Networking Concepts

Internet Basics

- The Internet has gained popularity and emerged as an important and efficient means of communication.

- The term Internet is derived from the words '**interconnection**' and '**networks**'. A network is a collection of two or more computers, which are connected together to share information and resources.

- The Internet is a worldwide system of computer networks i.e. network of networks.

- Through Internet, computers become able to exchange information with each other and find diverse perspective on issues from a global audience.

- Most of the people use Internet for sending and receiving E-mails and net surfing for retrieving information.

Advantages of Internet

- Greater access to information reduces research time.
- Allows you to easily communicate with other people.
- Global reach enables one to connect to everyone on the Internet.
- Publishing documents on the Internet saves paper.
- A valuable resource for companies to advertise and conduct business.

Disadvantages of Internet

- Cyber frauds may take place involving credit/ debit card numbers and details.
- Unsuitable and undesirable material is available that sometimes can be used by notorious people such as terrorists.
- It is a major source of computer viruses.
- Messages sent across the Internet can be easily intercepted and are open to abuse by others.
- It is difficult to check the accuracy of information available on the Internet.

World Wide Web (WWW)

- World Wide Web is a set of programs, standards and protocols that allows the multimedia and hypertext files to be created, displayed and linked on the internet. It was proposed by **Tim Berners-Lee in 1991**.

- It is a virtual network of web sites connected by hyperlinks (or "links").

Differences between Internet and WWW

- The internet is the physical network of computers all over the world. The World Wide Web is a virtual network of web sites connected by hyperlinks.

- Web sites are stored on servers on the internet, so the World Wide Web is a part of the internet.

- Internet is an inter-connection of computer networks, whereas WWW is a collection of digital pages to access information over the internet.

- WWW is an information system of interlinked hypertext documents that are accessed via internet.

Common terms used in internet

- **Hypertext** – Text linked together in a complex web of associations in which the user can browse through related topics.

- **Modem** – A device that allows a computer to transmit information over a telephone line.

- **Packet** – A block of data transmitted.

- **Uploading**— Uploading is the transmission of data or file from a local computer to a remote computer.

- **Downloading**— Downloading is transmitting data or file from a remote computer to a local computer.

- **ARPANET** – Advanced Research Projects Agency NETwork
- **NSF** – National Science Foundation
- **ISP** – Internet Service Provider
- **HTML** – Hypertext Markup Language
- **URL** – Uniform Resource Locator
- **DNS** – Domain Name System

Web Server

- A web server is a computer that stores websites on the Internet and delivers web pages to viewers upon request.

- A server is a computer that "serves" many different computers in a network by running specialized software and storing information.

- They are just like our normal computers, with one major difference, they have a special software installed called 'server software'.

Web Client

- Application running on a user device which is used to interact mainly with Web servers.

- It may also refer to **plug-ins** and **helper applications** that enhance the browser to support special services from the site.

- When you access a web page, your computer is acting as a client. A client runs familiar software such as web browsers or email software, and it communicates with the server to get the information it requires.

- It refers to the web browser in the user 's computer system

Web Sites

- A website is a collection of web pages belonging to a particular person or organization.

- The first page is called the homepage. From the homepage, we can visit all pages on the site. Static websites have pre-stored information while dynamic websites customize themselves frequently. All the pages are placed in a folder on a **host server**.

- You can reach a website using a URL that's typed in the browser's search bar.

- Hyperlinks allow you to move between pages. Hyperlink is an instruction to open a linked web page.

Web Pages

- The backbone of WWW is made up of files or documents called pages or Web Pages, that contain information and links to resources- both text and multimedia.

- It is created using HTML (HyperText Markup Language). The Web is a collection of large number of web pages that are stored on computers around the world which are connected to one another using hyperlinks.

- To view a web page, the client must use a web browser like Google Chrome or Mozilla Firefox.

Web Browsers

- Software application that is used to locate, retrieve and display some content on the World Wide Web, including Web pages.

- It is a program used to explore the Internet.

- It is an interface that helps a computer user to gain access over all the content on the Internet.

- We can install more than one Web browser on a single computer.

- The user can navigate files, folders and websites with the help of a browser.

Blogs

- A blog is a Website or a Web page, in which an individual records opinion links to other sites on regular basis. A blog content is written frequently and added in a chronological order. It is written online and visible to everyone.

<u>Benefits:</u>

- You can work at any time of the day and at your ease.
- Easy and quick to update or add new posts.
- People can leave comments on your blog.
- It increases blog revenue.
- Blogs can be set-up quickly.
- It is all about being social. You (blogger) need to answer to peoples' queries and for that, reading should be a part of day-to-day tasks.

News groups

- An area on a computer network especially the Internet, devoted to the discussion of a specified topic is known as Newsgroup.
Newsgroup is an online discussion group that allows interaction through electronic bulletin board system (Usenet) and chat sessions.

- A newsgroup is a world wide platform for exchanging its content, ideas and information by common minded people. Newsgroup and contents are stored on special servers called Network News Transfer Protocol (NNTP) servers.

To simplify the selection of suitable newsgroup, they are divided into subject classification which are as follows:

- **rec –** Recreation and entertainment topics.

- **news –** Matter related to the functionality of Usenet itself.

- **sci –** Science related topics.

- **soc –** Discussion related to society and social subcultures.

- **comp –** Computer related topics.

HTML

Protocols

- It refers to a set of rules that co-ordinates the exchange of information. Both the sender and the receiver should follow the same protocol to communicate data.
- **Protocols of the Web**
- **HTTP** (HyperText Transfer Protocol) A protocol that transmits hypertext over networks. It is the stateless protocol of the Web.
- **SMTP** (Simple Mail Transfer Protocol) It distributes E-mail messages and attached files to one or more electronic mail boxes, e g. atmail
- **FTP** (File Transfer Protocol) It transfers files between a server and a computer, e.g. Filezilla.
- **VoIP** (Voice over Internet Protocol) It allows delivery of voice communications over IP networks, e.g. Skype.
- **POP** (Post Office Protocol) It is the primary protocol behind E-mail communication e.g. Outlook.
- **IMAP** (Internet Message Access Protocol) It is a standard protocol for accessing E-mail from your local server, e.g. broadband mechanisms.