CONCEPT, EVOLUTION OF WWW & INTERNET

What is the Internet?

The Internet is a global collection of computer networks that are linked together by devices called routers and use a common set of protocols for data transmission known as TCP/IP (transmission control protocol / Internet protocol). The primary purpose of the Internet is to facilitate the sharing of information. There are many different tools used on the Internet to make this possible. Some of the more common tools include email, listservs, newsgroups, telnet, gopher, FTP, and the world wide web. Probably the most popular of all Internet tools is the world wide web.

The Internet, sometimes called simply "the Net," is a worldwide system of computer networks - a network of networks in which users at any one computer can, if they have permission, get information from any other computer (and sometimes talk directly to users at other computers). The U.S. Department of Defense laid the foundation of the Internet roughly 30 years ago with a network called ARPANET. But the general public didn't use the Internet much until after the development of the World Wide Web in the early 1990s. In 1957, the U.S. government formed the Advanced Research Projects Agency (ARPA), a segment of the Department of Defense charged with ensuring U.S. leadership in science and technology with military applications. In 1969, ARPA established ARPANET, the forerunner of the Internet. ARPANET was a network that connected major computers at the University of California at Los Angeles, the University of California at Santa Barbara, Stanford Research Institute, and the University of Utah. Within a couple of years, several other educational and research institutions joined the network. In response to the threat of nuclear attack, ARPANET was designed to allow continued communication if one or more sites were destroyed. Unlike today, when millions of people have access to the Internet from home, work, or their public library, ARPANET served only computer professionals, engineers, and scientists who knew their way around its complex workings.

Internet-Based Services

Some of the basic services available to Internet users are –

- **Email – A fast, easy, and inexpensive way to communicate with other Internet users around the world.**
- **Telnet – Allows a user to log into a remote computer as though it were a local system.**
- **FTP – Allows a user to transfer virtually every kind of file that can be stored on a computer from one Internet-connected computer to another.**
- **UseNet news – A distributed bulletin board that offers a combination news and discussion service on thousands of topics.**
- **World Wide Web (WWW) – A hypertext interface to Internet information resources.**

What is the World Wide Web (WWW)?

The WWW is a collection of Internet sites that can be accessed by using a hypertext interface. Hypertext documents on the web contain links to other documents located anywhere on the web. By clicking on a link, you are immediately taken to another file or site to access relevant materials. The interesting thing about Hypertext links is that the links might take you to related material on another computer located anywhere in the world, rather than just to a file on your local hard drive.

WWW stands for World Wide Web. A technical definition of the World Wide Web is – All the resources and users on the Internet that are using the Hypertext Transfer Protocol (HTTP).

A broader definition comes from the organization that Web inventor Tim Berners-Lee helped found, the World Wide Web Consortium (W3C): The World Wide Web is the universe of network-accessible information, an embodiment of human knowledge.

In simple terms, The World Wide Web is a way of exchanging information between computers on the Internet, tying them together into a vast collection of interactive multimedia resources.

The World Wide Web came into being in 1991, thanks to developer Tim Berners-Lee and others at the European Laboratory for Particle Physics, also known as Conseil European pour la Recherche Nucleure (CERN). The CERN team created the protocol based on hypertext that makes it possible to connect content on the Web with hyperlinks. Berners-Lee now directs the World Wide Web Consortium (W3C), a group of industry and university representatives that oversees the standards of Web technology. Early on, the Internet was limited to noncommercial uses because its backbone was provided largely by the National Science Foundation, the National Aeronautics and Space Administration, and the U.S. Department of Energy, and funding came from the government. But as independent networks began to spring up, users could access commercial Web sites without using the government-funded network. By the end of 1992, the first commercial online service provider, Delphi, offered full Internet access to its subscribers, and several other providers followed. In June 1993, the Web boasted just 130 sites. By a year later, the number had risen to nearly 3,000. By April 1998, there were more than 2.2 million sites on the Web. Today, the Internet is a public, cooperative, and self-sustaining facility accessible to hundreds of millions of people worldwide.

Basic WWW Concepts

1. **BROWSER** -- A WWW browser is software on your computer that allows you to access the World Wide Web. Examples include *Netscape Navigator* and *Microsoft Internet Explorer*. Please know that a browser can't work its magic unless you are somehow connected to the Internet. At home, that is normally accomplished by using a modem that is attached to your computer and your phone line and allows you to connect to, or dial-up, an Internet Service Provider (ISP). At work, it may be accomplished by connecting your workplace's local area network to the Internet by using a router and a high speed data line.
2. **HYPERTEXT AND HYPERMEDIA** -- Hypertext is text that contains electronic links to other text. In other words, if you click on hypertext it will

take you to other related material. In addition, most WWW documents contain more than just text. They may include pictures, sounds, animations, and movies. Documents with links that contain more than just text are called hypermedia.

3. **HTML (HYPERTEXT MARKUP LANGUAGE)** -- HTML is a set of commands used to create world wide web documents. The commands allow the document creator to define the parts of the document. For example, you may have text marked as headings, paragraphs, bulleted text, footers, etc. There are also commands that let you import images, sounds, animations, and movies as well as commands that let you specify links to other documents. If you wanted to create your own web page, you would need to know HTML or be able to use a tool that can generate HTML such as Claris *HomePage* or Adobe *PageMill*.
4. **URL (UNIFORM RESOURCE LOCATOR)** -- Links between documents are achieved by using an addressing scheme. That is, in order to link to another document or item (sound, picture, movie), it must have an address. That address is called its URL. The URL identifies the host computer name, directory path, and file name of the item. It also identifies the protocol used to locate the item such as hypertext, gopher, ftp, telnet or news. For example, the URL for the main page of the OPEN (Oregon Public Education Network) website is http://www.open.k12.or.us
5. **HTTP (HYPERTEXT TRANPORT PROTOCOL)** -- HTTP is the protocol used to transfer hypertext or hypermedia documents.
6. **HOME PAGE** -- A home page is usually the starting point for locating information at a WWW site. Currently, the home page for Roseburg High School's web site is located at http://schools.rosenet.net/roseburg/rhs/
7. **CLIENTS AND SERVERS** -- If a computer has a web browser installed, it is known as a client. A host computer that is capable of providing information to others is called a server. A server requires special software in order to provide web documents to others.

What is Web Browser?

Web Browsers are software installed on your PC. To access the Web you need a web browsers, such as Netscape Navigator, Microsoft Internet Explorer or Mozilla Firefox. Currently you must be using any sort of Web browser while you are navigating through my site tutorialspoint.com. On the Web, when you navigate through pages of information this is commonly known as *browsing or surfing*.

What is HTTP?

HTTP stands for **H**ypertext **T**ransfer **P**rotocol. This is the protocol being used to transfer hypertext documents that makes the World Wide Web possible.

A standard web address such as Yahoo.com is called a URL and here the prefix **http** indicates its protocol

FEATURES OF INTERNET SERVICES.

Major Features of the Internet:

The World Wide Web

- **The World wide web is a part of the internet, which supports hypertext documents, allowing users to view and nevigate different types of data.**
- **A web page is a document encoded with hypertext markup language (HTML) tags.**
- **HTML allows designers to link content together via hyperlinks.**
- **Every web page has an address ,a uniform resource locator (URL).**

E-mail

- **Electronic mail (e-mail) is the most popular reason people use the Internet.**
- **To create, send, and receive e-mail messages you need an e-mail program and an account on an Internet mail server with a domain name.**
- **To use e-mail, a user must have an e-mail address, which you create by adding your user name to the e-mail create by adding your user name to the e-mail server's domain name, as in jsmith@aol.com.**

News.

- **One Internet based service called news, includes tens of thousands of newsgroups.**
- **Each newsgroup hosts discussions on a specific topic. A newsgroups a some indicated its users special topic of interest, such as alt.food.cake.**
- **To participate in a newsgroup, you need a news-reader program hat.left you read articles that have been posted on a news server. You can post articles for others to read and respond to.**

Telnet

- **Telnet is a specialized service that lets you use one computer to access the contents of another computer a telnet host.**
- **A telnet program creates a " Window" into the host so you can access files, issue commands, and exchange data.**
- **Telnet is widely used by libraries to allow visitors to look up information, find articles and so on.**

File transfer protocol

- **File Transfer protocol (FTP) is the internet tool used to copy files from one computer to another.**
- **Using a special FTP program or a web browser, you can log into an ETP host Computer over the internet and copy files on to your computer.**
- **FTP is handy for finding and copying software files, articles and other types of data. Universities and software companies use FTP servers to provide visitors with access to data.**

Internet Relay chat (IRC)

- **Internet Relay chat (IRC) is a service that allows users to communicate in real time by typing text in a special window.**
- **Like news, there are hundreds of IRC "channel" each devoted to a subject or user group.**
- **You can use a special IRC program to participate in chat room discussions but many chat rooms are set up in web sites, enabling visitors to chat directly in their browser window.**

Video Conferencing

Video conferencing or Video teleconferencing is a method of communicating by two-way video and audio transmission with help of telecommunication technologies.

Mailing Lists **Used to organize group of internet users to share common information through e-mail.**
Internet Telephony (VoIP) **Allows the internet users to talk across internet to any PC equipped to receive the call.**
Instant Messaging **Offers real time chat between individuals and group of people. Eg. Yahoo messenger, MSN messenger.**

Features of common internet services

Uses:

- **View hundreds of millions web pages, all over the world.**
- **Use a search engine such as Google to find the page you want.**
- **Send and receive email.**
- **Use online shopping and e-commerce – you can buy goods, pay for them online and have them delivered o your door.**
- **Do your banking.**
- **Access customer support – many commercial organizations support the sale and maintenance of their products by putting information about their features and how to maintain them on the Web. Company websites often have help and FAQs which support customers using their products.**
- **Software distribution – for example, you can download free software or purchase it online, and download printer drivers.**
- **Access and discuss information – mailing lists, bulletin boards and newsgroups provide you with the information you need.**
- **Join discussion groups and chat online.**
- **Participate in conferences – you can even use a sound card, speakers and a microphone to talk to other users.**
- **Browse web rings.**
- **Receive web broadcasting.**
- **Advertise your business by setting up your own website or purchasing adverts on other websites.**
- **Build your own website and upload it to the Web.**
- **Upload and download digital media, such as music, images and video and publish these on the Web so that they can be shared with friends and family.**
- **Publish an online personal diary with narrative, pictures and hyperlinks.**
- **Describe and define particular topics in collaboration with other web users, using a wiki. An online encyclopedia could be a wiki, and you would find articles about history, science and many other topics that have been written by many different contributors.**
- **Use social networking sites to communicate with a closed circle of friends who can see the information about yourself that you upload.**