

-:(Intro to ICT):-

Semester # 01:-

Internet & www:-

Internet:-

Internet stand for "Interconnected network." Internet is the network of networks, where a user at any computer get and send information from any other computer."

The internet holds a huge range of information as well as services like Email, Voice-over IP, Television, Games, File sharing, shopping etc.

History of Internet:-

In 1960s, the Internet was started as a medium for sharing information with government researchers. During the time, computer were larger in size and were

immovable. In case anyone had to access the information stored in any computer, they had to travel to the location of the computer.

The Escalated Cold War played a major role in the creation of Internet.

In 1960s, the United States was engaged in cold war with Soviet Union. At that time computers were much larger and more expensive as compare to today models.

Scientist developed "packet switching" method for transferring data from one computer to another.

ARPA net:-

ARPA stand for "Advanced Research projects Agency" network, which evolved into the Internet.

ARPA net became a large success with restricted participation where it was accessible and had to contracts with the US defense Department.

The "Packet switching" method is used in ARPA net.

Packet Switching allowed computers to connect each other over network called ARPA net.

In 1969, the first computer communicated area ARPA net from UCLA and SRI in

California. This network has only four nodes and bus topology is used out more needed to allow research universities to share data and resources.

TCP/IP:-

Control protocol (TCP/IP) which was developed in 1970. It was adopted for a new communication protocol for ARPANET.

There were many networks were developed out and unable to communicate with each other. To solve this problem TCP (Transmission Control Protocol) and IP (Internet Protocol) was invented.

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TCP/IP were efficient protocol that allowed different networks to connect and ensure correct data transmission to final destination.

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www:-

The www (world wide web) is an information system that enables content sharing over the internet through user-friendly ways.

It allows documents and other web resources to be accessed over the internet according to the rule of HTTP.

Internet Service Provider (ISP):-

• Overview:-

→ An internet Services provider is an organization that provides services for accessing, using, managing in the internet.

→ ISP can be organized in various forms, such as, commercial,

Community owned, non-profit, or otherwise privately owned.

→ ISPs emerge in the late 1980s and early 1990s, are the business and organizations that provide users with internet access and related services.

→ ISPs are the companies that provides telecommunications services including data communication and telephone connections.

- Types of ISP:-

(i) Access ISP:-

An Access ISP employs a variety of technologies to facilitate consumer's connection to their network. These technologies may include broadband and dialup.

(ii) Mailbox ISP:-

The Mailbox ISP offers a mailbox hosting services to send, receive secure email services to send, receive the emails over the internet.

These are the companies that hosts email services.

(iii) Hosting ISP:-

A Hosting ISP provides web hosting services, virtual machines, FTP(File transfer protocol), clouds and physical services.

It runs a website for a person or organization. The host ISP is responsible for the proper identification and administration of the domain name at the site.

(iv) Transit ISP:-

A Transit ISP provides a large number of bandwidths needed to connect Access ISP and hosting ISP.

Most ISPs need to buy IP transit services from some of the largest internet backbone networks.

(v) Virtual ISP:-

A virtual ISP is the company that markets its own services while taking advantage of resources or services provided by the other ISP companies.

They purchase services from the other ISP to allow customized internet access and receives.

(vi) Free ISP (Free net) :-

Free ISPs provides free of cost internet charges and offers in order to display advertisement which user connected with the internet. These services supported by advertisement which appears on a special version of the user's browser.

- Examples:-

• Tier 1 ISPs Examples:

(i) AT & T

(ii) Century Link

(iii) Sprint

(iv) Verizon

• Tier 2 ISPs Examples:

(i) Comcast

(ii) CTS Telecom

(iii) Cox Communication

(iv) Rok Telecom

(v) UTL

(vi) Airtel

• Tier 3 ISPs include smaller

regional and local provider

PTCL, TP-Link

Factors of ISPs:-

(i) Checking Bandwidth (Speed) :-

It is important weigh both the speed and bandwidth of the ISP.

The streaming video, playing online games and downloading large files greatly benefits from a high speed connection.

(ii) Compare prices and Cost :-

Compare costs among providers and package before settling on an ISP. By this information, you can locate the most affordable options.

(iii) Consistency or Availability:-

It's crucial that you can count on a constant internet speed. By checking the availability of Internet services,

you played a streaming videos, play online games etc with great benefits.

(iv) Reliability or Security:-

It is important before picking an internet services provider with solid security policy.

Selecting an ISP with strict security is important in protecting your private and sensitive data online.

(v) Data Policy:-

You must take's the ISP's data services or policy into account. It may significantly affect the safety of your private data stored online.

Services of ISPs:-

ISPs provides many services to manage our internet works on our browsers etc.

- Access Connection
- Domain name
- Dialouge Access
- Domain - Host
- Least line Access.

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Web Browsers and its features / functions:-

Web Browser:-

"Web Browser is a utility program that provide windows or Interface to users which allows to find and visit different websites on the Internet."

It displays websites on your screen and allows to interact with them by entering texts and clicking on links.

Examples:-

- Google Chrome
- Mozilla Firefox
- Opera Mini
- Microsoft Edge

URL:-

URL stands for "Uniform Resources Locator". It is also known as an address of the web. URL holds the address of any sites on the internet. URL is a unique identifier used to locate a resource on the internet.

Structure of URL:-

The URL contains the name of the Protocol needed to access a resource, as well as resource name.

(i) The first part of a URL is a protocol to use as the primary access medium.

(ii) The second part is IP address or domain name where the resource is located.

URL Protocols:-

URL Protocols include HTTP (HyperText Transfer Protocol) and HTTPS (HyperText Transfer Protocol Secure) of web resources, mail to for email addresses, FTP (File Transfer Protocol).

Most URL protocols are followed by a colon and two forward slashes such as "http://".

HTTP Vs HTTPS:-

Both HTTP and HTTPS are used to retrieve data from a web server to view content in a browser. The difference between them is that HTTPS uses a SSL (Secure Sockets Layer) certificate to encrypt the connection between user and server.

HTTPS uses TCP/IP port number 443 by default, and the HTTP uses Port 80.

Features of Web Browser:-

A web Browser is a medium through which you can basically access different websites.

-:Features:-

(i) **Home Page:** When we open a browser, the first web page which load is called the home page.

The home page has some default setting, it can be changed temporarily according to user's preference.

(ii) **Address Bar (URL):** The URL of the website that has to be accessed is entered here. Through this bar user can access different websites or search

anything on Browser.

(iii) **Navigation Buttons:** Using the forward and backward buttons user can re-visit previously opened web pages. These buttons provide ~~conviente~~ convenience to retrieve data previously accessed.

(iv) **History:** If you visit a website and want to re-visit it after a few days then every browser has a history function where it collects all previously visited data.

(v) **Bookmark:** This features help in quickly accessing websites. If you come across some important web page you can always bookmark it for easy access in future.

(vi) **Extensions:** Extensions and plugins like (AdBlock) can be installed by the user. These extensions

help in improving functionality of web browsers.

(vi) **Home Button:** It brings the user to home page which can be set by user.

(vii) **Refresh Button:** The refresh button reloads the page and shows updates if any.

function of Browser:-

-Functions:-

- The main function of a web browser is to provide an interface to the user for sending request, and fetching data from the web server.
- It also displays the information to the user including multimedia elements (images & videos) in the form of webpages, using CSS and Java Script.

- A web browser act as a platform to access various websites. Users can visit different website by just entering the URL on the internet.
- Browsers also have navigation features like a navigation bar, tabs and other tools which make surfing the net easier.
- The data accessed by a user frequently is stored by the web browsers in the form of cache.
- The major task is collect information from the internet resources and make it accessible to users.

- Types of Links -

- (i) Mobile
- (ii) WiFi Hotspot
- (iii) Dial-up
- (iv) Broadband
- (v) DSL (Digital Subscriber Line)
- (vi) Cable
- (vii) Satellite
- (viii) ISDN (Integrated Services digital network)