

1.3 World Wide Web (WWW)

From the late 1960s to the early 1990s, the Internet was a communication and research tool used almost exclusively for academic and military purposes. This changed radically with the introduction of the *World Wide Web* (WWW) or Web in short in 1989. The WWW is a set of programs, standards and protocols governing the way in which *multimedia* files (*multimedia files are the documents that contain a combination of text, photographs, graphics, video and audio*) are created and displayed on the Internet.

Before WWW, Internet was mainly used for obtaining textual information. But post-WWW, the Internet popularity grew tremendously because of graphic-intensive nature of WWW. Therefore, we may attribute the explosion in use and popularity of Internet to WWW only.

The *World Wide Web* (WWW) is also affectionately called "The Web". WWW was proposed between 1989-1991 by Tim Berners-Lee. Proposed in 1989, WWW became a reality with invention of HTML and a text browser in 1990.

1.3.1 Difference between WWW and Internet

Most people think that WWW is Internet and vice versa, which is NOT TRUE.

A large part of the Internet is the 'World Wide Web' (WWW). This is made up of web sites that have one or more web pages. This is the part of the Internet that you probably use most of the time.

But the Internet isn't just the web pages that you use every day. It also consists of:

- ◆ Forums where people can seek help and advice about a topic.

- ◆ Research databases used by universities and large companies.

- ◆ USENET – discussion groups about a specific subject from the latest boy band to favourite pets - for example, *Google Groups*.

- ◆ Email and Instant Messaging (IM) systems.

It is really important to understand that the Internet is not the same as the WWW. The Internet is to the World Wide Web as Europe is to Germany. One is the container, the other is an item within the container.

The Internet

Note

While Internet is a collection of computers or networking devices connected together ; WWW is a collection of documents, linked via special links called hyperlinks. WWW forms a large part of Internet but is not the Internet.

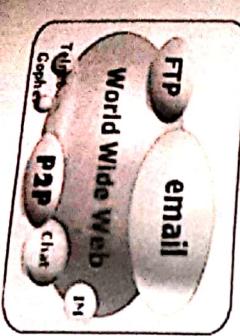


Figure 1.1 WWW vs. Internet

1.4 Internet Terminology

Before we proceed further, it will be good if we briefly talk about Internet terminology. In the following lines, we are introducing some basic terms related to Internet.

Any computer on the networks that requests services from another computer on the Internet.

Any computer that receives requests from client computers, processes and sends the output. Web Servers respond to web related request. There can be other types of servers to handle different type of requests/actions.

Any digital page/document hosted on Internet (i.e., accessible via Internet.)

A collection of interconnected webpages, designed with a certain goal in mind.

A web site or service that offers a broad array of resources such as e-mail, forums, search-engines among others, e.g., sites like MSN, Yahoo, IndiaTimes etc.

A program or software on a client computer, that retrieves information from the web. Examples are : *Internet Explorer*, *Google Chrome*, *Mozilla Firefox*, *Netscape*, *Mosaic*, *Opera*, *Safari*, *Lynx* etc.

Web Browser

Web Client

Webpage

Web Site

Web Portal

World Wide Web

URL

Blogger

Blogging

Newsgroup

Email

Email Address

The action of writing blog is called *blogging*.

Newsgroups are Internet discussion forums where groups of users with common interests gather to discuss on a common topic of interest.

Short for electronic mail, *email* refers to messages distributed by electronic means from one computer user to one or more recipients via a network mostly Internet.

Every email has a unique *electronic post-office-box* with a unique address on a network where e-mail can be sent ; thus unique address is known as email address.

Each email address has three sections. Let's look at the example below :



Following sections talk about these in details.

1.5 Web Server

A **Web server** is a computer that stores websites on the Internet and delivers web pages to viewers upon request. A **Web server** is also called **WWW server**.

1. **Web Servers** are generally programs or software that wait for requests from the web browser. Some examples of Web servers are : *Apache, IIS, nginx, GWS, Ntsele etc.*

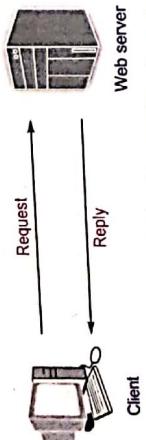


Figure 1.12 Working of a web server

WEB SERVER

A **Web Server** is a WWW server that stores web documents and responds to the requests made by web browsers.

A Web Server is a WWW server that stores web documents and responds to the requests made by web browsers.

Difference between a Server and a Webserver

Before we proceed further, it is important to understand the difference between a **server** and a **web server**.

Server

A **Server** is a computer or device on a network that manages network resources. A server serves requests mainly related to resources on the network such as for **sharing a resource** like printer or **sharing storage** etc. There are many different types of servers such as a **file server** or a **mail server** or **webserver** etc. You'll learn about various server types later in this chapter.

Web Server

Web servers are computers that deliver (serves up) Web pages. In technical terms, we can say that they handle HTTP requests. For example, if you enter the URL <http://www.edupillar.com/index.html> in your browser, this sends a request to the web server whose domain name is **edupillar.com**. The server then fetches the page named **index.html** and sends it to your browser.

1.5.1A Services Provided by Webservers

Unlike a server, a **web server** is completely dedicated to handling requests for webpages. It provides following major services :

1. **Serving Web Pages.** The primary function of a webserver is to deliver web pages on the request of clients using the Hypertext Transfer Protocol (HTTP). This means delivery of HTML documents and any additional content that may be included by a document, such as images, style sheets and scripts.

2. **Running Gateway Programs (CGI) and Returning Output.** In order to process the requests received, the webservers need to run special programs called CGI programs which help them fetch the required output as per the request made by the client.
3. **Controlling Access to the Server.** A full implementation of HTTP also includes ways of receiving content from clients. This feature is used for submitting web forms, including uploading of files.

Note

Some common web server software are : Apache Webserver, Apache Tomcat, Webserver IIS, The Lighttpd Server, Jigsaw web server, Sun Java system web server etc.

4. Monitoring and Logging all Access.

The webservers also ensure that only authenticated access takes place and thus they keep running many monitoring programs and keep logging all the activities.

5. Server Side Scripting.

Many generic web servers also support server-side scripting using Active Server Pages (ASP), PHP, or other scripting languages.

1.6 Web Site

A web site is a collection of web pages which are digital files generally written using HyperText Markup Language (HTML). For a web site to be available to everyone in the world at all times, it must be stored or "hosted" on a computer that is connected to the Internet round the clock. Such a computer is known as a **Web server**.

The web pages of a website are linked together (through hyperlinks and hypertext) and share a common interface and design. The site might also contain additional documents and files such as images, videos or other digital assets.

With Internet invading in every sphere, we see websites for all kind of causes and purposes. So, we can also say that a website can also be thought of as a digital environment capable of delivering information and solutions and promoting interaction between people, places, and things to support the goals of the organization it was created for.

1.6.1 Components of a Website

As you know that a website is a collection of a related webpages hosted on a webserver. These are being listed below.

Webhost Hosting is where a website is physically located. Group of linked webpages quality to be called a website only when hosted on a webserver. On a webserver, somewhere, are a set of files that are transmitted to user computers when they specify the address of the website.

Difference between a Server and a Webserver

Before we proceed further, it is important to understand the difference between a **server** and a **web server**.

Server

A **Server** is a computer dedicated for managing network resources, it is responsible for handling the requests related to the resources on network. Services provided by a server on a network include the following among many others :

1. **Equipment/Resource Sharing.** High quality printers and photocopiers are often designed to connect directly to a network and all authorised users can share the equipment. A server is responsible for such a resource sharing request.
2. **Centralised File Saving for Data Sharing.** Servers help the user save files to their home directories on the file server, workers can load their documents on any networked computer.
3. **Centralised Virus Scanning.** Most file servers run virus scanners constantly to detect and take care of viruses introduced by any user on any computer.
4. **Centralised Backups.** High-capacity tape devices in the file server back up all users' work, usually every night. In case of system failure (or worker failure), lost work can be recovered quickly and easily.

Address
This is the address of the website (also called URL of the site). When someone asks to see a website, (s)he needs to put this address into the web browser, and the asked site is delivered by the webserver.

Homepage

Every website has a *home page*. It is the first web page that appears when viewers go to a website. Home page of a website is very important as it sets the look and feel of the website and directs viewers to the rest of the pages in the website.

Design

It is the overall look and feel of the website has as a result of proper use and integration elements like navigation menus, graphics, layout etc.

Content

All the webpages contained in the website together make up the content of the website.

The Navigation Structure

The navigation structure of a website is the order of the pages, the collection of what links to what. Usually it is held together by at least one navigation menu.

1.6.2 Website vs. Portal

As you already know that a website is a collection of related web pages. It is hosted on at least one web server, accessible via a network through an Internet address known as a URL (*Uniform Resource Locator*). A *Portal* or a *web portal* also has similar characteristics, but there is a key difference between a website and a portal, which you must know.

A *Web portal* is a launch pad to a host of web based services such as email, shopping, gaming, news, weather and so on whereas a website is concerned with providing information about a company cause only. For a user, a portal is the entry point for using these services. A website on the other hand provides some specific type of information.

Following table lists the differences between these two.

S.No.	Web Portal (Portal)	Website
1.	Collection of launch webpages of array of web-services like email, search engine, weather, gaming, news etc.	Collection of webpages offering a specialized content pertaining to the need and goal of the organization owning the website.
2.	It is normally an entry point or gateway for using the offered web-services.	It is often the final destination to access and use the provided specific information.
3.	Generally linked to many other websites that provide these web-services.	A website is generally linked to its own webpages.
4.	A complete environment for managing and integrating a large number of diverse applications.	Caters to or delivers one specific type of application or content as per the goal of the website.
5.	Examples : Google, Yahoo, Rediff, MSN, AOL etc.	Examples : edupillar.com, cbseacademic.in, ncert.nic.in etc.

1.7 Web Pages

A *webpage* is a digital document that is linked to the *World Wide Web* and viewable by anyone connected to the internet having a web browser. It can contain any type of information, such as *text*, *colour*, *graphics*, *animation*, *video* and *sound* etc.

1.7.1 What does it Contain ? (Components of a Webpage)

As you already know that a webpage is a digital document containing information in digital form, still we are asking this question – What does it contain or What are its components ? Well, this question can be answered in more than one way :

- ◆ Components of a webpage, **Content wise**
- ◆ Components of a webpage, **Structure wise**

Content Wise

Content wise the components of a webpage are : *Hypertext* and *Hyperlinks*

Hypertext refers to a digital text, which is more than just text as it can include information in various media formats such as :

- ◆ text
- ◆ images
- ◆ graphics
- ◆ video
- ◆ sound
- ◆ hyperlinks

Hypertext refers to a link from a hypertext file to another such file. A *hyperlink* can be in the form of a *graphic* or *text*, upon clicking where the linked document opens up.

Following figure (Fig. 1.3) shows you hypertext and hyperlinks in a webpage.

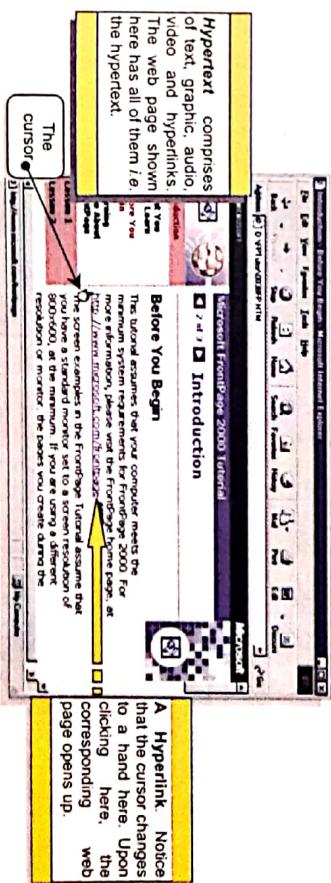


Figure 1.3 Hypertext and hyperlink.

Structure Wise

- ◆ Page Title
 - ◆ Header
 - ◆ Footer
 - ◆ Body of the web page
 - ◆ Navigational Links
- This stage is successful only when a user can view it successfully. For a web page to work properly, it has to undergo following three states :
1. Creation of Webpage
 2. Publishing / Publishing the Webpage
 3. Retrieval

In this stage, a web page is created with proper coding. Depending upon its content type, it can be in pure HTML for static page or contain some scripts also for dynamic content.

This stage also ensures that the code of the web page is error free.

1.7.2 What makes a Webpage Work ?

A webpage is viewed through a web browser on a computer or a mobile device. The working of a web page is successful only when a user can view it successfully. For a web page to work properly, it has to undergo following three states :

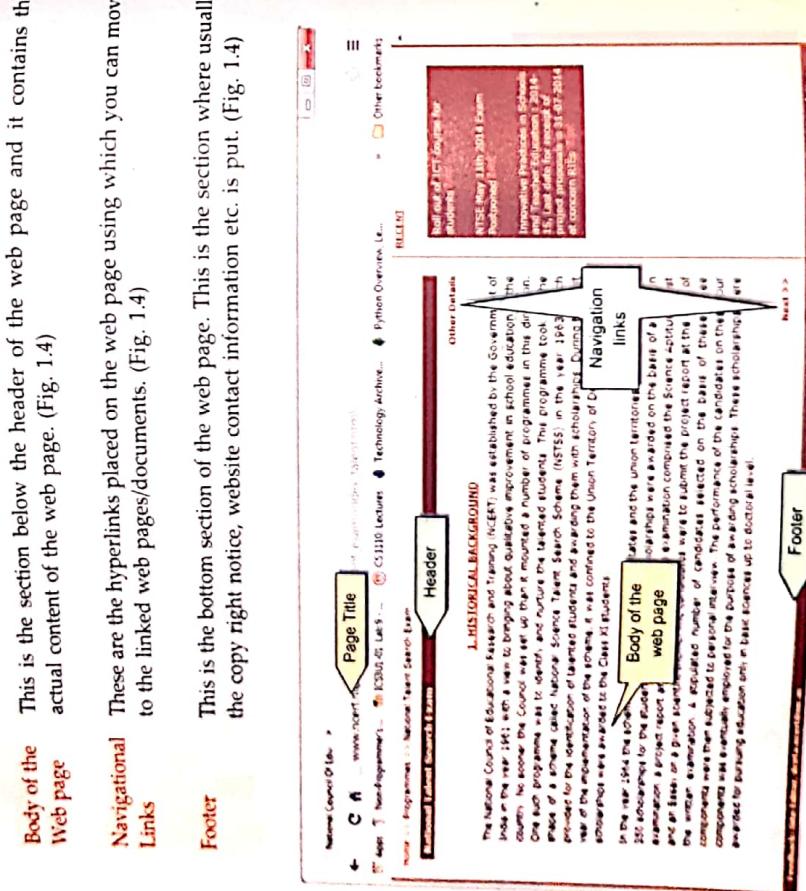
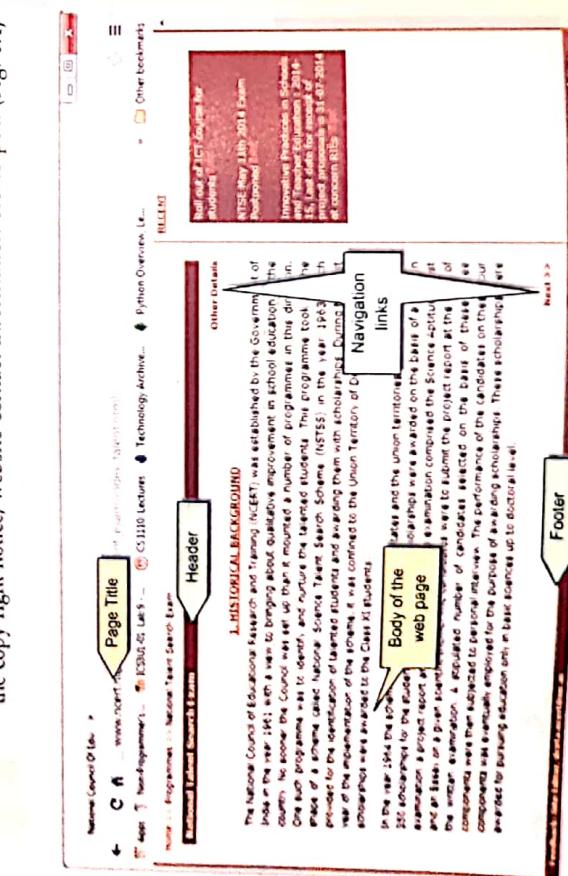


Figure 1.4 Components of a web page.

- Page Title** This is a single line text which is displayed on the title bar of the browser displaying web page. (Fig. 1.4)
- Header** This is generally a one or two line text (sometimes a graphics/image) defining the purpose of the web page. It is displayed at the top of the web page, below the address bar of the browser. (Fig. 1.4)
- Body of the Web page** This is the section below the header of the web page and it contains the actual content of the web page. (Fig. 1.4)
- Navigational Links** These are the hyperlinks placed on the web page using which you can move to the linked web pages/documents. (Fig. 1.4)
- Footer** This is the bottom section of the web page. This is the section where usually the copy right notice, website contact information etc. is put. (Fig. 1.4)

- Page Title** This is the section below the header of the web page and it contains the actual content of the web page. (Fig. 1.4)
- Header** This is generally a one or two line text (sometimes a graphics/image) defining the purpose of the web page. It is displayed at the top of the web page, below the address bar of the browser. (Fig. 1.4)
- Body of the Web page** This is the section below the header of the web page and it contains the actual content of the web page. (Fig. 1.4)
- Navigational Links** These are the hyperlinks placed on the web page using which you can move to the linked web pages/documents. (Fig. 1.4)
- Footer** This is the bottom section of the web page. This is the section where usually the copy right notice, website contact information etc. is put. (Fig. 1.4)



In order to view a web page following process takes place :

1. The user types its URL in the address bar of the web browser.
2. This web browser determines the domain name of the URL and sends the request to the web server hosting this domain name.
3. The web server now sends the code of the asked web page to the web browser on the client computer.
4. The web browser on the client computer displays the web page using the received code.

1.7.3 Difference between a Webpage and Website

A website is composed of a group of webpages linked together. A website refers to a central location on a webserver that contains more than one web page. A website may have just a home page, or it may have many other internal webpages in addition to the home page. For example, *Edupillar.com* is considered a website, which contains many webpages. However, a single webpage on this site would be its home page or AboutUs page and so on.

The complete website contains many webpages like :

- ◆ Home page
- ◆ Register page
- ◆ Content Demo page
- ◆ FAQ page
- ◆ About Us page
- ◆ Contact Us page

Each of the above mentioned are individual webpages but together these all make the website *edupillar.com*

Note
A website may have just a home page, or it may have many other internal webpages in addition to the home page.

1.8 Web Browsers

A web browser is a program that lets you visit different sites on the Net and display their offerings on your own computer. You visit a site by supplying the browser with an address, or URL.

Specifically, browsers are intended to let you access resources on World Wide Web - the hypertext files discussed earlier in this chapter. However, you can use a browser to access other types of file systems as well.

WEB BROWSER

There are many browsers available in the market e.g., Google Chrome, Mozilla, Netscape, Internet Explorer, Safari, Opera, Macweb etc. but only few of them such as *Netscape Navigator*, *Google Chrome*, *Mozilla Firefox* and *Microsoft Internet Explorers (MSIE)* appear just about everywhere. Though, MOSAIC (developed by NCSA – National Centre for Supercomputing Application) was the first web browser to come into market.

1. Graphical Browser

Text, images, audio, and video are retrievable through a graphical software program such as *Internet Explorer*, *Firefox*, *Netscape*, *Mozilla*, *Opera* and *Chrome* etc. These browsers are available for *Windows*, *Apple*, *Linux* and other operating systems. Navigation is accomplished by pointing and clicking with a mouse on highlighted words and graphics i.e., on *Hyperlinks*. You can even download and install a graphical browser on your computer. For example, *Internet Explorer* is a part of the Windows operating system, and is also available on the Microsoft site : <http://www.mozilla.com/> *Firefox* is available for downloading from <http://www.mozilla.org/products/firefox> and *Safari* is available from <http://www.apple.com/safari/>.

2. Text only Browser

Lynx is a browser that provides access to the Web in text-only mode. Navigation is accomplished by highlighting emphasized words in the screen with the arrow up and down keys, and then pressing the Enter key to follow the link. In these days of graphical browsers, it may be hard to believe that *Lynx* was once very popular.

Names of various Web Browsers

There are many web browsers in use today. The most common of these are : *Mozilla Firefox*, *Google Chrome*, *Opera*, *Safari*, *Internet Explorer*, *Torch*, *Maxthon*, *Sea Monkey*, *Avant Browser*, *Deepnet Browser* etc.

1.9 Blogs

A blog is a kind of website. The term "blog" is the shortened form of "weblog" – a diary or journal on the Web. The owner of the blog writes on the blog and is known as **blogger** or author of the blog. The activity of updating or writing for blog is called **blogging**.

- The "blogger" (or author) writes periodically about a certain topic of his or her choosing (personal experiences, thoughts, hobbies, political aspirations, etc.). The blogger can provide links to other websites that s/he thinks might interest the audience. The updates put on the blog by the blogger are called **blog posts**. Blogs usually have a few features that are useful for the blogger and the readers.

1.9.1 Types of Blogs

Web of today has millions upon millions of blogs. There are blogs maintained by individuals, there are blogs maintained by companies or organizations on the web, and then there are blogs dedicated to factual information like news, and so on. But, one thing is common – they tend to fall into these types of blogs :

1. **Personal blog**: This is the most common type of blog. Maximum numbers of blogs on Internet belong to this category. After all, blogging started off as a way of creating an online diary. A typical blogger may be keen on posting stories about their interest such as fishing, or dancing or collecting something.
2. **News and views**: This type of blog contains factual stories about News, maintained by journalists. News and television companies such as the BBC have many professional journalists who post stories and views about the latest events. Visitors can add their own opinions as well.
3. **Company blogs**: Many companies run blogs to let their customers and clients know what is going on in the company that would interest clients or customers such as new products coming up or progress being made on some project.
4. **Micro-blogs**: This is a new type of blog where one can post very short comments that others can follow. *Twitter* is the best example of a micro-blog where one can only post 140 characters with each entry called a *Tweet*. The entries become a running commentary about one's life and interests.

1.9.2 Advantages and Disadvantages of Blogs

Although blogs are proving to be very useful tool for individuals, companies, news makers etc., even micro blogging has become very popular in past few years. But there are some disadvantages also, associated with blogging.

Following table lists the advantages and disadvantages of blogs and blogging.

Table 1.1 Advantages and Disadvantages of Blogging

Advantages	Disadvantages
Enables you to write down your thoughts on anything that interests you.	Whatever you publish is available for everyone to see. If you write a post in anger you might regret later.
Easy to set up; don't need much technical knowledge.	Personal blogs may be biased or contain inaccurate information.
Easy and quick to update or add new posts.	Blogs can be time-consuming. Finding time to write regular updates can become a chore.
People can leave comments on your blog.	People may leave rude or inappropriate comments.
If you want to read other people's blogs there are literally millions to choose from.	There are many very dull blogs around. You may have to look at many before you find some worth reading.

BLOGGING

A person who writes and maintains a blog is called **blogger** and art of writing a blog is called **blogging**.

Sir

10. A web browser is a program that lets you visit different sites on the Net and display their offerings on your own computer. You visit a site by supplying the browser with an address, or URL.

Specifically, browsers are intended to let you access resources on World Wide Web - the hypertext files discussed earlier in this chapter. However, you can use a browser to access other types of file systems as well.

WEB BROWSER

There are many browsers available in the market e.g., Google Chrome, Mozilla, Netscape, Internet Explorer, Safari, Opera, Macweb etc. but only few of them such as *Netscape Navigator*, *Google Chrome*, *Mozilla Firefox* and *Microsoft Internet Explorers (MSIE)* appear just about everywhere. Though, MOSAIC (developed by NCSA – National Centre for Supercomputing Application) was the first web browser to come into market.

1. Graphical Browser

Text, images, audio, and video are retrievable through a graphical software program such as *Internet Explorer*, *Firefox*, *Netscape*, *Mozilla*, *Opera* and *Chrome* etc. These browsers are available for *Windows*, *Apple*, *Linux* and other operating systems. Navigation is accomplished by pointing and clicking with a mouse on highlighted words and graphics i.e., on *Hyperlinks*. You can even download and install a graphical browser on your computer. For example, *Internet Explorer* is a part of the Windows operating system, and is also available on the Microsoft site : <http://www.mozilla.com/> *Firefox* is available for downloading from <http://www.mozilla.org/products/firefox> and *Safari* is available from <http://www.apple.com/safari/>.

2. Text only Browser

Lynx is a browser that provides access to the Web in text-only mode. Navigation is accomplished by highlighting emphasized words in the screen with the arrow up and down keys, and then pressing the Enter key to follow the link. In these days of graphical browsers, it may be hard to believe that *Lynx* was once very popular.

Names of various Web Browsers

There are many web browsers in use today. The most common of these are : *Mozilla Firefox*, *Google Chrome*, *Opera*, *Safari*, *Internet Explorer*, *Torch*, *Maxthon*, *Sea Monkey*, *Avant Browser*, *Deepnet Browser* etc.

1.9 Blogs

A blog is a kind of website. The term "blog" is the shortened form of "weblog" – a diary or journal on the Web. The owner of the blog writes on the blog and is known as **blogger** or author of the blog. The activity of updating or writing for blog is called **blogging**.

Advantages	Disadvantages
Enables you to write down your thoughts on anything that interests you.	Whatever you publish is available for everyone to see. If you write a post in anger you might regret later.
Easy to set up; don't need much technical knowledge.	Personal blogs may be biased or contain inaccurate information.
Easy and quick to update or add new posts.	Blogs can be time-consuming. Finding time to write regular updates can become a chore.
People can leave comments on your blog.	People may leave rude or inappropriate comments.
If you want to read other people's blogs there are literally millions to choose from.	There are many very dull blogs around. You may have to look at many before you find some worth reading.

BLOGGING

A person who writes and maintains a blog is called **blogger** and art of writing a blog is called **blogging**.

Sir

10. A web browser is a program that lets you visit different sites on the Net and display their offerings on your own computer. You visit a site by supplying the browser with an address, or URL.

Specifically, browsers are intended to let you access resources on World Wide Web - the hypertext files discussed earlier in this chapter. However, you can use a browser to access other types of file systems as well.

WEB BROWSER

There are many browsers available in the market e.g., Google Chrome, Mozilla, Netscape, Internet Explorer, Safari, Opera, Macweb etc. but only few of them such as *Netscape Navigator*, *Google Chrome*, *Mozilla Firefox* and *Microsoft Internet Explorers (MSIE)* appear just about everywhere. Though, MOSAIC (developed by NCSA – National Centre for Supercomputing Application) was the first web browser to come into market.

1. Graphical Browser

Text, images, audio, and video are retrievable through a graphical software program such as *Internet Explorer*, *Firefox*, *Netscape*, *Mozilla*, *Opera* and *Chrome* etc. These browsers are available for *Windows*, *Apple*, *Linux* and other operating systems. Navigation is accomplished by pointing and clicking with a mouse on highlighted words and graphics i.e., on *Hyperlinks*. You can even download and install a graphical browser on your computer. For example, *Internet Explorer* is a part of the Windows operating system, and is also available on the Microsoft site : <http://www.mozilla.com/> *Firefox* is available for downloading from <http://www.mozilla.org/products/firefox> and *Safari* is available from <http://www.apple.com/safari/>.

2. Text only Browser

Lynx is a browser that provides access to the Web in text-only mode. Navigation is accomplished by highlighting emphasized words in the screen with the arrow up and down keys, and then pressing the Enter key to follow the link. In these days of graphical browsers, it may be hard to believe that *Lynx* was once very popular.

Names of various Web Browsers

There are many web browsers in use today. The most common of these are : *Mozilla Firefox*, *Google Chrome*, *Opera*, *Safari*, *Internet Explorer*, *Torch*, *Maxthon*, *Sea Monkey*, *Avant Browser*, *Deepnet Browser* etc.

1.9 Blogs

A blog is a kind of website. The term "blog" is the shortened form of "weblog" – a diary or journal on the Web. The owner of the blog writes on the blog and is known as **blogger** or author of the blog. The activity of updating or writing for blog is called **blogging**.

Advantages	Disadvantages
Enables you to write down your thoughts on anything that interests you.	Whatever you publish is available for everyone to see. If you write a post in anger you might regret later.
Easy to set up; don't need much technical knowledge.	Personal blogs may be biased or contain inaccurate information.
Easy and quick to update or add new posts.	Blogs can be time-consuming. Finding time to write regular updates can become a chore.
People can leave comments on your blog.	People may leave rude or inappropriate comments.
If you want to read other people's blogs there are literally millions to choose from.	There are many very dull blogs around. You may have to look at many before you find some worth reading.

BLOGGING

A person who writes and maintains a blog is called **blogger** and art of writing a blog is called **blogging**.

Sir

10. A web browser is a program that lets you visit different sites on the Net and display their offerings on your own computer. You visit a site by supplying the browser with an address, or URL.

Specifically, browsers are intended to let you access resources on World Wide Web - the hypertext files discussed earlier in this chapter. However, you can use a browser to access other types of file systems as well.

WEB BROWSER

There are many browsers available in the market e.g., Google Chrome, Mozilla, Netscape, Internet Explorer, Safari, Opera, Macweb etc. but only few of them such as *Netscape Navigator*, *Google Chrome*, *Mozilla Firefox* and *Microsoft Internet Explorers (MSIE)* appear just about everywhere. Though, MOSAIC (developed by NCSA – National Centre for Supercomputing Application) was the first web browser to come into market.

1. Graphical Browser

Text, images, audio, and video are retrievable through a graphical software program such as *Internet Explorer*, *Firefox*, *Netscape*, *Mozilla*, *Opera* and *Chrome* etc. These browsers are available for *Windows*, *Apple*, *Linux* and other operating systems. Navigation is accomplished by pointing and clicking with a mouse on highlighted words and graphics i.e., on *Hyperlinks*. You can even download and install a graphical browser on your computer. For example, *Internet Explorer* is a part of the Windows operating system, and is also available on the Microsoft site : <http://www.mozilla.com/> *Firefox* is available for downloading from <http://www.mozilla.org/products/firefox> and *Safari* is available from <http://www.apple.com/safari/>.

2. Text only Browser

Lynx is a browser that provides access to the Web in text-only mode. Navigation is accomplished by highlighting emphasized words in the screen with the arrow up and down keys, and then pressing the Enter key to follow the link. In these days of graphical browsers, it may be hard to believe that *Lynx* was once very popular.

Names of various Web Browsers

There are many web browsers in use today. The most common of these are : *Mozilla Firefox*, *Google Chrome*, *Opera*, *Safari*, *Internet Explorer*, *Torch*, *Maxthon*, *Sea Monkey*, *Avant Browser*, *Deepnet Browser* etc.

1.9 Blogs

A blog is a kind of website. The term "blog" is the shortened form of "weblog" – a diary or journal on the Web. The owner of the blog writes on the blog and is known as **blogger** or author of the blog. The activity of updating or writing for blog is called **blogging**.

Advantages	Disadvantages
Enables you to write down your thoughts on anything that interests you.	Whatever you publish is available for everyone to see. If you write a post in anger you might regret later.
Easy to set up; don't need much technical knowledge.	Personal blogs may be biased or contain inaccurate information.
Easy and quick to update or add new posts.	Blogs can be time-consuming. Finding time to write regular updates can become a chore.
People can leave comments on your blog.	People may leave rude or inappropriate comments.
If you want to read other people's blogs there are literally millions to choose from.	There are many very dull blogs around. You may have to look at many before you find some worth reading.

BLOGGING

A person who writes and maintains a blog is called **blogger** and art of writing a blog is called **blogging**.

Sir

10. A web browser is a program that lets you visit different sites on the Net and display their offerings on your own computer. You visit a site by supplying the browser with an address, or URL.

Specifically, browsers are intended to let you access resources on World Wide Web - the hypertext files discussed earlier in this chapter. However, you can use a browser to access other types of file systems as well.

WEB BROWSER

There are many browsers available in the market e.g., Google Chrome, Mozilla, Netscape, Internet Explorer, Safari, Opera, Macweb etc. but only few of them such as *Netscape Navigator*, *Google Chrome*, *Mozilla Firefox* and *Microsoft Internet Explorers (MSIE)* appear just about everywhere. Though, MOSAIC (developed by NCSA – National Centre for Supercomputing Application) was the first web browser to come into market.

1. Graphical Browser

Text, images, audio, and video are retrievable through a graphical software program such as *Internet Explorer*, *Firefox*, *Netscape*, *Mozilla*, *Opera* and *Chrome* etc. These browsers are available for *Windows*, *Apple*, *Linux* and other operating systems. Navigation is accomplished by pointing and clicking with a mouse on highlighted words and graphics i.e., on *Hyperlinks*. You can even download and install a graphical browser on your computer. For example, *Internet Explorer* is a part of the Windows operating system, and is also available on the Microsoft site : <http://www.mozilla.com/> *Firefox* is available for downloading from <http://www.mozilla.org/products/firefox> and *Safari* is available from <http://www.apple.com/safari/>.

2. Text only Browser

Lynx is a browser that provides access to the Web in text-only mode. Navigation is accomplished by highlighting emphasized words in the screen with the arrow up and down keys, and then pressing the Enter key to follow the link. In these days of graphical browsers, it may be hard to believe that *Lynx* was once very popular.

Names of various Web Browsers

There are many web browsers in use today. The most common of these are : *Mozilla Firefox*, *Google Chrome*, *Opera*, *Safari*, *Internet Explorer*, *Torch*, *Maxthon*, *Sea Monkey*, *Avant Browser*, *Deepnet Browser* etc.

1.9 Blogs

A blog is a kind of website. The term "blog" is the shortened form of "weblog" – a diary or journal on the Web. The owner of the blog writes on the blog and is known as **blogger** or author of the blog. The activity of updating or writing for blog is called **blogging**.

Advantages	Disadvantages
Enables you to write down your thoughts on anything that interests you.	Whatever you publish is available for everyone to see. If you write a post in anger you might regret later.
Easy to set up; don't need much technical knowledge.	Personal blogs may be biased or contain inaccurate information.
Easy and quick to update or add new posts.	Blogs can be time-consuming. Finding time to write regular updates can become a chore.
People can leave comments on your blog.	People may leave rude or inappropriate comments.
If you want to read other people's blogs there are literally millions to choose from.	There are many very dull blogs around. You may have to look at many before you find some worth reading.

BLOGGING

A person who writes and maintains a blog is called **blogger** and art of writing a blog is called **blogging**.

Sir

10. A web browser is a program that lets you visit different sites on the Net and display their offerings on your own computer. You visit a site by supplying the browser with an address, or URL.

Specifically, browsers are intended to let you access resources on World Wide Web - the hypertext files discussed earlier in this chapter. However, you can use a browser to access other types of file systems as well.

WEB BROWSER

There are many browsers available in the market e.g., Google Chrome, Mozilla, Netscape, Internet Explorer, Safari, Opera, Macweb etc. but only few of them such as *Netscape Navigator*, *Google Chrome*, *Mozilla Firefox* and *Microsoft Internet Explorers (MSIE)* appear just about everywhere. Though, MOSAIC (developed by NCSA – National Centre for Supercomputing Application) was the first web browser to come into market.

1. Graphical Browser

Text, images, audio, and video are retrievable through a graphical software program such as *Internet Explorer*, *Firefox*, *Netscape*, *Mozilla*, *Opera* and *Chrome* etc. These browsers are available for *Windows*, *Apple*, *Linux* and other operating systems. Navigation is accomplished by pointing and clicking with a mouse on highlighted words and graphics i.e., on *Hyperlinks*. You can even download and install a graphical browser on your computer. For example, *Internet Explorer* is a part of the Windows operating system, and is also available on the Microsoft site : <http://www.mozilla.com/> *Firefox* is available for downloading from <http://www.mozilla.org/products/firefox> and *Safari* is available from <http://www.apple.com/safari/>.

2. Text only Browser

Lynx is a browser that provides access to the Web in text-only mode. Navigation is accomplished by highlighting emphasized words in the screen with the arrow up and down keys, and then pressing the Enter key to follow the link. In these days of graphical browsers, it may be hard to believe that *Lynx* was once very popular.

Names of various Web Browsers

There are many web browsers in use today. The most common of these are : *Mozilla Firefox*, *Google Chrome*, *Opera*, *Safari*, *Internet Explorer*, *Torch*, *Maxthon*, *Sea Monkey*, *Avant Browser*, *Deepnet Browser* etc.

1.9 Blogs

A blog is a kind of website. The term "blog" is the shortened form of "weblog" – a diary or journal on the Web. The owner of the blog writes on the blog and is known as **blogger** or author of the blog. The activity of updating or writing for blog is called **blogging**.

Advantages	Disadvantages
Enables you to write down your thoughts on anything that interests you.	Whatever you publish is available for everyone to see. If you write a post in anger you might regret later.
Easy to set up; don't need much technical knowledge.	Personal blogs may be biased or contain inaccurate information.
Easy and quick to update or add new posts.	Blogs can be time-consuming. Finding time to write regular updates can become a chore.
People can leave comments on your blog.	People may leave rude or inappropriate comments.
If you want to read other people's blogs there are literally millions to choose from.	There are many very dull blogs around. You may have to look at many before you find some worth reading.

1.10 Web Address (URL)

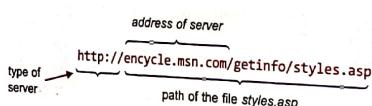
A location on a net server is called a web site. Each web site has a unique address called URL (Uniform Resource Locator) e.g., the web site of Microsoft has an address or URL called <http://www.microsoft.com>.

Let us explore it further. The Internet structure of the World Wide Web is built on a set of rules called Hypertext Transfer Protocol (HTTP) and a page description language called Hypertext Markup Language (HTML) generally. HTTP uses Internet addresses in a special format called a Uniform Resource Locator or URL.

URLs look like this :

`type://address/path`

where **type**: specifies the type of server in which the file is located, **address** is the address of server, and **path** tells the location of file on the server.
For example, in the following URL



The other examples of URLs are

`ftp://ftp.prenhall.com`, `http://www.yahoo.com`, `news://alt.tennis etc.`
A URL is also referred to as *Web Address* sometimes.

1.10.1 Elements of a URL

By now you have come to know that a URL (Uniform Resource Locator) is an address of a file on Internet. Let us discuss the components or syntax elements of URLs.

A file's Internet address, or URL, is determined by the following :

- ❖ The type of server or protocol
- ❖ The name/address of the server on the Internet
- ❖ The location of the file on the server (this location may be related as a "path" through the file hierarchy)

Note

The characters based naming system by which servers are identified is also known as domain name system (DNS).

Table 1.2 lists the types of servers you may encounter, along with the protocol they use, and the type(s) of information they provide.

In any typical URL e.g., <http://www.khoj.com>, the "http" identifies both the protocol and server. (According to standard URL syntax, a colon (:) and two forward slashes (/) follow the server. Similarly, in URL <ftp://www.mypublisher.com>, the "ftp" identifies both the protocol and server. Here it is **FTP** type of server. Refer to table 1.2 for more types of servers.

Table 1.2 Internet Servers and What they Provide

Server	Protocol	Information It Provides
ftp	File Transfer Protocol	Text and binary files that are organized in a hierarchical structure, much like a family tree.
gopher	Transfer Control Protocol/Internet Protocol (TCP/IP)	Text and binary files that are organized in a menu structure.
http	Hypertext Transfer Protocol	Hypertext/hypermedia files (i.e., multimedia documents that contain links to images, sounds, or other multimedia documents on the World Wide Web).
mail	Post Office Protocol (POP) Version 3 and Simple Mail Transfer Protocol (SMTP)	Messages sent via electronic mail.
news	Network News Transfer Protocol (NNTP)	Newsgroups that are organized in a hierarchical structure

The next component of the address is the name of the server, in this case, www.khoj.com. Server names have multiple components. Commonly (but not always) a Web server's name will begin "www" for World Wide Web. The ".com" suffix (called a *domain indicator*) indicates that Khoj is a commercial entity, as opposed to a nonprofit organization ("org"), a school or university ("edu"), a branch of the government ("gov"), etc. The naming scheme by which servers are identified is also known as the *domain name system*. Table 1.3 lists some most common domains.

Table 1.3 Some Most Common Domains

S.No.	Domain ID	Affiliation	Remarks
1.	com	Commercial	for commercial firms
2.	edu	Education	for educational firms
3.	gov	Government	for government organizations / bodies
4.	mil	Military	for Military
5.	net	Network resources	for ISPs / networks
6.	org	Usually non-profit organizations	for NGOs and other no-profit organizations
7.	co	Company	for listed companies
8.	tv	Television	for TV channels and companies

Some country abbreviations are being listed below :	
au	Australia
ca	Canada
dk	Denmark
fr	France
in	India
jp	Japan
nz	New Zealand
uk	United Kingdom
us	United States

In addition to it, a two letter abbreviation indicating the country name may be used e.g.,

<http://www.microsoft.co.in>

here the last in suggests that it is based in India (in). Similarly, the URL <http://www.clearnet.nz> suggests that it is based in New Zealand (nz).

1.11 NewsGroups

A news group or forum is like a *community bulletin board*. You can post a message, reply to a message or just read messages. When a user sends a message, the news server posts it for everyone to read. Other members of the news group can now respond to your message. Groups of related messages are known as threads.

You can subscribe to various newsgroups. It can either be done online or by creating a news account in a news-client software.

Examples of some newsgroups are :

- ◆ alt.terris
- ◆ alt.astrology
- ◆ comp.language.c++ etc.

In the coming section, we shall be illustrating the subscription to online newsgroups also known as *clubs* in Internet jargon.

1.11.1 Using a Newsgroup

Let us say, you want to join a group on HTML. So, you need to search for it first of all, what all groups are there and then subscribe to it (or join it). What we did to accomplish this task, is being summarised below. Just follow it and you'll see yourself do the same.

- (i) To search for an HTML newsgroup (or club), we first opened club site of yahoo i.e., we opened the page groups.yahoo.com and searched for *html* in it [Fig. 1.6(a)].

(ii) Now it displayed some results according to our search query (i.e., "html" search), wherefrom we selected **html4you** [Fig. 1.6(b)].

(iii) To become member of this club so that we can post our messages, we clicked at *Join this club* link and followed the instructions given by the yahoo site.

- (iv) Once we became members, we could post our messages by clicking at *Post* then by typing the desired message in the box provided for it and then by clicking at *Post Message*.

(v) A message can be read by clicking at its title. One can reply a message by clicking at *Reply* button.

All these concepts will become more clear to you when you practice it online.



Figure 1.6 (a) Searching html in yahoo.groups.

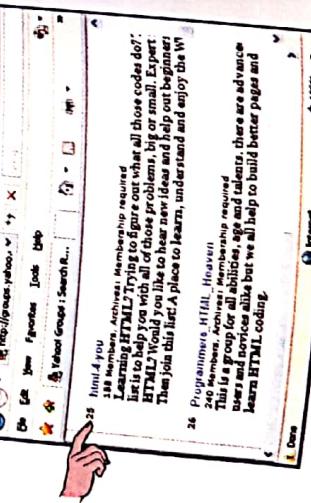


Figure 1.6 (b) Selecting desired club from search results.

NEWSGROUP

A **Newsgroup** or **Forum** is online community board, where users can post messages, respond to posted messages, or just read them. Groups of related messages are known as **Threads**.

Note
This online conversation is also called usenet.

Note

Newsroups are also called clubs or bulletin boards or message boards at times.

Markup Language

It is a set of standards, (well designed tags, structure etc.) to create an appropriate markup scheme for an electronic document such as a webpage.

Consider the following figure that shows HTML markup and its final result. We are not going into details of HTML here as a later chapter is completely dedicated to HTML only.

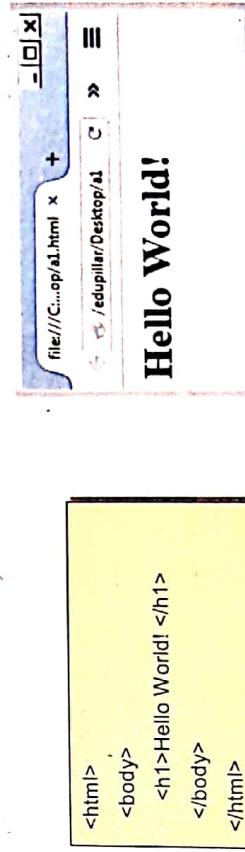


Figure 1.7 (a) HTML code with markup

As you can see that part (a) of above figure shows the markup i.e., something like

```
<html>
<body>
<h1>Hello World!</h1>
</body>
</html>
```

(b) Result of this HTML code on a web browser.

```
<html>
<body>
<h1>Hello World!
</h1>
</body>
</html>
```

These are various tags of HTML that define the markup. In details, you will learn about HTML in a coming chapter. So, we rest our discussion here only.

1.13 Protocols

A protocol is a system of rules that defines how something is to be done. In computer terminology, a protocol is usually an agreed-upon or standardized method for transmitting data and/or establishing communications between different devices.

In the following lines, we are discussing the most common protocols of www, which are HTTP and HTTPS.

HTTP (Hypertext Transfer Protocol)

Hypertext refers to special format of text that contains links to other texts, just the way we find links on a webpage, which lead to other pages. To create such pages, hypertext files are created.

The hypertext transfer protocol is an access method (method to access web pages) used over Internet. It is the primary access method for interacting with Internet. The *http* generally works in combination with *www*. The *http* is responsible for accessing hypertext documents on world wide web. Since world wide web is a system governing the use of multimedia files on the net and the hypertext files support multimedia, the *http* (hypertext transfer protocol) generally works in combination of *www*.

When the first part of a URL denotes *http*, e.g., <http://www.w3schools.com>

it indicates the local software on your machine to expect a *http* (hypertext transfer protocol).

HTTPS (Hypertext Transfer Protocol Secure)

HTTPS is another text exchange protocol that has a full form as **Hyper Text Transfer Protocol Secure**. In other words, HTTPS protocol ensures the security of the text/information being transferred over WWW.

With regular HTTP protocol, the text/information being transferred flows from server to browser directly, without any encryption, which means it can be easily stolen. You can understand encryption as this: the actual text/information is converted into some code words using a specific type of technology called SSL (secure sockets layer) certificate.

The SSL (secure sockets layer) certificate helps create a secure and encrypted connection between the server and the browser. This ensures that the information is encrypted and connection is safe so that hackers cannot steal your crucial/sensitive information (such as login id and password for online payments etc.)

Note

HTTP (Hypertext Transfer Protocol) is the set of rules for transferring hypertext (i.e., text, graphic, image, sound, video etc.) on WWW (World Wide Web)

HTTPS

HTTPS (Hypertext Transfer Protocol Secure) is enhanced versions of HTTP working with SSL (Secure Socket Layer) certificate. SSL takes care of ensuring that the data goes securely over the internet.

Note

Both **HTTP** and **HTTPS** protocols are used to transfer hypertext documents on the World Wide Web (WWW). **HTTPS** is used for sensitive information shared over Internet, such as financial data/information, personal details or bank details (login id, password etc.)

Following figure explains the difference between http and https protocols :

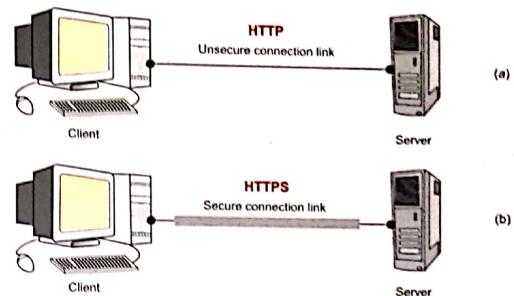


Figure 1.8

How to check if your connection is secure ?

Before keying in any personal /financial information on any website, make sure that the URL starts with "HTTPS" and that there is a padlock sign [] on the navigation bar or footer of your browser as shown below :



Following table enlists the difference between HTTP and HTTPS protocols.

Table 1.4 Difference between HTTP and HTTPS protocols

HTTP	HTTPS
* It is a system for transferring information over Internet without any security feature.	* It is a system of transferring information with SSL (Secure Socket Layer) that encrypts and sends information over a secure connection, making it hard to steal.
* It is useful for sending non-sensitive information.	* It is used for transferring/exchanging sensitive information.
* It is generally used for blogs, entertainment information and general articles etc.	* It is used for exchanging information such as login details, bank details, payment details etc.
* It does not require any additional technology for data exchange /transfer.	* It requires additional SSL certificate for secure exchange of data/information through secure connection.

**Let Us
Revise**

- ❖ Internet is a network of many small networks that exist all over the world.
- ❖ The World Wide Web is a set of programs, standards and protocols that allows the multimedia files to be created, displayed and linked on the Internet.
- ❖ The hypertext is a combination of text, graphic images, audio and video tracks and hyperlinks.
- ❖ A server is a computer that has server software loaded on it. Its main job is to share resources for clients.
- ❖ A web server is a specific protocol type of server, looking only for HTTP requests instead of many different types of resource requests.
- ❖ There can be many types of servers associated with networks, e.g., Login server, proxy servers, web server, mail server, application server, Real time communication server, FTP server, print server, Telnet server, Database server, DNS server etc.
- ❖ A website or a site is a group of related web pages hosted on a webserver and are linked together and share a common interface and design.
- ❖ A Web portal is also a type of website but it differs in content and services from a typical website that provides only specialized information.
- ❖ A document that uses HTTP is called a web page.
- ❖ The top-level web page of a web site is called home page.
- ❖ A web portal is a web site offering variety of services at single point.
- ❖ A set of rules is called protocol.
- ❖ The HTTP (Hypertext Transfer Protocol) is an access method used on Internet to access hypertext file.
- ❖ The HTTPS is a secure HTTP protocol.
- ❖ A blog refers to an online journal where entries are posted. The word **blog** has been derived from WEB LOG.
- ❖ A Newsgroup or Forum is online community bulletin board, where users can post messages, respond to posted messages, or just read them. Groups of related messages are known as threads.
- ❖ HTML refers to Hypertext Markup Language.
- ❖ HTML is a markup language (set of markup symbols, tags or codes) used to display information on a www browser page.

Assisted Practice

SECTION A : Objective Type Questions

1. A web-site is a collection of
 - (a) HTML documents
 - (b) Graphic files
 - (c) audio and video files
 - (d) all the above
2. HTML is an acronym for
 - (a) Hyper Transfer Mail Language
 - (b) High Tech Mail Language
 - (c) Hyper Text Markup Language
 - (d) Hyper Tech Mail Language