

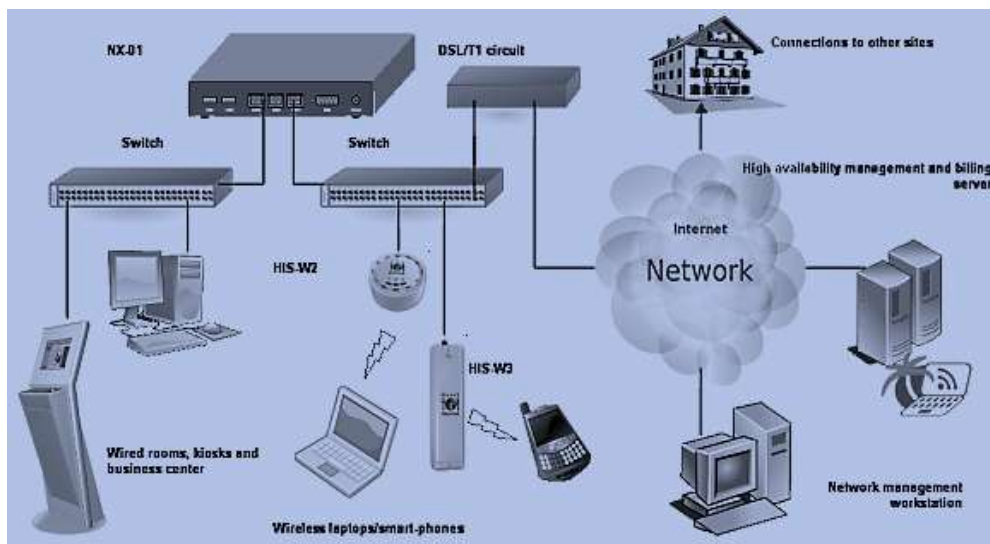
Introduction to the Internet: (Unit: IV)

Unit IV: Introduction to Internet

Definition and meaning, Growth of internet, owner of internet, anatomy of internet, Basic Internet terminologies, Net Etiquette, WWW, Internet Protocols, Usage of internet to society and Search Engines.

DEFINITION

The **Internet** is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to serve billions of users worldwide. It is a *network of networks* that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless and optical networking technologies. The Internet carries a vast range of information resources and services, such as the inter-linked hypertext documents of the World Wide Web (WWW) and the infrastructure to support electronic mail and other net related applications.



The above diagram is the IOT- Internet of things.

GROWTH OF INTERNET

The origins of the Internet reach back to research of the 1960s, commissioned by the United States government in collaboration with private commercial interests to build robust, fault-tolerant, and distributed computer networks. The funding of a new U.S. backbone by the National Science Foundation in the 1980s, as well as private funding for other commercial backbones, led to worldwide participation in the development of new networking technologies, and the merger of many networks. The commercialization of what was by the 1990s an international network resulted in its popularization and incorporation into virtually every aspect of modern human life. As of 2011, more than 2.1 billion people – nearly a third of Earth's population – use the services of the Internet.

INTERNET GROWTH STATISTICS

And the " Global Village " became a Reality

Internet has made real what in the 1970's that visionary of the communications Marshall McLuhan (1911-1980) called the "Global Village".

DATE	% WORLD POPULATION
December, 1995	0.4 %
June, 2011	30.4 %
June, 2012	34.5%
June, 2013	39.0%
June 2015	46.1%
June 2016	48%
June 2017	51.7 %
June 2018	55.1%
Mar 2019	56.1

Domain name growth:

The Internet grew by 4.5 million top-level domain names in the first quarter of 2011, with .com still dominating

The first quarter of 2011 closed with a base of more than 209.8 million domain name registrations across all Top Level Domains (TLDs), an increase of 4.5 million domain names, or 2.2 percent over the fourth quarter. Registrations have grown by 15.3 million, or 7.9 percent over the past year.

Ownership/Governance

The Internet is a globally distributed network comprising many voluntarily interconnected autonomous networks. It operates without a central governing body. However, to maintain interoperability, all technical and policy aspects of the underlying core infrastructure and the principal name spaces are administered by the Internet Corporation for Assigned Names and Numbers (ICANN), headquartered in Marina del Rey, California. ICANN is the authority that coordinates the assignment of unique identifiers for use on the Internet, including domain names, Internet Protocol (IP) addresses, application port numbers in the transport protocols, and many other parameters. Globally unified name spaces, in which names and numbers are uniquely assigned, are essential for the global reach of the Internet. ICANN is governed by an international board of directors drawn from across the Internet technical, business, academic, and other non-commercial communities. The government of the United States continues to have the primary role in approving changes to the DNS root zone that lies at the heart of the domain name system.^[35] ICANN's role in coordinating the assignment of unique identifiers distinguishes it as perhaps the only central coordinating body on the global Internet. On 16 November 2005, the World Summit on the Information Society, held in Tunis, established the Internet Governance Forum (IGF) to discuss Internet-related issues.

W3C

The World Wide Web Consortium (W3C) is an international community where Member organizations, a full-time staff, and the public work together to develop Web standards. Led by Web inventor Tim Berners-Lee and CEO Jeffrey Jaffe, W3C's mission is to lead the Web to its full potential.

Functions of W3C:

W3C's primary activity is to developing protocols and guidelines that ensure long-term growth for the Web. W3C's standards define key parts of what makes the World Wide Web work.

LOCATION: W3C does not have a single physical headquarters. There are three institutions, however, that "host" W3C: MIT (in Cambridge, MA, USA), ERCIM (in Sophia-Antipolis, France), and Keio University (near Tokyo, Japan).

WEB AND INTERNET:

"The Internet is a global system of interconnected computer networks that interchange data by packet switching using the standardized Internet Protocol Suite (TCP/IP)." Thus, the Internet is defined by the TPC/IP standards.

The Web, on the other hand, is defined in W3C's Architecture of the World Wide Web, as follows: "The World Wide Web (WWW, or simply Web) is an information space in which the items of interest, referred to as resources, are identified by global identifiers called Uniform Resource Identifiers (URI)." Thus, the Web is defined by other specifications. The first three specifications for Web technologies defined URLs, HTTP, and HTML.

INTERNET TERMINOLOGY:-

WWW: 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).

WEB PAGE: A **web page** or **webpage** is a document or information resource that is suitable for the World Wide Web and can be accessed through a web browser and displayed on a monitor or mobile device. This information is usually in HTML or XHTML format, and may provide navigation to other web pages via hypertext links. Web pages frequently subsume other resources such as style sheets, scripts and images into their final presentation.

WEB SITE: A **website**, also written as **Web site**,^[1] **web site**, or simply **site**,^[2] is a collection of related web pages containing images, videos or other digital assets. A website is hosted on at least one web server, accessible via a network such as the Internet or a private local area network through an Internet address known as a Uniform Resource Locator:

URL: Uniform Resource Locator or **Universal Resource Locator (URL)** is a specific character string that constitutes a reference to an Internet resource, which is stored on some servers.

IP Address: Unique 32 bit number given to the machines on a network. It is this IP Address that uniquely names and identifies a machine on the network. An IP address is mostly mapped as a name (Domain Name), that is popular and easy to use and the Domain Name has to be mapped to the right IP address to access the server. This is the work of the DNS Server.

DNS: Domain Name System (DNS) is a hierarchical distributed naming system for computers, services, or any resource connected to the Internet or a private network. It associates various information with domain names assigned to each of the participating entities. Most importantly, it translates domain names meaningful to humans into the numerical identifiers associated with networking equipment for the purpose of locating and addressing these devices worldwide.

PROTOCOL:

HTML: Hyper Text Mark up Language, is a mark up language used for creating web pages. It uses tags and attributes that can be used within tags to create different effects to the text or objects in the web page.

HTTP: HTTP (Hypertext Transfer Protocol) is the set of rules for transferring files (text, graphic images, sound, video, and other multimedia files) on the World Wide Web. As soon as a Web user opens their Web browser, the

user is indirectly making use of HTTP. HTTP is an application protocol that runs on top of the TCP/IP suite of protocols

FTP: This is File Transfer Protocol, used while transferring huge files over the internet. FTP allows large files to be transferred from one server to another. FTP softwares are used for this purpose. Some examples are CuteFTP, WS FTP etc. Most website uploading and transfer of files are done using FTP clients. FTP Client programs allow a user to login to a server and transfer files with various access controls.

SMTP(Simple Mail Transfer Protocol): SMTP is a protocol for sending email messages across the Internet. It is used in conjunction with both POP3 (Post Office Protocol) and IMAP(internet Message Access Protocol), protocols that enable you to download messages from a mail server to your computer. SMTP is used for outgoing mail while POP3 and IMAP are used for incoming mail.

TCP/IP: TCP/IP (Transmission Control Protocol/Internet Protocol) is the basic communication language or protocol of the Internet. It can also be used as a communications protocol in a private network . TCP/IP is a two-layer program. The higher layer, Transmission Control Protocol, manages the assembling of a message or file into smaller packets that are transmitted over the Internet and received by a TCP layer that reassembles the packets into the original message. The lower layer, Internet Protocol, handles the address part of each packet so that it gets to the right destination.

NETIQUETTE (short for "network etiquette" or "Internet etiquette")

Netiquette" stands for "Internet Etiquette", and refers to the set of practices created over the years to make the *Internet* experience pleasant for everyone. Like other forms of etiquette, netiquette is primarily concerned with matters of courtesy in communications.

The Guide lines... they can vary...: Be yourself and respect the other:

1. "Sign Your Messages."

At least include your name and e-mail address at the bottom of your message, much like you would sign a letter. Some users include such things as their title, department, institution, phone number and fax number. If a recipient of your message would like to contact you, including this information will assist them in responding.

Many e-mail packages allow you to insert a text file into the body of the message. If this is the case, use a wordprocessor program or text editor and create your 'trailer' and then insert it at the bottom of your message.

2. "DON'T USE ALL CAPS or all lower case letters."

Using all one case of letters can make your message difficult to read. Some readers find all caps offensive -- similar to being shouted at.

3. "Remember, e-mail is nothing but a letter or a memo."

As such, you should follow normal letter/memo writing practices, ie., paragraphs, capitalisation, spacing, etc. This will greatly increase reader understanding. Nobody's going to check your grammar, it just helps get the point across accurately.

4. "Be careful with sarcasm."

We all have a sense of humour, but sometimes it doesn't come across as such when the recipient can't see your smiling face. Humour's fine, but you might want to put a little smiley face :-)) after it, or some other notation so people know it is intended to be humorous.

5. "Include an accurate message subject."

Many readers will look at the sender and the subject and delete or read the message as these two items relate to them. If you don't have a subject or your subject is incorrect, your important message may not be read by the person who has the answer for you.

6. "Don't respond to the list when you want to correspond with a person."

Before you send a message, think about who your audience is. If you want to send a note to a person, send it to that person (e-mail address from the trailer mentioned in point 1 above). Responses to the list are great, if it is

something the list subscribers will benefit from. Otherwise, it just clutters up a lot of mail boxes, like getting junk mail at home.

7. "Read It Before You Send It."

Sometimes it's too easy to type a quick message and send it before you've realised what you've written. This can be embarrassing. Keep in mind that hundreds of people will get the correspondence you send to the list. You don't want to look like a grammar school dropout.

8. Most of all, use the list.

Many people are new to e-mail or haven't been subscribers very long. We were all there once (at least:-)), so don't be afraid to ask questions.

APPLICATIONS OF THE NET:

These are some common applications of the internet Internet :

www: The world wide web with all its contents and resources become a pool of data and information. Users are able to find relevant information for anything that is of interest.

E-mail: The internet of computers allow communication and message transfer between users and systems and this is one of the mostly used applications on the net.

FTP: FTP applications, called FTP clients are used to transfer huge files over the net.

Newsgroup: These are discussion forums and groups that come together on topics of common interest.

Social Network: This is the most widely used applications in the present world of the net. These allow interactions and communication as in a real world –Applications like Twitter, Facebook, etc

Multimedia content sharing: Internet is a pool of massive Audio-Video-Graphic contents. These can be shared and used keeping the rules attached.

Data Storage and sharing: Using the applications like Cloud computing and On-line storage, data can be stored, applications can be used, platforms can be accessed for various uses over the internet. This allows freedom from systems and expensive Software costs.

E-commerce: E-Com allows online trading of goods for sale and purchase.

Online Payment And Money Transfer: Money transfer and payments to different vendors and service providers can be done on the net.

Telephony (VOIP) Video Telephony: This allows voice over the internet allowing video contents. These are inexpensive compared to existing telephone networks.

Tele-medicine: Allows consulting of medical experts and seeking advice of doctors for rural and remote areas.

Video Conference : This allows conference meet and discussions to be more alive and interactive by use the video conferencing on the net.

Tutorials: Net has lots of academic contents and information that can be used as a pool of information.

Search Engines: Search engines help a user to collect relevant data and information from the net.

SEARCH ENGINES:

A **web search engine** is designed to search for information on the World Wide Web and FTP servers. The search results are generally presented in a list of results often referred to as SERPS, or "search engine results pages". The

information may consist of web pages, images, information and other types of files. Some search engines also mine data available in databases or open directories. Unlike web directories, which are maintained only by human editors, search engines also maintain real-time information by running an algorithm on a web crawler.

Common SEs: GOOGLE(91%, YAHOO: 4%; BING: 3%)

Indian search engines: Khoj.com; rediff.com, –guruji.com, 123india.com

CONTENTS OF E-MAIL AND FIELDS:

To: This is used for giving the address of the receiver.

CC: This is used as the Carbon Copy filed, for copying the same mails to multiple users.

BCC: Blind Carbon Copy , filed copies the content of the mail to multiple users as in CC, but blinds the others in the mailing list each.

Subj: This is the subject field, where the subject or a title to the mail sent is added.

Signature: This is the senders signature meaning the name and designation of the person.