NOTES

Grade: 10   **Chap-1 – Internet Basics**   **Sub: Computer Applications**

Internet and Its Components:

The Internet is a complex global network of interconnected computers and computer networks. It consists of various components and technologies that work together to enable communication and the exchange of information. Here are some key components of the Internet:

- **Network Infrastructure**: The physical and hardware components that make up the network infrastructure include routers, switches, modems, cables (fiber-optic, coaxial, and copper), and wireless access points.
- **Protocols:** Protocols are the set of rules that governs the working of Internet. E.g. TCP/IP, FTP, HTTP etc.
- **Internet Service Providers (ISPs):** ISPs are companies that provide users and organizations with access to the Internet. E.g. Idea, Vodafone, BSNL, MTNL, Airtel etc.
- **Servers and Clients:** Servers are computers or devices that provide access to resources such as websites, email, and files. Web servers, for example, host websites and respond to requests from clients.

  Clients are devices used by end-users to access and interact with resources on the Internet. Web browsers, email clients, and file transfer programs are examples of client applications.
- **Domain Name System (DNS):**

  The DNS translates human-readable domain names (like www.example.com) into IP addresses that computers use to identify each other on the network. This system makes it easier for users to remember and access websites using domain names instead of numerical IP addresses.
- **Web Browsers:** Web browsers, such as Chrome, Firefox, Safari, and Edge, are applications that allow users to navigate the World Wide Web. They interpret and display web content, handling tasks like rendering HTML, executing scripts, and managing user interactions.

Internet and WWW:

Internet:

The Internet is a global network of interconnected computers and computer networks. It allows communication and data exchange between devices worldwide.

World Wide Web (WWW):

The World Wide Web is a system of interlinked hypertext documents, images, videos, and other multimedia content, which is accessed and viewed via the Internet using web browsers. It is a set of standards, protocols and programs that allows hypertext and multimedia documents to be created and displayed on internet.

The WWW was invented by Sir Tim Berners-Lee in 1989 and became publicly accessible in the early 1990s.

The web is essentially a collection of web pages hosted on servers and connected through hyperlinks. Users can navigate between these pages by clicking on links, and each page can contain text, images, multimedia, and hyperlinks to other pages.

Difference between Internet and WWW

Internet is a large collection of smaller networks worldwide whereas WWW is a subset of Internet i.e   A large part of internet is WWW which contains many websites.

Along with Internet WWW also contains e-mail, Chat, Usenet, FTP, Blogs, Newsgroups etc.

INTERNET
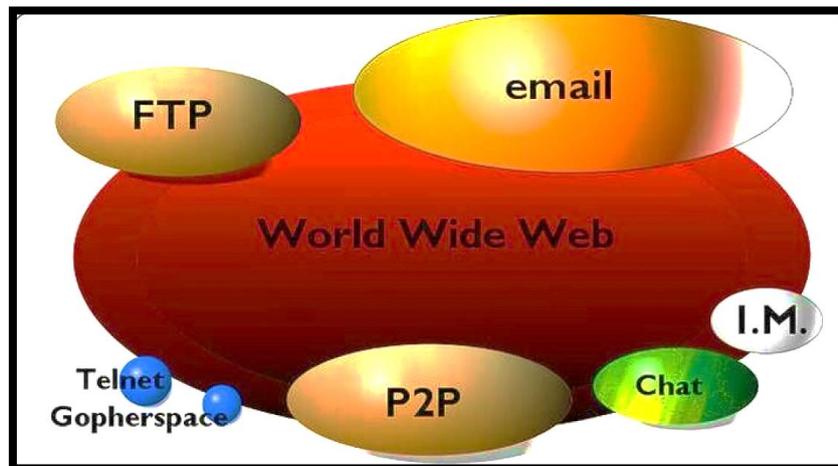
Server:

→ A special computer system that provide services to other computer on the network.

→ A server manage network resources and share resources for client computer

→ Different types of server are:

- File server: a **file server** is a computer responsible for the central storage and management of data files so that other computers on the same network can access the files.
- Mail Server: A mail server (or email server) is a computer system that sends and receives email.
- Web server: A Server that delivers webpage and handle HTTP request.

Services provided by Server:

1. **Equipment/ Resource Sharing**: Server share resources to its client computers such as printers, scanners
2. **Centralized File saving for data sharing:** Server stores data at common place on server and allows users to access their files from any client computer.
3. **Centralized virus scanning:** Most Servers runs virus scanners to detect any harmful program such as virus on the network.
4. **Centralized backup:** Server uses high-capacity backup drives in which regular backup of user's data is taken which can be used to restore data in case of system failure.

Web Server:

→ It is a server that hosts the website and delivers (Serves) webpage as requested by client through web browser.

→ It has installed web server software that handle http request. E.g. IIS, Tomcat, Apache, nginx etc.

Services provided by Web Server:

1. **Serving Webpages:** Main function of webserver is to serve and deliver webpages as requested by client using web browser.
2. **Running gateway programs (CGI) and Returning output**: To process user's request webserver runs special program CGI that generate and return required result to user.

3. **Controlling access to server**: Web server controls access to server such as taking data from web forms, uploading, and downloading files etc.
4. **Monitoring and logging all access**: Webserver runs monitoring programs that ensures only authorized user can access and login onto server
5. **Server-side scripting**: Webserver runs server-side scripting that helps to generate dynamic webpages.

Website:

A collection of WebPages interlinked via a system of hyperlink.

A website and its WebPages are hosted on web server.

It contains information on specific topic.

A website can contain information in the form of text, images, audio, video etc.

Components of a website:

i) **Webhost**: A server where website is physically located.
ii) **Address:** Address of a website is also called URL. It is used by user to access the website.
iii) **Homepage**: First pages of website that display when user open the website. It contains introduction and links to other WebPages of the website.
iv) **Design:** Look and appearance of website.
v) **Content:** The information present on the website in the form of text, images, audio, video etc.
vi) **Navigation Structure:** The order of WebPages which is a collection of hyperlinks used to move different WebPages in the website.

Website Vs Web Portal:

Web portal	Website
1. It contains a link to other websites.	1. It contains links to its own WebPages
2. It is a gateway to other websites.	2. It is final destination.
3. It has a collections or array of web services like search engine, email etc.	3. It contains information on a specific topic.
4. Example: www.google.com	4. Example: edupillar.com

Webpage:

A digital document used to store and display information on Internet.

Components of a website:

i) Content wise:
   - Hypertext: A digital text that includes information in various media formats like: text, audio, video, images, sound, graphics etc.
   - Hyperlink: A text or image on webpage which is linked to other webpage.
ii) Structure wise:
   - Page title: A short text contains title of website and displayed on title bar of web browser.
   - Header: Brief information displays on top of website and webpage
   - Body of webpage: Contains main content of the website.
   - Navigational Links: A place on website where links to other WebPages are displayed.
   - Footer: Present at bottom of website generally contains contact and copyright information.

How does webpage works?

A webpage can be viewed by client using a program called web browser.

There are three stages of a webpage to work:

1. Creation of webpage.
2. Uploading/ Publishing of webpage.
3. Retrieval/ Access of webpage by client.

Website Vs WebPages:

A WebPages is a digital document that contains information on internet where as a website is a collection of different interlinked WebPages

A complete website may contain:

➢ Home page
➢ Content Demo Page
➢ About Us page
➢ Register Page
➢ FAQ page
➢ Contact Us page

Web browser:

A web browser is a software application designed for accessing information on the World Wide Web. It acts as an interface between users and the content available on the internet.

Types of Web Browser:

There are two types of web browser:

- **Graphical Web Browsers:** Graphical web browsers are the most common type, providing a visual interface with images, text, and multimedia content. Users interact with these browsers through graphical elements like buttons, menus, and windows. Examples: Google Chrome, Mozilla Firefox, Microsoft Edge, Apple Safari, Opera

- **Text-Only Web Browsers**: Text-only browsers can display only textual content. Pictures and graphics cannot be displayed. Examples: Lynx is a popular text-based browser known for its simplicity. It displays web pages in plain text.

Blog:

A blog is a diary or online journal where entries are posted in reverse chronological order. A blog is a type of website or a section of a website where individuals or groups regularly post content. A person who writes and updated content of blog is known as **blogger** and the process to update the blog is known as **blogging**. Some sites to create blog are: www.wordpress.com, www.blogspot.com, bloggers.com etc,

Types of blogs:

Most common forms of blog are:

1. **Personal blog:** This type of blog is created by any individual and contains the content on topic according to user interest.
2. **News and Views:** This type of blog is maintained by news anchors and TV journalist who write the content regarding the events happening around us.
3. Company blog: A company blog is a blog maintained by a business or organization. It serves as a platform for the company to share information and to advertise their products.
4. Micro blog: Microblogs are a type of short-form blogging where users post brief updates or thoughts. Platforms like Twitter and Tumblr are examples of microblogging platforms.

Advantages and disadvantages of blog-

Advantages	Disadvantages
Develop Writing Skills	Time-consuming
Connect with Others	Cyberbullying
Share Knowledge	Privacy Concerns
Creativity	Comparison Syndrome
Easy use create	Difficulty Monetizing

Web address:

A web address, also known as a URL (Uniform Resource Locator), is a unique identifier for a resource on the internet. It specifies the location of a resource and the protocol used to access it.

Elements of URL:

```
          https: // www.example.com / to / resource / home.html
          |-----| |-------------------------| -----------------------------------------------|
  Type of server or protocol     Domain          Path
```

1. Type of Server or Protocol: The scheme or protocol indicates how the web browser should access the resource. Common protocols are:
   http, https, ftp:
2. Domain: The domain is the human-readable name that corresponds to a specific IP address. It identifies the location of the resource on the internet.
   For example, in the URL https://www.example.com, the domain is www.example.com.
3. Path: The path indicates the specific location or page within the website. It comes after the domain and is separated by slashes (/).
   For example, in the URL https://www.example.com/path/to/resource/home.html, the path is /path/to/resource/home.html.

Newsgroup:

A newsgroup is a discussion forum or an online platform where people can participate in discussions, share information, and exchange ideas on specific topics.

Protocol:

A set of rules that governs the working of are called protocol.

HTTP (Hypertext Transfer Protocol) and HTTPS (Hypertext Transfer Protocol Secure) are protocols used for transmitting data over the web.

HTTP: It is always works in combination with WWW. It is responsible for accessing webpages on internet.

HTTPS: it is another version of HTTP which is more secure. It provides security of information while transferring over internet by using SSL.

Some common protocols are:

POP – Post Office Protocol

SMTP – Simple Mail Transfer Protocol

IMAP – Internet Message Access Protocol

TCP/IP – Transmission Control Protocol/ Internet Protocol

FTP – File Transfer Protocol

VoIP – Voice over Internet Protocol

NOTES

Net surfing: Exploring web (Visiting websites and web pages) by clicking on hyperlinks is known as Net surfing.

Uploading: Copy Data from our PC to Server or Internet is known as uploading.

**Downloading**: Copy data from Internet to our PC is known as downloading.

Search Engine: A 'Search Engine' is a software system (website) that is designed to search for information on the -World Wide Web (Internet). E.g. Google, Yahoo, Ask, Bing, AltaVista etc.

How to Search Information?

To search particular information:

i) Open web browser

ii) Type URL of search engine. E.g. www.google.co.in

iii) Home page of search engine will be displayed.

iv) Type the information (or keywords) to be searched and click on search button.

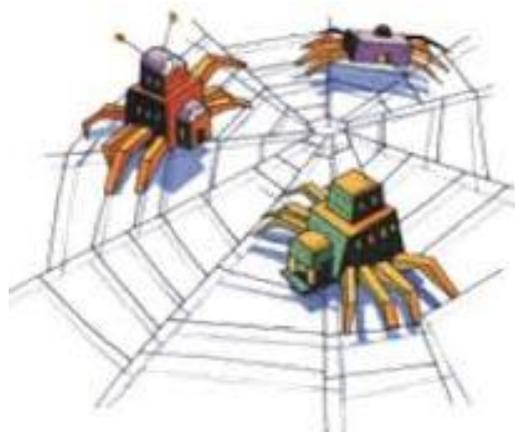v) Search engine will display a list of links to the webpages that can contain the desired information

How search engine works?
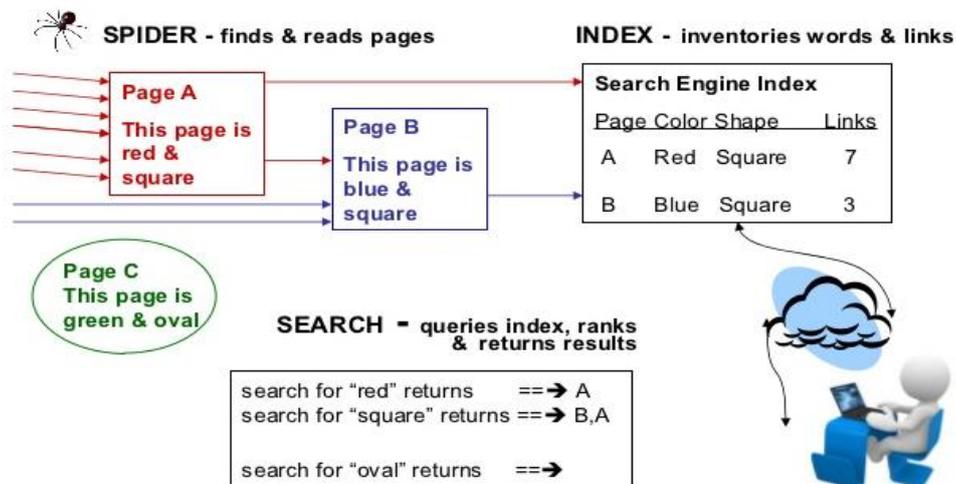
A search engine works with the help of three elements:

1. **Spider or WebCrawler or bots or agent**:
   This program crawl the web regularly and collect information about webpages and web addresses and send it to indexing software

2. **Indexing software**:

This program collects information from Spider or WebCrawler. Extract information (such as keywords, URL) from webpages and store them in server database.
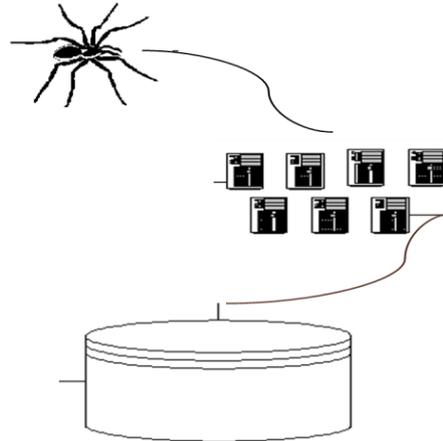
3. **Search Algorithm**:

It is a programming technique that will be applied when user perform the search operation. When user enters keywords and information to be search, search algorithm searches these keywords from server database and display matching links of web address.
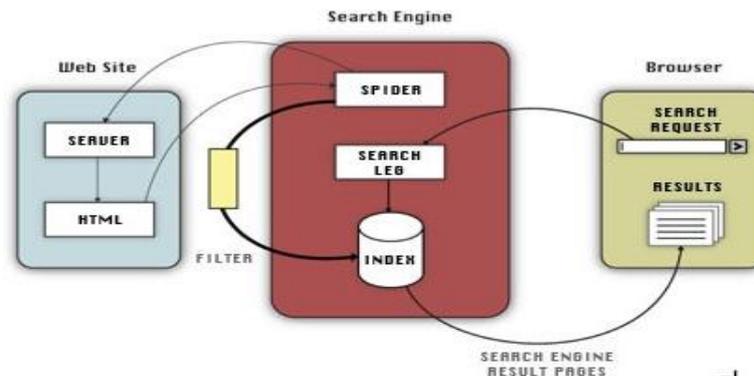
Write some searching tips.

To effectively search the desired information some searching tips are:

1. Don't ask questions. Means enter only keywords.
2. Use quotes to search the exact information.
3. Use wild card * for pattern matching.
4. Lowercase words are not case sensitive but uppercases are case sensitive.

E-mail:

It stands for Electronic mail. It is the most widely used service of internet. It is used to send written message to any individual in any part of the world.

E-mail Server – are the computer that manages the e-mail. Some e-mail servers are – Yahho.com, Gmail.com, Rediff.com, Hotmail.com

Structure of Email Address:

E-mail address has two parts:

    a. User Name

    b. Domain Name or host name or email server name

        E-mail Address: username@domainname

These two parts are separated by symbol "@".

e.g. rahul_kaushik@gmail.com Here User name is: **Rahul_kaushik** and Domain name is: **gmail.com**

Type of Email account:

There are two types of email account:

1. **Provided by ISP:** These are the paid account created on the ISP's server.
2. **Web based:** These are the email account that we can make free of cost on the websites that provide email facility such as www.gmail.com, www.yahoo.com.

Structure of Email Message:
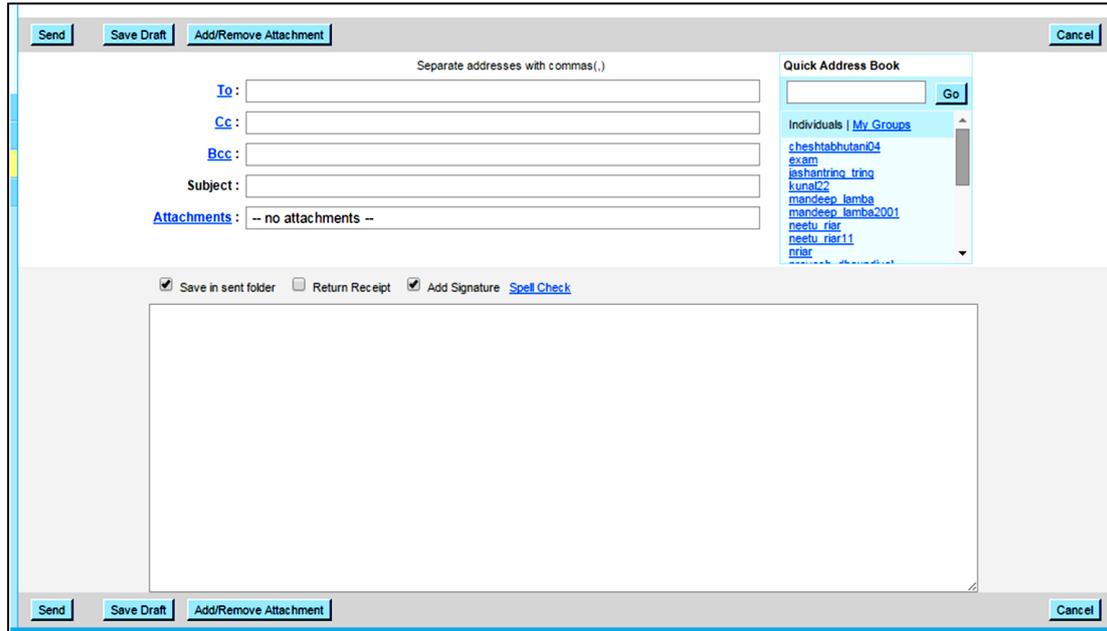
E-mail message can have following components:

From: It contains the email address and name of the sender.

To: It contains the email address of recipients

Cc: It contains the email address of other recipients to whom we want to send the same message.

BCc: It also contains the email address of other recipients to whom we want to send the same message. But this email address is not visible to other recipients.

Subject: It contains short title about the content of message.

Body: It contains the actual message to be sent.

Attachment: It is used to send any document or image along with the message.

Date: It is the date on which the message was sent from sender's computer.

Message-ID: It is the unique id that is used to track the message. It is not visible to us. It is used by internal mail program only.

Formats of Email Message:

There are two formats of email-message:

Plain Text Format	Rich Text Format
1. Can be read by anyone 2. We cannot do formatting such as font size, style, font color etc. 3. We cannot insert graphics. 4. Extension is .txt	1. Cannot be read by every e-mail program. 2. We can do formatting such as font size, style, font color etc. 3. We can insert graphics such as smileys. 4. Extension is .rtf

Protocol Used for E-mail:

IMAP (Internet Message Access Protocol)

POP (Post Office Protocol)

SMTP (Simple Mail Transfer Protocol)
HTTP (HyperText Transfer Protocol)

Emoticons: These are the graphics symbols used in email messages and chatting. These symbols are used to convey facial expressions to the recipients.

Web Services:

Working with FTP:
- ➔ FTP stands for File Transfer Protocol
- ➔ It is commonly used protocol to transfer data or files on internet.
- ➔ Some examples of Server or Client programs are: FileZilla, Core FTP, gFTP ect.
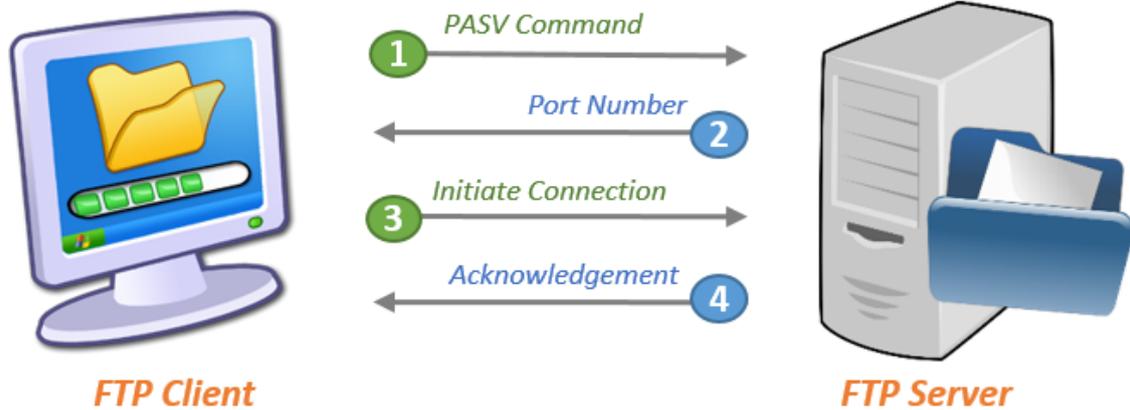
In FTP there are two computers:

1. **FTP Server:**
   It is a computer that runs FTP server software which listens connection request from FTP client.
2. **FTP Client:**
   It is a computer that runs FTP client software which initiate connection to server. Once connected, user can upload or download the files on server. He can also delete or rename a file on the server.

Anonymous or Guest:
These are the user that uses the FTP server without making any account on the server.

CHAT: Online textual conversation between two participants is known as Chatting.
Type of Chat:
Commonly used types of chat are:

1. **IM (Instant Messaging)**: It is real time text base communication between two users using messaging softwares. Some Instant messaging softwares are Yahoo Messenger, RediffBol, AOL, Whatsapp etc.
2. **ICQ (I Seek You)**: This type of chat uses ICQ software. A unique ICQ Number is generated by ICQ software.
3. **IRC (Internet Relay Chat):** It uses IRC Client program. To chat with any person we have to connect to IRC server using IRC client program. This type of Chat provides facility to join Chat Rooms where we can chat with the person who already joined the Chat room.
4. **Web Based Chat:** In this type of chat we have to login onto specific websites instead of any messaging software. E.g. Yahoo Chat.

Video Conferencing-
"Video Conferencing is its most basic form is the transmission of images(video) and speech (audio) back and forth between two or more physically separate locations"

Video Conferencing components

Primary Requirements:
- ➢ Cameras
- ➢ Video displays
- ➢ Microphones
- ➢ Speakers

The supporting system and the Network connections

Why Video conference?
- ➢ Save money
- ➢ Save time
- ➢ Built relationship
- ➢ Communicate face to face where it would otherwise be impossible
- ➢ Collaborate

Uses of Video Conferencing
- ➢ Business
- ➢ Distance Learning
- ➢ Telecommunication with client
- ➢ Legal Environment
- ➢ Telemedicine
- ➢ Media

What is E-Learning?
Learning takes place in an electronically simulated environment also known as Web-based or internet based learning

Advantages of E-Learning
- ➢ Less Expensive
- ➢ Self paced
- ➢ E-Learning courses move faster
- ➢ Flexibility (any location & any time)
- ➢ Visual modes like graphics, animation, video makes learning more effective.
- ➢ E-Learning sessions can be easily updated
- ➢ Can manage a large number of students easily.

What is E-Banking?
It is a way of performing bank transactions and other bank services using Internet
- ➢ PC Banking
- ➢ Internet or Online Banking
- ➢ Mobile Banking

Advantages of E-Banking
- ➢ It is simple to open and use a banking account
- ➢ Internet banking is cheaper (building charges, salaried employees)
- ➢ It reduce the time of waiting in the bank queue.
- ➢ The personal bank account can be accessed any time day or night.
- ➢ World Wide connectivity to the websites of bank.
- ➢ It is easier to keep a regular check on the account balance.

What is E-Shopping?
The process of shopping done over Internet. It is also termed as Online Shopping.
Advantages of E-Shopping
- ➢ Convenience
- ➢ Information and reviews
- ➢ Price & Selection
- ➢ Infinite variety of products
- ➢ There is no pressure of selling skills of salesmen.

Disadvantages of E-Shopping
- ➢ Doesn't permit customer to touch the product before purchasing it
- ➢ Doesn't allow customer to take the product home the same day.
- ➢ People afraid to disclose their personal details such as user name, credit card number etc.
- ➢ Product can be different than the product displaying in the picture

Threats and Security Concerns
Threats
- ➢ Hackers can gain access to sensitive data such as Credit Card details, user-id and password.
- ➢ Virus can corrupt the system.
- ➢ Unwanted ads suggesting what to buy.
- ➢ Gaining access to location details.

Security Concerns
- ➢ **Tricking the Shopper:** This could involve deceptive practices to mislead or manipulate shoppers, potentially leading to fraudulent transactions or unauthorized access to sensitive information. Engaging in such activities is unethical and can result in legal consequences.
- ➢ **Snooping the Shopper's Computer:** Unauthorized access to someone's computer, whether for personal or financial gain, is a violation of privacy and is illegal. It can lead to the theft of sensitive information and compromise the individual's security.
- ➢ **Sniffing the Network:** Network sniffing involves intercepting and analyzing network traffic without permission. This is a form of cyber eavesdropping and is typically used for malicious purposes. Unauthorized network sniffing is against the law.
- ➢ **Guessing Password:** Attempting to access someone's account by guessing their password without permission is a form of unauthorized access and is considered hacking. This is both unethical and illegal.
- ➢ **Phishing:** Phishing is a deceptive practice where attackers try to trick individuals into providing sensitive information such as usernames, passwords, or credit card details by posing as a trustworthy entity. Engaging in phishing activities is a criminal offense.

What is E-Reservation?
Making reservations of ticket or hotel rooms using Internet.
Benefits of E-Reservation
- ➢ Safety
- ➢ Ease
- ➢ Available anywhere
- ➢ Fast

Social Networking
Grouping of individuals using social media sites where they can interact with their friends, family members to share their interests, pictures, videos.
Some Social Networking sites are:
- ➢ Facebook.com
- ➢ Twitter.com
- ➢ Linkedin.com

Merits of Social Networking
- **Easier to connect with people:** Social networking platforms break down geographical barriers, allowing individuals to connect with people from around the world.
- **Easy to hold discussions and collect opinions:** With social networking, conducting discussion and collect opinions or views has become easier.
- **Interactive involvement:** Social networking provides interactive involvement with other people.
- **Bring More Awareness:** Through social networking we can get in touch with the events happening around us.

Demerits of Social Networking
- Misuse the data/information posted by innocent users**.**
- Credibility of information.
- Fake profiles
- Bullying and trolling
- Irresponsible behaviour

Ethics in Social Networking:
- Right Perspective – Carefully upload content
- Utilitarian Perspective – keep away from indulging in illegal activities
- Fairness perspective – Treat everyone equally and do not discriminate
- Common Good perspective – Use social networking only for betterment of society.

Mobile Technologies:

SMS (Short Message Service):
SMS is a text messaging service that allows the exchange of short text messages between mobile devices. It is a widely used communication method and is a fundamental feature of mobile phones.

MMS (Multimedia Messaging Service):
MMS is an extension of SMS that allows the sending of multimedia content, including pictures, videos, audio files, and contact cards, in addition to text. It enables a more versatile form of communication compared to SMS.

3G (Third Generation):
3G is a mobile communication standard that represents the third generation of wireless technology. It provides faster data transfer rates compared to its predecessor, 2G (Second Generation), enabling mobile internet access, video calling, and multimedia content streaming.

4G (Fourth Generation):
4G is the fourth generation of mobile network technology, designed to offer faster data transfer speeds, lower latency, and improved network capacity compared to 3G. It supports advanced services such as high-definition video streaming and online gaming.

5G (Fifth Generation):
5G is the latest generation of mobile network technology, designed to provide significantly higher data transfer speeds, ultra-low latency, and increased device connectivity. It aims to support emerging technologies like the Internet of Things (IoT), augmented reality (AR), and virtual reality (VR).

NOTES

Static Vs Dynamic Webpage:

Static Webpage or websites appear or display the same content for every user that accesses them and only change when a developer modifies the source files. A static webpage remains the same or fixed, in terms of the content it displays.

A **Dynamic Webpage** is the opposite, its content changes according to the location of the user, or based on actions a user has made on the page before.

DHTML (Dynamic HTML)

DHTML is a combination of HTML, CSS, JavaScript and DOM (Document Object Model). DHTML technologies are utilized to create interactive and dynamic web pages.

Utility of Dynamic Websites

The utility of dynamic websites are as follows:

- Dynamic websites allow easy content updates.
- They tailor content based on user preferences.
- They enable feedback forms, comment sections, and social media integration.
- They can fetch and display real-time data from databases or APIs enabling live updates like news feeds, stock market information, weather updates, etc.
- They support online transactions and inventory management.
- They handle large amounts of content and user traffic.
- They streamline processes and save time.

Some features of Dynamic Websites

- Some features of dynamic websites are as follows:
- User registration and authentication can be done.
- Content management system (CMS) provides for easy content updates.
- Search functionality to find specific content.
- Database integration for dynamic content generation.
- Interactive forms for user engagement.
- E-commerce capabilities for online transactions.
- Social media integration for sharing and interaction.
- Personalization based on user preferences.
- Dynamic content delivery for customized user experiences.
- Analytics and tracking to gather data for analysis and optimization.

What do you understand by Stylesheets? How are these useful?

A style sheet is a file containing formatting guidelines that define the overall look of a document.

Style sheets are useful in the following ways:

- It helps to separate structure and presentation. The HTML file can include structure tags and style sheet takes care of the presentation of content.
- Web pages download much faster.
- Developers have to type less code, and the web pages are shorter and neater.
- The look of the site is kept consistent throughout all the pages that work off the same style sheet.
- Updating design and general site maintenance are made much easier.
- Errors caused by editing multiple HTML pages occur less often.

What is CSS style rule? How do you define it?

A CSS rule is a single statement in a style sheet that identifies what should be styled (the selector) and how those styles should be applied (the declaration).

We define a rule by writing the selector tag without angle brackets. The properties and their values are written in the following syntax:

$$selector \{ propertyname : value ; propertyname : value ; ...\}$$

For example, if we want <H3 tag to have font face Arial and red color then we define the style rule as follows:

$$h3 \{ font.family : Arial ; color : red ; \}$$

What is CSS?

- **CSS** stands for **C**ascading **S**tyle **S**heets
- CSS describes **how HTML elements are to be displayed on screen, paper, or in other media**
- CSS **saves a lot of work**. It can control the layout of multiple web pages all at once
- External stylesheets are stored in **CSS files**

What can I do with CSS?

- CSS is a style language that defines layout of HTML documents. For example, CSS covers fonts, colours, margins, lines, height, width, background images, advanced positions, and many other things. Just wait and see!
- HTML can be used to add layout to websites. But CSS offers more options and is more accurate and sophisticated. CSS is supported by all browsers today.
- After only a few lessons of this tutorial you will be able to make your own style sheets using CSS to give your website a new great look.

How to use CSS?

A CSS rule-set consists of a selector and a declaration block:

1. The selector points to the HTML element you want to style.
2. The declaration block contains one or more declarations separated by semicolons.
3. Each declaration includes a CSS property name and a value, separated by a colon.
4. A CSS declaration always ends with a semicolon, and declaration blocks are surrounded by curly braces.

CSS can be used

1) Internal CSS - Inside HTML file by using <STYLE> </STYLE> tag and
Syntax:

Syntax to use Internal CSS

```
<STYLE type="text/css">
        Tagname        {
                                Property: value;
                                Property: value
                        }
</STYLE>
```

2) External CSS - Creating external CSS file by using saving with .CSS extension
Syntax:

In CSS file:

```
Tagname        {
                        Property: value;
                        Property: value
               }
```

In HTML file

```
<link rel="stylesheet" type="text/css" href="mystyle.css">
```

3) Inline CSS – using STYLE attribute inside tag.
Syntax:
<H1 STYLE= "color : red ; font-family : arial "> Welcome to CSS <H1>

CSS Text Properties

Text-align	: left | right | center | justify
Text-decoration	: none | underline | overline | line-through|
Text-transform	: uppercase | lowercase | capitalize
Text-indent	: n px (n is any integer value)
Letter-spacing	: n px (n is any integer value)
Word-spacing	: n px (n is any integer value)

CSS Font Properties

Font-family	: *fontname*
Font-style	: normal | italic | oblique
Font-weight	: normal | bold
Font-size	: *x* pt
Font-variant	: normal | small-caps

CSS Display Property

Display	: inline | block | none

CSS Background Property

Background-color	: colorname
Background-image	: url(path) e.g. → Background-image : url("c:\\abc\\mypic.jpg")
Background-repeat	: repeat-x | repeat-y |no-repeat
Background-position	: left | right | center top | center | bottom
Background-attachment	: fixed | none

CSS Border Property

Border-color	: colorname	
Border	: n px	(n is any integer value)
Border-style	: none | dotted | solid |dashed | double | groove | ridge | inset | outset	
Border-radius	: n px	(n is any integer value)
Border-width	: n px	(n is any integer value)

CSS Margin Property (*for outside space of content*)

Margin-left	: n px	(n is any integer value)
Margin-right	: n px	(n is any integer value)
Margin-top	: n px	(n is any integer value)
Margin-bottom	: n px	(n is any integer value)

CSS Padding Property (*for providing space between content and border*)

Padding-left	: n px	(n is any integer value)
Padding -right	: n px	(n is any integer value)
Padding -top	: n px	(n is any integer value)
Padding -bottom	: n px	(n is any integer value)

CSS List Property

List-style-type	: circle | square | upper-roman | lower-roman |upper-alpha | lower-alpha
List-style-position	: inside | outside
List-style-image	: url(path) e.g. → Background-ima List-style-image: url("c:\\abc\mypic.jpg")

Grouping of Elements using Class Attribute:

In CSS, we can identify specific elements and group them according to our requirements. This feature helps us in applying element-specific styling i.e., applying a style to particular element and other style to other element. This is made possible using the class and id attributes. These are also called CSS Selectors.

Identification of elements is done with class and id properties.

Identification and grouping of elements is useful when we want to divide our web page into different sections or sub sections.

We use class or id to find or select HTML elements to apply the required styles.

The advantage of using selectors is that we can present the same element differently depending on its class or id.

Identification using class

- We can find elements using a class name.
- We can use the same class on multiple elements.
- We can also use multiple classes on single element.
- In CSS, a class name is preceded by a period (.)

An example would make you understand better,

```html
<html>
      <head>
            <style type="text/css">
                  p.red   {
                              color: red;
                        }
                  p.blue  {
                              color: blue;
                        }
                  p.green{
                              color: green;
                        }
            </style>
      </head>
      <body>
            <p class="red"> The Color is red. Applied class name is also Red. </p>
            <p class="blue"> The Color is blue. Applied class name is also Blue. </p>
            <p class="green"> The Color is Green. Applied class name is also Green. </p>
      </body>
</html>
```

As you can see from the above example, we have applied different styles for different paragraphs using the attribute "class".

The output of the above program would be,

The Color is red. Applied class name is also Red.

The Color is blue. Applied class name is also Blue.

The Color is Green. Applied class name is also Green.

NOTES

E-Commerce: It stands for Electronic Commerce. It refers to the occurrence of commerce activities such as selling/purchasing goods using Internet.

Cyber ethics in e-commerce: Cyber ethics in E-commerce state that we should stick to ethics while doing e-commerce. All the stakeholders must ensure provide correct information to each other pertaining to the transaction taking place. We should noy cheat each other in any form.

Privacy:

Privacy is the protection of personal information given online.

The privacy of the users must be respected by ensuring that data collected is not sold to irresponsible parties. The merchant should also say clearly in terms and conditions about how the data will be used.

In e-commerce context, privacy of data is related to a company's policies on the use of user data. An e-commerce company must clearly state how it intends to use the data collected from the customer and whether the customer can restrict the use of personal information.

Consumer Consent plays a vital role in implementing the privacy of consumer data. Consumer consent decides what information can and cannot be used. The consent also relates to whether the given information can be further exploited.

How to safeguard user's privacy? i.e. Responsibility of e-commerce merchant to ensure before getting user's consent about his/her details' usage

Before getting user's consent about his/her details' usage, the e-commerce merchant must ensure the following:

- The merchant must clearly state about how the user data will be used, in the terms and conditions of its site.
- The merchant must ensure that the user has gone through the terms and conditions given on its site prior to making any transactions.
- The merchant must assure the user about data safety by implementing proper data safety and security measures such as https protocol and other security mechanism so that users' data is safe from hackers too.

What is online fraud?

Fraud committed using the Internet is called Online fraud. Online fraud may occur in many forms such as :

- Non-delivered goods
- Non-existent companies
- Stealing information
- Fraudulent payments

Some examples of online fraud are:

- Credit card fraud where credit card details are stolen from a user's online activities and the money is used without the user's knowledge.
- Using someone's credentials to watch an online show or movie.
- Non-delivery of goods after payment is another example. On investigation, a user may find that the company or website was fraud.

What is credit card fraud?

In credit card frauds, the credit card details of a user such as his credit card number, name, CVV, transaction pin, etc., are stolen from his/her online activities and then some payment frauds are carried out with this stolen information.

What is identity theft?

Online identity theft refers to an act of stealing someone's personal information such as name, login details etc. and then posing as that person online. Malicious activities like fraudulent posts, rumour mongering, riots fueling, fraudulent financial transactions, etc. can be carried out through identity theft.

Measures can you take to curb online frauds:

The measures that can be taken to curb online frauds are as follows:

- A monitoring official body that ensures the authenticity of e-commerce company and delivery of goods/services as promised.
- Strong security mechanism by the e-commerce site and payment gateways to prevent stealing of crucial information.
- Official guidelines and safeguards on the selling of users' data to third parties.

Secure data transmission

Secure data transmission means applying enough technical safeguards so that data travels safely to its target, without being compromised or eavesdropped.

To ensure secure data transmission, following techniques are applied:

- SSL secure data transmission — SSL (Secure Sockets Layer) is a standard security protocol which ensures data security by establishing encrypted online links between a web server and a browser.
- Data encryption — Encrypted data when sent over Internet is hard to steal and hence is safer.
- Using Safe protocols — such as for files, secure FTP protocol.

Intellectual Property & Intellectual Property Rights

Any piece of information is produced or created with a lot of efforts and it consumes a lot of time. Creative creations of mind such as patents, literary and creative arts, copyrights, trademarks etc. are known as intellectual property.

Intellectual property rights are the rights of the owner of information to decide how much information is to be exchanged, shared, or distributed. Also, it gives the owner a right to decide the price for doing so.

Patent

— A patent is the right/power of monopoly given by the government to an inventor to protect his/her invention from being used/copied for a fixed period of time.

Copyright

Copyrights are the right granted by law to the owner of a work to protect his/her intellectual property.

A copyright protects artistic and literary work. Copyright shall expire after 70 years of the last author's death. Question.

Trademark

Trademarks are distinctive **logo, phrases, words, symbols, or signs that represent any company/organisation or brand**. They distinguish services or products of one company from the others. Brands usually associate with distinctive trademarks.

Plagiarism & how to avoid plagiarism while referring to someone's else's creation

Plagiarism is stealing someone else's intellectual work, such as an idea, literary work or academic work etc., and representing it as our own work without giving credit to creator or without citing the source of information.

To avoid plagiarism while referring to someone else's creation, we must give credit whenever we use:

- Another person's idea, opinion, or theory;
- Quotations of another person's actual spoken or written words; or
- Paraphrase of another person's spoken or written words

Digital property & threats to digital properties

Digital property (or digital assets) refers to any information about us or created by us that exists in digital form, either online or on an electronic storage device.

For example, any online personal accounts such as email, personal websites and blogs, domain names registered in our name, intellectual properties etc.

The common threats to digital properties are as follows:

- Digital software penetration tools — There are many software penetration tools such as cracks and keygens which enable unauthorized users to freely access a software without actually paying for it.
- Stealing and plagiarizing codes of digital properties — Other developers may steal a software's source code and use it to build their own versions of it, and then sell it under their own company name.

How can you protect your digital properties?

The following ways to ensure protection of your digital properties:

- **Anti-Tamper Solutions** — They use a host of advanced technologies to prevent hacking, reverse-engineering or manipulating digital properties such as utility tools, software, apps, video games and so forth.
- **Legal Clauses** — There must be a transparent clause in the software's Terms of Service that prohibits the scraping of the software's source code for reuse.
- **Limit the sharing of software code** — One should share software code only with trusted individuals who are part of development team. Digital Rights Management (DRM) solution can protect a software from being scraped for source code using decompilers etc.

OSI — Open-Source Initiative.

FLOSS — Free Libre/Livre and Open-Source Software.

FSF — Free Software Foundation.

GNU — GNU is Not Unix.

GPL — General Public License.

W3C — World Wide Web Consortium.

OSS — Open-Source Software.

Open-source software

Open-source software is the software whose source code is available and which can be copied, modified, and redistributed as well. There may or may not be charges payable for open-source software.

In open source software, the source code is freely available to the customer. For example, Linux.

Free software and Open source software

Free software is the software which is free of cost, which can be copied, modified and redistributed as well and whose source code is available. No charges are payable for free software.

Open-source software, on the other hand, is the software, whose source code is available and which can be copied, modified and redistributed as well. There may or may not be charges payable for open source software.

OSS and FLOSS

OSS refers to Open-Source Software whose source code is made available to the public, allowing anyone to view, modify, and distribute the code. However, OSS does not necessarily mean that the software is completely free of charge. It only means that the source code is available for others to access and modify.

FLOSS refers to Free Libre/Livre and Open Source Software. The term FLOSS is used to refer to a software which is both free software as well as open source software. In addition to being Open Source, FLOSS also emphasises that no charges are applicable to the user for using and distributing the software.

Proprietary software and Free software

Proprietary software is the software that is neither open nor freely available. Its use is regulated and further distribution and modification is either forbidden or requires special permission by the supplier or vendor. Source code of proprietary software is normally not available. These softwares need to be purchased before they can be used.

Free software means that the software is freely accessible and can be freely used, changed, improved, copied and distributed by all who wish to do so. No payments are needed to be made for free software.

Freeware and Shareware

The term **freeware** is generally used for software, which is available free of cost and which allows copying and further distribution, but not modification and whose source code is not available. The right to use the software is limited to certain types of users for instance, for private and non-commercial purposes.

Shareware is a software which is made available with the right to redistribute copies, but it is stipulated that if one intends to use the software, often after a certain period of time then a license fee should be paid. The source code of shareware is not available and modifications to the software are not allowed.

Freeware and Free software

The term **freeware** is generally used for software, which is available free of cost and which allows copying and further distribution, but not modification and whose source code is not available. The right to use the software is limited to certain types of users for instance, for private and non-commercial purposes.

Free software means that the software is freely accessible and can be freely used, changed, improved, copied and distributed by all who wish to do so. No payments are needed to be made for free software.

Public domain software

Public-domain software is free and can be used without restrictions. It is, by its very nature, outside the scope of copyright and licensing.

Common public domain software licenses.
Some open source licenses are Creative Commons License, General Public License and Apache License.

What is GPL software license? How is it different from LGPL software license?
General Public License (GPL) grants and guarantees a wide range of rights to developers who work on open-source projects. With GPL, users can do the following:
- Copy the software as many times as needed.
- Distribute the software in any way
- Charge a fee to distribute the software after modifying it but the software should still be under GNU GPL.
- Make any type of modifications to the software

The LGPL and GPL licenses differ with one major exception. With LGPL the requirement that you have to release software extensions in open GPL has been removed.

Freedom of information
Freedom of information refers to the right to access information available on public platforms.

Digital divide — A digital divide is an economic and social inequality with regard to access to, use of, or impact of ICT.

Major factors behind digital divide
The major factors behind digital divide are:
- **Technology reach** — Technological reach is not the same all across India, especially in rural and remote areas.
- **Digital Literacy** — The rate of digital literacy is far less in rural areas as compared to urban areas. People in remote areas and rural areas are picking up with digital literacy, now.
- **Language and literacy barriers** — Limited availability of information in different languages or low literacy rates can hinder individuals from accessing and understanding relevant information.

Write any one application each of e-Governance and e-commerce.
An application of e-Governance is filing of online application forms for Aadhaar card, passport, etc.
An application of e-commerce is that we can do online shopping.

What is cryptography?
Cryptography is a technology which keeps the messages secret from unauthorized access. Sender of the information encrypts the data using a secret code and only the specified receiver can decrypt the data using the same or different secret code.
To encrypt a message, the message is passed to an algorithm that transforms the message using a key into a meaningless script called cryptogam or ciphertext. The ciphertext can be sent to the intended recipient. The recipient has a key to decrypt the ciphertext back to the original message.