons with different names and values i.e., clicking on a different button will produce a different result.

   Ex:-

   <form method=get Action="cgi-bin/html/frm.cgi">

   <p> your email

   <input type="text" name=email size=30>

   <p>

   <input type=submit name=action value=subscribe>

   <input type="submit" name=action value="unsubscribe">

   </form>

7. **Selectors**:- Alternative to radio and checkboxes is the <select> tag. This allow users to choose any subset of items from a group with out occupying much space on the screen. The items in a given <select> tag are usually reended in the style of pop-up menu. The attributes of the <select> tag are "multiple", "name" and "size". The attribute "multiple" allows the user to select more than one item i.e., in this case the <select> tag behaves like a group of

check boxes. If the multiple attribute is omitted the <select> tag behaves like a set of radio buttons i.e., only one item may be chosen.

Ex:-

<select Name="drink>

<option>loke

<option>water

<option>float lake

<option selected> juice

</select>

8. **Text area**:- Text area is to specified a multi row text field rather just a single row. This is useful either to send or receive short messages. For example to create a 20 row 80 column area.

Ex:-

<text area Name="message" Rows=20 cols=80 maxlength=1500 wrap>

enter message here ………

</text area>

The attribute wrap of a <text area> tag will wrap the text even if user types with out hitting the enter key or return key.

You can also display a default text initially in the text area as shown in the above example.

9. Hidden controls:- These are not displayed and cannot be manipulated by the users i.e., user cannot change hidden control values. These are used to upload fixed values/names along with the rest of the form. Hidden controls have a 'type' of "Hidden". For example if you want to unsubscribe user from a mailing list. You can call action that could have the value (fixed) unsubscribe.

CGI Scripts:- [Common Gateway Interfaces]

CGI stands for **"Common Gateway Interface"**. It is a standard that describes how webservers should connect to external programs, which intern generate new web pages (dynamic), CGI programs are called "scripts" and they usually describes how to handle input submitted by a web form. CGI scripts is any program that runs on the webserver i.e., CGI is a basic set of variables and mechanisms for passing information from the browser to the server.

CGI scripts working:-

1. A URL points to a CGI scripts. A CGI script URL can appear any where that a regular URL can appear i.e., CGI URL appears as the action to form. The browser contacts to the server with that URL.

2. The server receives the request notes that the URL points a script, based on the location of the file or based on its extension server executes that script.

3. The script performs some action based on the input. The action may include querying a database, calculating a value or simply calling some other program on the server.

4. The script generates some kind of output that the web server can understand.

5. The web server receives the o/p from the script and passes it back to the browser, which formats and display for the user.

CGI scripts are usually used to establish interaction in between user and web server.

CGI Scripts – Security:-

Since a CGI program is executable that any one can run on a webserver. Such scripts must therefore be carefully written and straightforward scripts should be written by very experienced programmers. It is easy to write a script with security holes and very hard to write a script without security holes. A CGI program can be written in any language that allows it to be executed on the system such as c/c++, FORTRAN, PEARL, PYTHON, TCL/TK, Unix shell, Apple Script, VB, C-sharp (c#) etc. The choice of language depends what you have available on your system for example if you use a program language like 'c', you must have 'c' – compiler to compile it before it will run. Many people prefer to write CGI scripts instead of programs since they are easier to debug modify and maintain then a typical compile program.

Dynamic Web Documents:-

As the name implies a dynamic document is one that has the capacity to change. There are two varieties of dynamic documents and their differences result from the way in which change is initiated.

1. **Client pull**:-

In the client-pull model your browser initiates the documents change i.e., periodically your browser may automatically requests information from the server. Each time it does a new connection to the server must be established. Using client-pull we can cause a document to "Refresh" itself or we can load a completely new document.

The <meta> tag along with its http://equalent (HTTP – EQUIV) and CONTENT attributes are used to create client-pull documents. Note that the <meta> tag is included with in the <head> tag of the HTML document.

The syntax for client-pull application is,

Example:-

<HTML>

<head>

<Title> Testing of meta</title>

<Meta HTTP-EQUIV ="Refresh" content="10; URL=c:\first.html">

</head>

The above example shows how to load first.html after "10 sec", to "Refresh" the same document after 10 sec the syntax is

<html>

<head>

<title>test2</title>

<meta http-equiv="Refresh" content="10">

</head>

Observe following three things in the above code to load first.html after 10 sec

-   There are no spaces around the equal sign in the URL expression.
-   The URL is an absolute URL
-   The code marks precede the 10 and follow the html

All above you must follow all above conversion to create dynamic web client-pull document. Note that the performance of dynamic documents very much dependent on the speed of the link and the speed of the desktop.

2. **Server push**:-

In this model the server initiates the document change i.e., periodically the server may send latest information to the browser to display. For example current weather data, or recent scores of a particular match. For server push model the client-server connection must remain open after the clients initial request. This plays a continuous demand on the server and other network resources. Note that server-push is not accomplished using html tags server push programs are usually written in "Java perl phython" (open source programs). To use server-push model user also must know some technical details about server.

HTML TOOLS

Editors:-

An <html> editor is a software tool which helps to develop HTML source. It is a tag and text editor, which is specialized to html. The functions performs by the several dozen currently available html editor's vary as does their basic philosophy. There are essentially two different types of HTML editors.

1. **WYSIWYG EDITORS**:- (what you see IS what you get)

In this model the programmer is almost totally isolated from html. That is the programmer select items from menus, clicks on them, possibly fills in some text positions the items. The onscreen material they see is not the html document but rather the reordered html document. In other words during the development process the page developed doesn't actually see the tags unless he specifically decide to view the code.

2. **Tag oriented html editors**:-

In this model the page developer selects html tags from menus and has the option to manipulate the code directly. The html code is not hidden in this model. Note that to be effective in this model the user should be computer literate and should understand atleast basic html to manipulate.

Editor components:-

I. **Color Selector**:- Some editors provide a built in color selector with which you set the back ground color of a document.

II. **Documentation**:- Because of their limited nature early html editors were easy to figure out and required no documentation. However as html editor have become more complex the need for good offline and on-line documentation as become necessary.

III. **HTML converter**:- Many editor's allow you to convert text directly into an html document. The conversion is usually done in a quick, un-sophisticated manner, which needs heavily fine tune.

IV. **Hyperlink inserter**:- You can cut and paste hyperlinks using most html editors since URLs are often cumbersome to type.

V. **Spell checker**:- It is always a good idea to run your html documents through a spell checker. A built in spell checker is included in many html editors to eliminate typos.

VI. **Tag generator**:- Most html editors allow you to select from a wide range of tags by clicking on menu items.

VII. **Template creator**:- Some html editors provide you with a variety of predefined html templates other editors allow you to create and then load your own templates.

VIII. **Tutorial**:- A number of html editors provide an interactive tutorial to learn how to use a complicated html editor.

IX. **Viewer**:- If the html editor is not "WYSIWYG", they provide a viewer or Real time viewer to see the rendered document. That is you can view a locally rendered document. That is you can view a locally rendered copy of the document.

Few known HTML Editors:-

Many HTML editors are currently on the market reviews of each and information about how to obtain your own copy can be found on the web. Few of them are

1. First page (Evrsoft)
2. Front page (Microsoft)
3. Hot-docpro (Microsoft)
4. HoTMetaL Pro 6.0 (soft quad)
5. Navigator gold (Netscape)
6. Site mill (Adobe)

Converters:-
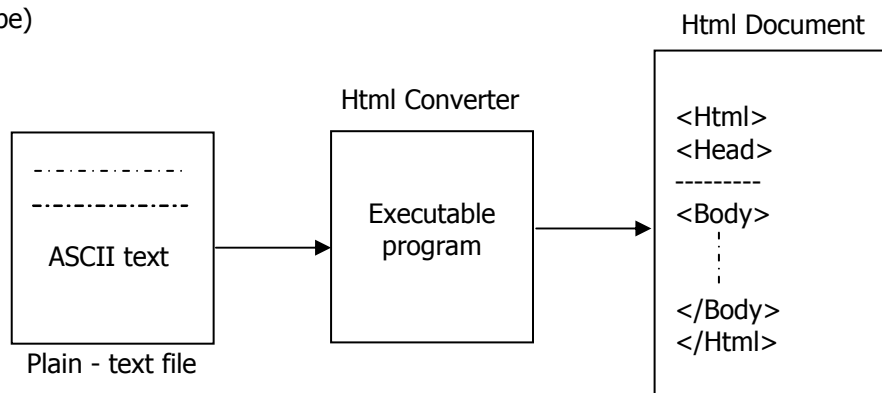
An HTML converter program takes documents as input and produces the same information in an html format. The idea illustrated in the above figure. An HTML converter must strip out of all the documents original formatting information and replace it with the appropriate HTML tags. There are converters for plain text, table data and word documents etc. the quality of the html documents produced by the converters varies widely, depending on both the converter and the complexity of the original document. In general a large amount of fine-tuning will be necessary. You can also convert original documents into the equivalent HTML formats by using online application resources.

UNIT – IV

NEWS GROUPS, MAILING LISTS, CHAT ROOMS, MUDS DIGITAL SIGNATURES AND FIREWALLS

News groups Fundamentals:- (1970's)

A News groups is a discussion group in which computer users through out the world participate. Users interested in a particular topic may subscribe to the related new groups. Boundaries such as age, gender and background generally don't play a role in the discussion. Since users usually see messages only from each other. Some one can e-mail a message called an article to the new groups at any time. The message then becomes available for others to read. They can then respond to the article, sharing their opinions are expertise i.e., a newsgroup is an electronic form that allows users from all over the world to participate in a discussion about a specific topic. There are currently billions of newsgroups covering nearly every imaginable subject area.

Newsgroups terminology:-

1. **Article**:- A message written and sent to a newsgroup.
2. **Post**:- Synonym for article.
3. **Posting**:- The process of sending an article to a newsgroup.
4. **Follow-up**:- An article posted in response to a previous newsgroup article (reply).
5. **Thread**:- A collection of one or more following articles together with the original posting.
6. **Subscribe**:- The procedure you follow to add a newsgroups to the list of those you read on regular basics.
7. **Unsubscribe**:- The process of removing a newsgroup from the list of those that you read.
8. **News reader**:- A program that serves as the user interface for newsgroups i.e., this program allow you to read, post, subscribe and unsubscribe from newsgroups along with other things.
9. **News client**:- A synonym for news reader.
10. **Expired news**:- News that is removed from a system, usually after a short period time.
11. **News server**:- A computer that saves, forwards and manages news articles.
12. **Newsfeed**:- A news server that provides recent articles to a news client.
13. **Ways station**:- A news server that functions as a newsfeed for atleast two other sites.
14. **Network News transfer protocol (NNTP)**:- The protocol used for distributing news articles.
15. **News administrator**:- A person who is incharge of running a news server.
16. **News Moderator**:- A person associated with the specific newsgroups who reads and critically evaluates all articles submitted for posting.
17. **Moderated News group**:- A newsgroup that has a moderator.
18. **Unmoderated Newsgroup**:- A newsgroup that has no moderator.
19. **Cross post**:- The process of submitting the same article to two or more newsgroups.
20. **Digest**:- A collection of related articles.
21. **Kill files**:- A filter – based on names or topics that you specify.

Short Note on News Reader:-

A newsreader is a program which serves as the user–interface with news-groups.
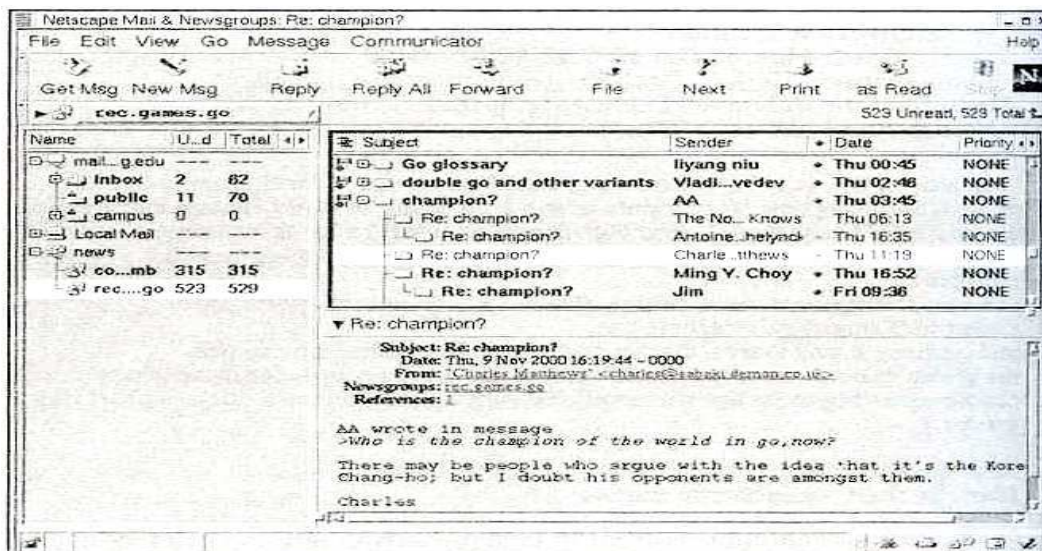
News Groups, Mailing Lists, Chat Rooms and MUDs

As shown in the above figure, the functionality of the graphical buttons make reading the news vary easy. In the past, most newsreaders were keyboard driven and unfriendly by today's expectations. Now, many web browsers have built-in newsreaders. Which makes reading news much more enjoyable and interacting process. Hyperlinks can be followed write from with in a news article.

Netscape newsreader as shown in the above figure divides the screen into several panels. It also allows you to resize the relative proportions of the panel. It provides several pull-down menus with the headings "file", "edit", "view", "go", "message", "communicator" etc. as in customarised menus, menu items that are not available for the current configuration are shown in a lighter gray color. It also includes several numbers of buttons, which are self-explanatory. The most commonly used once are

1. "post" a new article
2. "send" e-mail
3. "reply" to e-mail
4. "reply" to a posting

The next part of the news window is divided into two sections on the top is the name of the news group and a list of the messages with their subjects. If you click-on one of the articles, it will appear in the bottom part of the screen as shown in the above figure. An article can contain hyperlinks.

Reading news:- Reading news is very easy in a text based news reader, you need to simply enter the number or a name of a news group and then entering the number of the article you want to read. In a graphical newsreader all you need to do is select a news-group and then select an article from with in the news group. Since the number of news groups is so vast a lot of interesting information can be found in news-group. But it can some times be time consuming to locate. "PEJA" news will you to filter the news and to locate based on your interest.

Posting news:- Once you have been reading a newsgroup for a while, you will obtain a sense of what types of postings are appropriate for the group. So, take care in composing the message and don't post unless you have something work while. When generating an article follow the netiquette rules.

Keeping track:- News readers maintain a data file often name "Newsrc" when you subscribe to a news group on entry is put in this file. When you read a posting the ID information is updated in your subscription file with the help of subscription file content the newsreader keep you uptodate.

Newsgroups model:- There are three methods by which news can be distributed
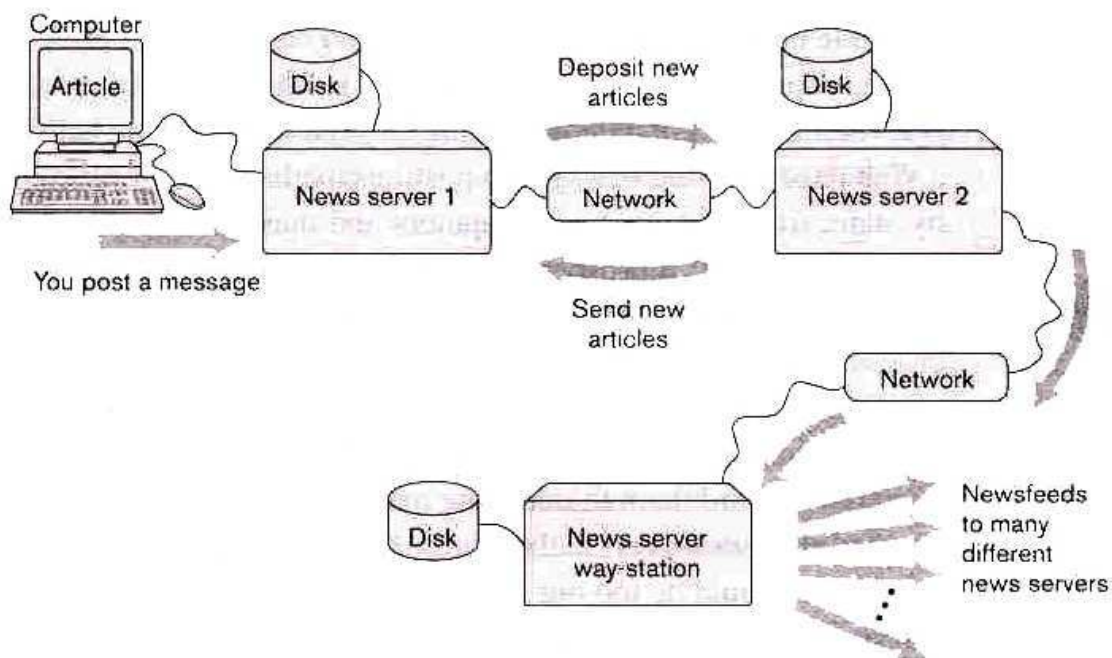
An illustration of how News Articles are propagated throughout the world

1. News push
2. News pull (news suck)
3. News search

In news-push the news is delivered without being specifically requested. At a basic level in a news-push, a news-feed contacts its client and indicates that it has new articles. The client must respond by telling the news-feed with article it wants.

In news-pull, the client requests the news and as if delivered i.e., a news client contacts one of its news feeds and asks if there are new articles. The news-feed response by listing the new articles, then client must determine which article it needs and make a request to retrieve those.

The third method of news distribution is called news-second DEJA news is a search engine that specializes in news-groups i.e., instead of subscribing to newsgroups it easier to search and browse deja news. It has a larger collection of newsgroups and the postings available of different newsgroups. It also offers powerful search options to request a profile of all the news groups. This visibility or transferency is revolutionary.

Short note on way-stations:-
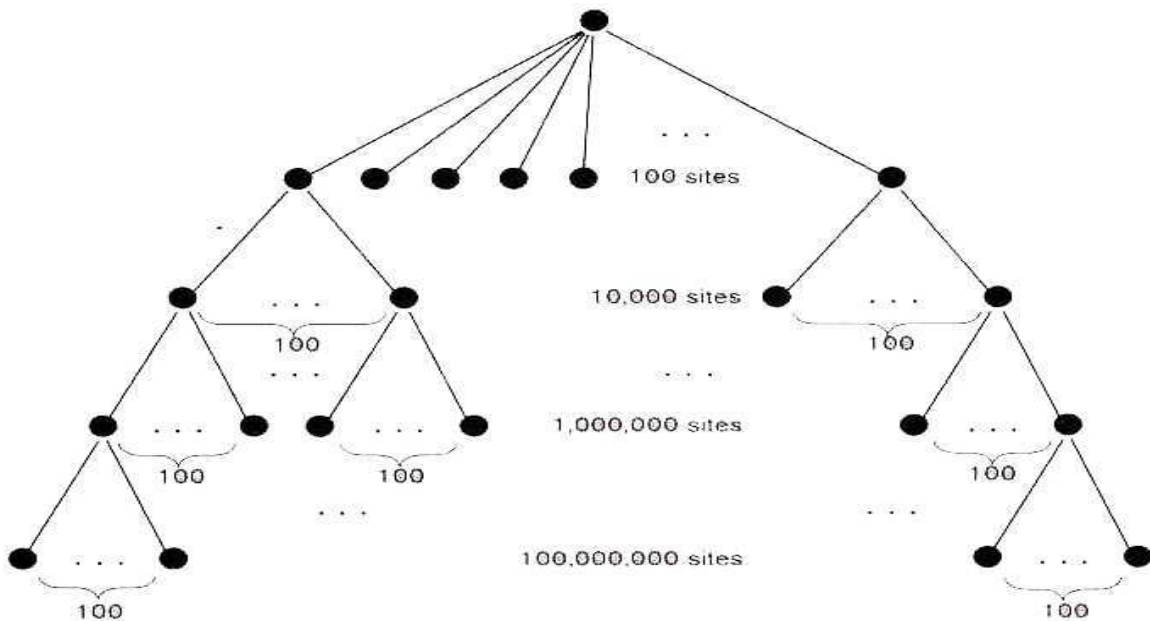
Fanning out news via way-stations. If each site fans out to 100 new and difference sites, in only four(4) levels of the distribution process a total of 101,010,100 new sites can be reached

Due to the incredible volume of news articles, it is not possible for one machine to forward new articles to every other machine and also be the time uses reached the last machine it would be out of date. So, to propagate the news more rapidly way stations are used. A way station is a news-server, which distributes articles to a number of other news servers instead of just one as shown in the below figure.

As shown in the above figure after the first level 100 new sites have acquired the news. In the second level these 100 way stations distribute to an additional 10,000 sites. Since the 100 way stations can be distributing in parallel this process only take 100 distribution steps. At the next level these 10,000 way stations can distribute to 10,00,000 new way stations. Keep in mind that news is only around for a short period of time before it expires. This is necessary to make room for newly propagated articles.

News-group hierarchies:- News is partitioned in two major categories. "Main stream" and "alternative". The main-stream category is more prevalent, conventional and better organized than the alternative one.

For example some of main stream newsgroup hierarchies.

- Biz – business – Any business related subject
- Comp – computers – All computers related subject
- Rec – Recreational – Any Recreational subject
- Soc – social – Any social gatherings and social issues

Several countries have a large number of newsgroups as summarized in the below table

1. Australia – bus
2. India – in
3. England – UK
4. France – fr
5. Italy – it

A newsgroup name is formed by the hierarchy, under which it falls, the main topic area, a more specific sub-topic area and on with dots separating the individual elements.

For example:

Comp.   OS.   MS.   Windows. networking. Winzp

Hierarchy Main topic Sub-topic   Sub sub-topic   etc…

Mailing Lists Fundamentals:- An mailing list is a group of users with a shared interest whose e-mail address are collected together in an electronic list, that can be use to send e-mail to each member of the list. The key to mailing list is a program called a "List Server", which receives and distributes postings. This program also automatically manages subscriptions.
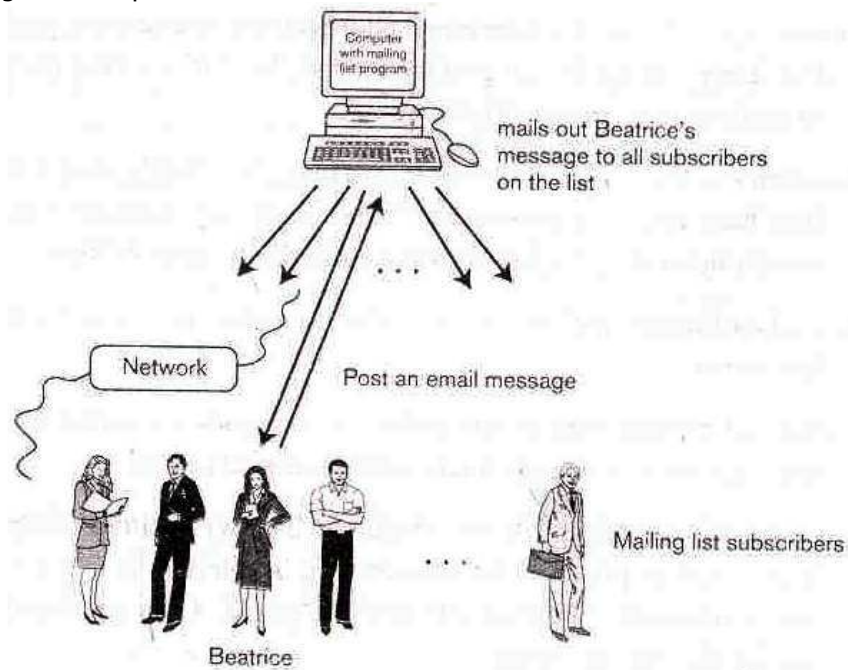
The basic idea of how an mailing list works. Most lists are set to send a copy of the posting back to the author as shown, but some lists are set not to do this

Mailing List terminology:-

1. Subscriber:- A person whose e-mail address is on an electronic mailing list.

2. List owner:- The person incharge of a mailing list.

3. List administrator, List coordinator (or) List manager:- Synonyms for list owner.

4. Lurker: A person who is subscribed to read a mailing list by doesn't post messages.

5. Closed list:- Filtered membership.

6. Private list:- synonym for closed list.

7. Open list:- A mailing list to which any one may subscribe.

8. Edited list:- A mailing list in which posts may be edited by the list owner.

9. Digested list:- A mailing list in which posting are grouped by topic and sent out as batches instead of individually.

Mailing list subscriptions and posts:- Mailing list produced a huge volume of e-mail because of this most people only be active in a few mailing lists at a time. Mailing list subscriptions and deletions are automated for all but the shortest – mailing list.

1. To subscribe you need to send an e-mail message along with the subscription instructions, for which you need to know the name of the mailing list, site, where the list is maintained and the name of the program used to manage the mailing list.

A number of different list server programs are available for automating the duties of a list owner. For example,

LISTSERV – Unix/windows

LISTPROC – Unix

Major domo – Unix

2. When posting to a mailing list user should follow a set of guidelines similar to those for news-groups. Everyone on the list receives the posts and so it is a good idea to consider carefully whether or not your message is appropriate for the list. We often don't know who the other subscribes on the mailing list area. Because for privacy reasons many mailing list make this information off-limits. There are two different addresses involved with mailing list for posting.

1. The address form is,

> List. Server. namesite

   All the commands to be processed by the list server should be sent to this address.

2. The address form is,

> Mailing. List. Name @ site

   All posts intended for distributed to the entire mailing list should be sent to this address. Be careful not to send the request meant for server to the entire mailing list and vice-versa.

Mailing list Vs Newsgroups:- Both mailing list and newsgroups involved lots of people with similar interest discussing their favourite topics electronically. But these two differ in several aspects as follows.

Mailing List	Newsgroup
1. In a mailing list messages are sent directly to the subscriber mailbox.	1. In a news group, subscriber needs to read messages that are stored in news server.
2. Message is managed by the e-mail client available in the subscriber system.	2. Newsreader helps the subscriber in manipulating the articles in the newsgroup.
3. Subscriber needs to send a message to the appropriate list-server to subscribe.	3. Newsreader provides a convenient method to subscribe.
4. messages in a mailing list is archived much longer.	4. News usually expires with in a short period.
5. Mailing list archived easily and number of tools available for searching in other.	5. ------
6. To join in a mailing list you only need to know how to use e-mail.	6. To access news subscriber need to learn a newsreader.
7. If you are not clean mails periodically their number can grow alarmingly.	7. You can read the news when ever you want before it expires services such as DEJA news make it increasingly easy to do searches.
8. Don't require real time interaction.	8. Don't require real time interaction.

Chat rooms:- Chat rooms has become incredibly popular since it was developed by JARKKO in 1988. It is a forum through with you can interactively discuss. Your favourite subject with the people located anywhere on the Internet i.e., it is a virtual room in which two or more people with a common interest can share ideas and have a real time conversation.

   The chat room is actually a channel or path that allows communication between two or more computers on the Internet. The communication occurs in real time and is similar to a conference call or meeting. However messages are typed on the keyboard (voice chat software is also available). The conversation appears on the monitors in a text box with scrolls as shown in the below figure.

FIG460

   Chat rooms are becoming a popular forum for educational discussions. For example on-line universities associates their codes with chat rooms. So that student in the class (virtual) can share their knowledge with other students.

<u>Chat Room Entrance</u>:

   When signing into a chat room for the first time, the user is asked to select a user name and password. Once the user has signed in with a chat service, the user can select a 'room' to which the user wants to go. The no. of participants in each room is displayed either via a number or a list of the room's occupants. A room with a large no of participants is likely to be more lively.

When a chat room is active (i.e. being used) a scrolling window displays the conversation as times of text, and each line is preceded by the mil name of the person who "spoke". The user will also be provided with a second and called a massage box, in which the user can type the message. Several buttons allow the user to submit the message, to another chat room, or refresh the screen.

Multi – user dimensions:- [MUD'S]

These are also referred to as 3D worlds and chat worlds. A MUD is a real time iterative game that takes place in an imaginary environment where multiple users can play simultaneously. Similar to chat rooms in MUDs all communication and activity take place via keyboard. Descriptions of the imaginary environment and objects are provided as you travel through these virtual surroundings you are able to interact with other players who are logged in at the same time.

MUD's originated in 1979, when "Bartley" and "Roy" wrote a game program that allowed multiple users to play at the same time. Various versions of MUD's have emerged which include MOOs (Multi-user object-oriented), MUSHS, MUCKS etc.

It is possible to start up your own MUD by using FTP (File Transfer Protocol) to obtain a generic version of the MUD. Lists of various types of serves and FTP sites from which the files can be downloaded or available on the web. Once installed the MUD source code can be modify and customized if you are competent programmer. Most companies and universities discourage the use of MUD's except for educational purposes.

MULTIMEDIA

Current multimedia concerns multimedia can be very entertaining, especially if you have a enough computing resources and all the necessary **"plug-ins"** are installed. But one problem with the multimedia content is lack of standards. The feel of multimedia is emerging rapidly so standards have not yet been developed. Many of the technologies for creating and displaying multimedia are proprietary, which means a given plug-in may only be able to process one of the many multimedia formats.

A second problem with multimedia is that no graphical browser is able to handle every kind of multimedia formats that it encounters.

A third problem is that multimedia elements are usually very large much larger than typical images. Therefore they take a long time to download and also they play strain on the Internet. Because multimedia files are so large, file compression plays an important role in downloads. Many multimedia formats have built in compression and decompression algorithms. Therefore when you try to play a large audio clip or movie the file containing the data will usually be buffered.

Multimedia applications are continuously and rapidly improving, and they are definitely worth checking out and learning.

Audio:

The term audio refers to sound. A no. of audio formats exist, and audio can be included in a wed page. To hear a sound from a web page, the computer must be equipped with speakers. A large no. of audio file formats are in use they are

(1) AIFF (.aif,.aiff, and .aifc extensions), which stands for Audio Interchange File Format. This format was developed by Apple.
(2) AU (.au and .snd extensions). This format was developed by sun Micro Systems.
(3) MIDI(.midi and .mid extensions). Which stands for musical Instrument Digital Interface.
(4) REAL AUDIO (.ra and .ram. extensions). This format was developed by progressive networks.
(5) WAV (.wav extension). This format was developed by Micro Soft.

The developers of the formats should tell which platforms would support each format. To play any of these formats, the users needs an appropriate plug-in. Some audio plug-ins are capable of playing more than one format. The MIDI format can be used to create very small, yet musically interesting, audio files.

Audio Installation:

When a user loads a web page that contains an audio file, one of the following things usually happens:

(1) The file automatically plays and the user hears a sound. Or,

(2) The user in given the option to download the sound file. Once the file is retrieved, the user can listen to it by playing the file on an appropriate audio player. Or,

(3) The user is given the option to download a plug in that can play the sound file. Or,

(4) The user gets a pop-up dialog box that says something like "no audio player unstalled".

Audio and Web Pages:

One approach to including an audio file in a web page involves the object tag<OBJET> and its corresponding ending tag <OBJECT>. For example to include a file called Mymusic.wav using the object tag,

<OBJET DATA = "my music.wav" TYPE = "audio/wav">

</OBJECT>

The DATA attribute specifies the sound file, and TYPE attribute specific the object's MIME type.

Microsoft's Internet Explorer. (. IE) supports the background tag, <BGSOUND>

To include the same audio file on a page to be loaded by IE. The following code.

<BGSOUND SRC = "My music.wav">.

Movies and Video:

Online video in essence is a motion picture. A video may or may not include sound. Because video consists of many image frames plus sound, video files are much large than audio files.

Formats:

As with audio a large no. of video formats are currently in use. Some of the most popular ones are.

(1) AVI (.avi extension), which stands for Audio Video Interleaved. This format was developed by Micro Soft.

(2) MPEG(.mpeg or .mpg extensions), which stands for Motion Picutres Experts Group. This forma was developed by Motion picture experts Group.

(3) Quick Time (.qt or .mov extensions). This format was developed by Apple.

(4) SGI-Movie (.movie extension). This format was developed by Silicon Graphics.

Video and Webpages:

To include a video in a WebPages, the object tag should be used. For example to include the move reunion .avi in a 150-by-150-pixel area on the screen and have it start playing when the corresponding webpage in loaded, the following HTML Code is used.

<OBJECT DATA = "reunion .avi "TYPE = " Video/Micro Soft Video" Height =150 width =150>

</OBJECT>

Assuming the reader has installed a plug in to play AVI movies, the movie reunion .avi will be buffered and will then start playing automatically when the page is loaded.

Virtual Reality and 3D Modeling:

Virtual reality involves a three dimensional 3D simulation of a real or imagined environment using computer. A lot of applications are suited to 3D displays, form engineering designs to medical research and imaging to online art galleries to games. Virtual reality is becoming another exciting extension of the web. The development of 3D worlds and objects, 3D browsers in which to view them is bringing the users closer to web-based virtual reality.

Currently, several different implementations of virtual reality are available on the web.Two of the most popular approaches are VRML and QTVR.

VIRTUAL REALITY MODELING LANGUAGE (VRML)

Initially called virtual reality Mark Up language, the VRML1.0 specification was originally established by Silicon Graphics to use simple text based file to create virtual reality environment. The first release of VRML produced environments were static and noninteractive. The current verson VRML2.0 extends the capabilities of VRML1.0 by supporting interaction, motion, and sound.

A VRML file is a plain text or Compressed text file. Such files are identified by a file extension of .wrl,.wrl.gz, or .wrz. The 'z' at the end of the file extensions .gz and .wrz denotes a zip or compressed file. Where HTML files are rendered as 'pages' by a browser, VRML files are rendered as worlds. Viewing a VRML

worlds requires a special VRML viewer or a plug-in. The latest versions of Internet Explorer and Netscape come bundled with viewers that support VRML.

QUICK TIME VIRTUAL REALITY (QTVR):

Another virtual Reality implementation found on the web is Quick Time Virtual Reality (QTVR) also called Quick Time Virtual Reality. This technology was designed by Apple and was first introduced in mid-1995.

A 3D panorama created by QTVR is actually a Quick Time Movie that represents a 360 degree image. A quick Time Virtual Reality movie can be included in a web page in the same way as a VRML File. Navigating through the movie gives the user the impression that they are in a 3D world. To view a QTVR, the user needs a QTVR plug-in.

Digital Signatures:

Today's electronic world, many confidential and important messages are sent via computer. A signature mechanism has been developed to authenticate signatures for electronic communications.

A digital signature is a mechanism that can be used to sign as electronic documents officially. Because digital signatures are difficult to forge, documents that contain such signatures can be considered authentic. Digital signatures provide a way of verifying both the sender of the information and the content of the message, ensuring that it has not been modified. A digital signature is like an official seal on both document and the envelope that protects the document from being altered.

Firewalls:

A firewall is a security mechanism used by organizations to protect their LANs from the internet. A firewall keeps private resources confidential and minimizes security risks. There are two distinct types of firewall systems. One works by using fillers at the network layer. The other works by using proxy servers at the user, application or network layer. The amount of filtering a fire wall provides varies. In addition, for the same firewall, the amount of filtering may be different in different direction.