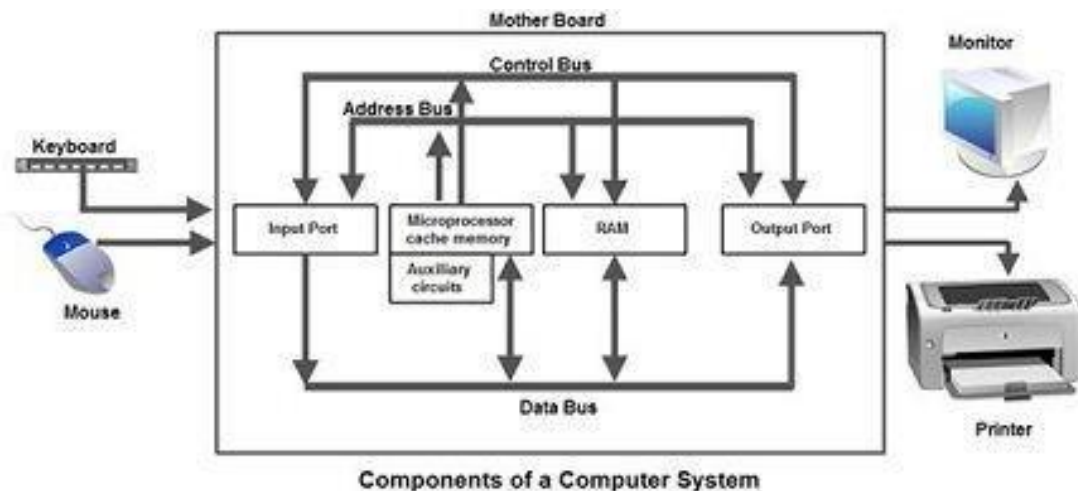<u>**BASIC COMPUTER SKILLS**</u>

<u>**UNIT I**</u>

Computer :

Computer is a group of electronic devices which is used for data processing. It accepts the user input data, process it and produce the results for processed input data.

Components of Computers:

computer contains 3 major units.

1. Input unit
2. CPU and Storage Unit
3. Output unit.

Components of a Computer System

Input Unit.

The raw data which is given into the computer for processing is called input, and the devices which are used to enter the data into computer are called input devices.

Ex:

- Keyboard
- Mouse
- Scanner
- Webcam
- Barcode, OMR

CPU:

The internal structure of a typical CPU consists of circuits which form a number of registers (the typical number is 16), an arithmetic unit for carrying out arithmetic operations, a logic unit, and a control unit.

- **Arithmetic logic unit (ALU)**
  - Arithmetic Logical Unit is used for processing data after inputting data is stored into primary unit. The major operations of Arithmetic Logical Unit are addition, subtraction, multiplication, division, logic and comparison.

- **Control unit (CU)**
  - It is like a supervisor, that checks ordaining operations or check sequence in which instructions are executed.

Memory or Storage Unit

Memory or Storage unit is used for storing Data during before and after processing. The capacity of storage is expressed in terms of Bytes.

Computer memory is divided into 2 parts.

1. Primary memory
2. Secondary memory.

Primary memory is main memory which has two parts.

RAM : Random Access Memory

ROM: Read Only Memory.

Memory

This unit retains temporarily results till further processing, For example, Random Access Memory (RAM).This memory is volatile, which means data is disappears when the power is lost.

Storage

The storage or "secondary storage" is used for retain digital data after processing for permanently. For example hard drive. The Storage is non-volatile in nature. CPU does not access directly to secondary storage memories, instead they accessed via input-output unit. The contents of secondary storage memories are first transferred to the main memory (RAM) and then CPU access it.

Output Unit.

The information which we can retrieve from the computer is called output. And the devices which are used to receive the information from computer are called output devices.

Ex:

1. Monitor
2. Printer
3. Speakers
4. Projector

Applications of Computer:

We can use your computer system for different applications by changing the software packages. Scientific research

- Business application
- Education
- Entertainment
- Banks
- Communication
- Engineering
- Medicine
- Book Publishing
- Games
- Personal
- Accounting

Applications of IECT:

IECT stands for Information Electronics and Communication Technology. The applications of IECT are as follows −

- E-governance
- Multimedia and Entertainment

E-governance

Electronic governance is application of Information Electronics and Communication Technology in running an effective governance system for people. Communication refers to sharing of information between parties like common people, government, business, etc. Almost every government sector has changed to IECT like rail reservation system, gas subsidy disbursal, etc.

Multimedia and Entertainment

Multimedia refers to combination of text, audio, video, graphics, animation, etc. It is one of applications of IECT. Multimedia is used to improve quality of presentation by incorporating information sharing, usage of graphics and animation, motion capture, etc.

Computer Hardware and Software:

A **computer** system consists **of** two major elements: **hardware** and **software**.

Computer hardware is the collection **of** all the **parts** you can physically touch.

 Computer software, on the other hand, is not something you can touch. **Software** is a set **of** instructions(programs) for a **computer** to perform specific operations.

Types of Computer memory :

Computer memory is the storage space in the computer, where data is to be processed and instructions required for processing are stored. The memory is divided into large number of small parts called cells. Each location or cell has a unique address.

Computer memory in three types −

- Cache Memory
- Primary Memory/Main Memory
- Secondary Memory

Cache memory:

Cache memory is a very high speed semiconductor memory which can speed up the CPU. It acts as a buffer between the CPU and the main memory.

The advantages of cache memory are as follows −

- Cache memory is faster than main memory.
- It consumes less access time as compared to main memory.
- It stores the program that can be executed within a short period of time.
- It stores data for temporary use.

The disadvantages of cache memory are as follows −

- Cache memory has limited capacity.
- It is very expensive.

Primary memory

Primary memory holds only those data and instructions on which the computer is currently working. It has a limited capacity and data is lost when power is switched off. These memories are not as fast as registers. The data and instruction required to be processed resides in the main memory. It is divided into two subcategories RAM and ROM.

- It is known as the main memory.
- Usually volatile memory.
- Data is lost in case power is switched off.
- It is the working memory of the computer.
- Faster than secondary memories.
- A computer cannot run without the primary memory.

Secondary memory:

This type of memory is also known as external memory or non-volatile. It is slower than the main memory. These are used for storing data/information permanently. CPU directly does not access these memories, instead they are accessed via input-output routines. The contents of secondary memories are first transferred to the main memory, and then the CPU can access it. For example, disk, CD-ROM, DVD, etc.

- These are magnetic and optical memories.
- It is known as the backup memory.
- It is a non-volatile memory.
- Data is permanently stored even if power is switched off.
- It is used for storage of data in a computer.
- Computer may run without the secondary memory.
- Slower than primary memories.

Operating System:

An Operating System (OS) is an interface between a computer user and computer hardware. An operating system is a software which performs all the basic tasks like file management, memory management, process management, handling input and output, and controlling peripheral devices such as disk drives and printers.

Some popular Operating Systems include DOS, UNIX / Linux Operating System, Windows Operating System.
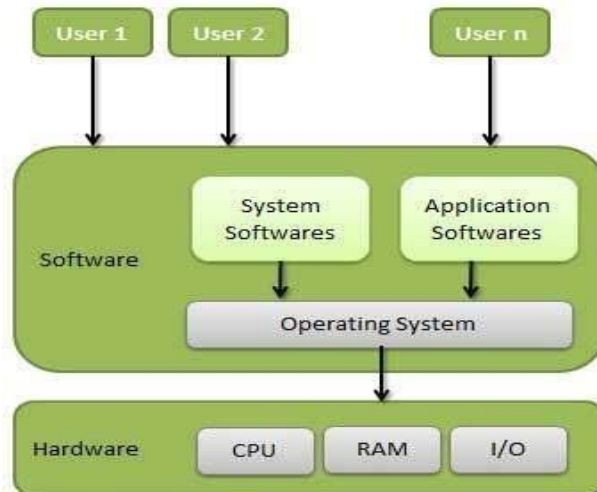
functions of an operating System.

- Memory Management
- Processor Management
- Device Management
- File Management
- Security
- Control over system performance
- Job accounting
- Error detecting aids
- Coordination between other software and users

Types of Operating system:

- Single user operating system
- Multiuser operating system
- Multi programming / tasking operating system
- Batch processing operating system.
- Network operating system
- Real-time operating system
- Distributed operating system.

Features of Windows:

Windows operating is a GUI (graphical user interface) operating system. Which has unique features.

- Start button
- Desktop/ taskbar
- Windows explorer
- Find / run programs

- Entertainment and games.
- File management
- Multi tasking
- Control panel
- Internet access
- Help

Creating folder :

- Right click the mouse button
- Select new->folder
- After folder appears give a name to save it.

Delete a folder :

When we delete a folder it deletes its inner subfolders and files and other information also so before we delete we should check whether we want to delete it or not.

To delete a folder

- Select the folder / file
- Press on delete button or select delete from mouse right button menu options
- Then the folder / file removed temporarily
- To remove it permanently after select file / folder press SHIFT + DELETE buttons.

Renaming the folder :

To change the name of the folder

- Select the folder
- Select rename from mouse right button menu
- Change the name and press enter

Creating shortcuts:

Shortcut means run the application directly from desktop. We need not to find the application where it is installed or copied.

To create shortcut

- Select shortcut from mouse right button options
- Select application or program
- Select create short cut to desktop press enter.

Opening and closing windows:

A window is dialog box or application window, it contains title bar(name and control buttons),menu bar, tool icons, buttons, textboxes etc.

To open a window.

What application window we want to open select it and press enter. Or

Click on start button select program the application window opens.

**To save the window**

Select save option from file menu and save it.

To close the window

Click on X button of window control buttons ( )

WORD PROCESSING :

A **software** for creating, storing and manipulating text documents is called **word processor**. Some common **word processors** are MS-**Word**, WordPad, WordPerfect, Google docs, etc. A **word processor** allows you to − Create, save and edit documents. Format text properties like font, alignment, font color, background color, etc.

Microsoft Word can be used to create business documents having various graphics including pictures, charts, and diagrams. To store and reuse readymade content and formatted elements such as cover pages and sidebars. To create letters and letterheads for personal and business **purpose**.
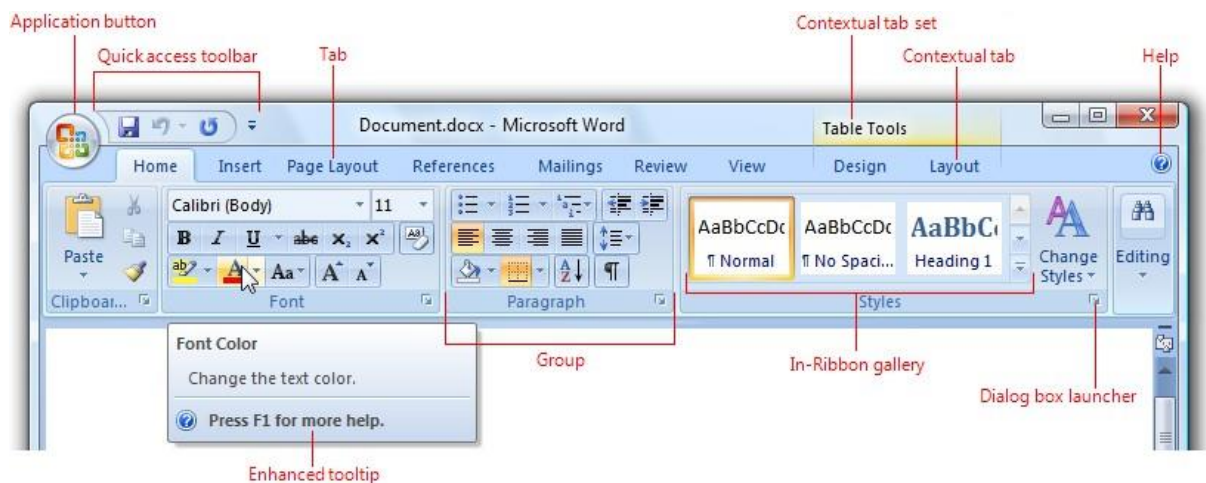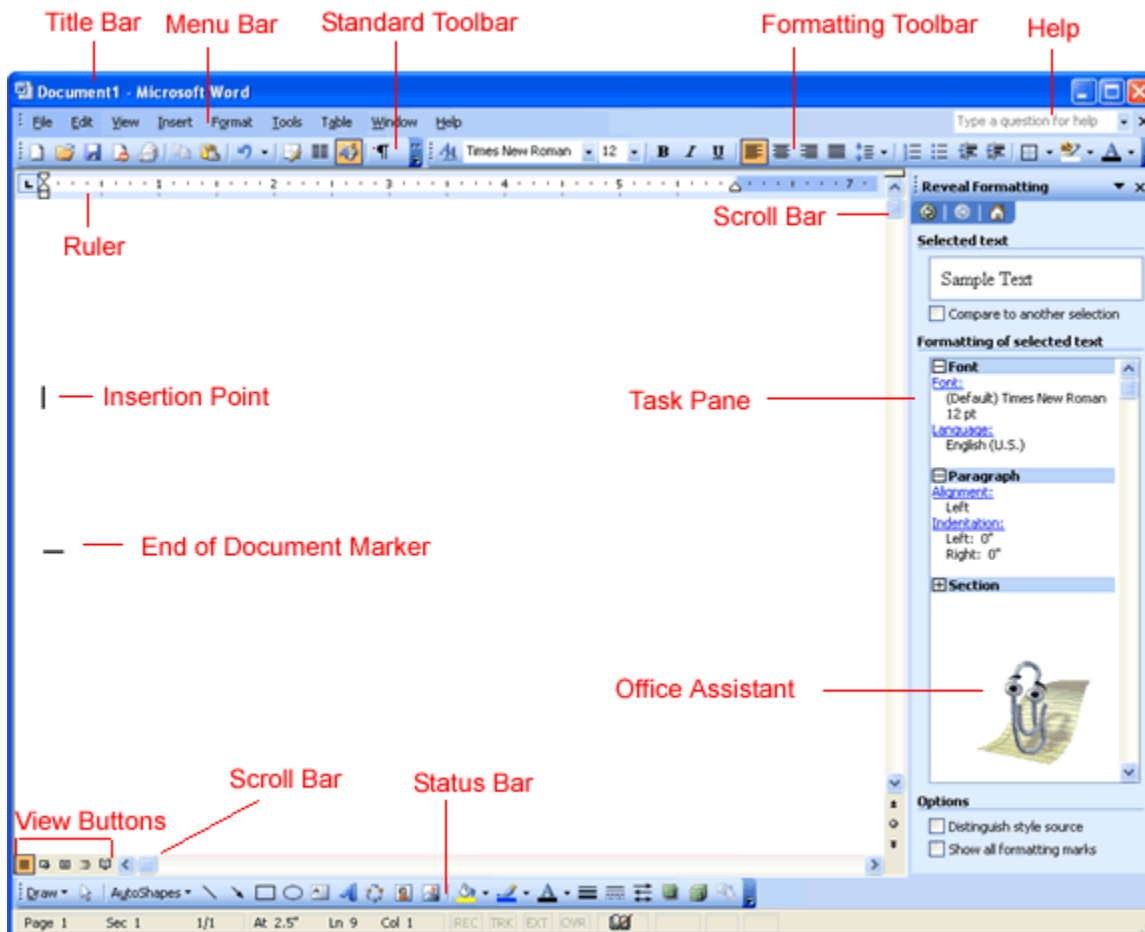
Formatting the MS Word Document.

A word document can be formatted in 3 ways.

1. Character / text formatting
2. Paragraph formatting
3. Document formatting

Character / text formatting:

We can apply the following options on selected text.

- Font size
- Font type(arial,verdana,times new roman)
- Font style(bold,italic,underline)
- Font color

- Alignment(left,center,right and justify)

Paragraph formatting:

We can apply the following options on selected paragraph.

- Bullets
- Numbering
- Outline paragraph border and shading color.
- Line spacing
- Margin indent spaces(before, after,left and right paragraph)

document formatting:

We can apply the following options on entire document.

- Page numbers
- Header and footers.
- Page border
- Water mark

Spell check and grammar check:

It is one of the advanced feature of word processing software, when we type the paragraph text on a document some times we can identify the underline red color words(spelling mistakes) and green color(grammar mistakes) words. To correct all these we do correction of spell and grammar check.

It is a special dialog box that contains two text boxes and buttons.

We can identify mistakes words on top text box, and suitable replacing words in bottom text box after choose select change button and click.

Or we can directly select the spelling mistake word by locating mouse pointer on that and right click mouse button, the substituted correct multiple words appear select any one .

Printing word document.

To print a document,

- open the document.
- Select print from file menu or CTRL + P
- Check printer is connected and switched on
- Select the pages to be print (1,3,5 or all)
- Select no of copies to be print
- Click on ok.

SPREAD SHEET.

Microsoft **Excel** is a **spreadsheet** application software program included in the Microsoft Office suite of applications. **Spreadsheets** present tables of values arranged in rows and columns that can be manipulated mathematically using both basic and complex arithmetic operations and functions.

A **spreadsheet** shows a collection **of worksheets** that combine to form a **workbook** whereas a **worksheet** is one **page** present within the **workbook .....**A **spreadsheet** can be a single **worksheet** or multiple **worksheets**.

Features of Excel spread sheet.

Excel application has many advantages / features.

- data analysis
- Sorting and filtering
- Creating / inserting charts or graphs.
- Formulas/ functions.
- Pivot tables and subtotals.

Formula/ function in excel.

**Formula** is an expression that calculates values in a cell or in a range of cells.

For example, =A2+A2+A3+A4

A **function** is a predefined formula that performs calculations using specific values in a particular order. **Excel** includes many common **functions** that can be used to quickly find the sum, average, count, maximum value, and minimum value for a range of cells.

- sum()
- average()
- min()
- max()
- if()
- count()

structure of excel sheet :

he **Excel Worksheet** consists of a grid of columns and rows. The cells within the grid represent the basic unit of storage within a **spreadsheet**, and the alphabetical column names and numbered rows form unique "addresses" **for** each cell.
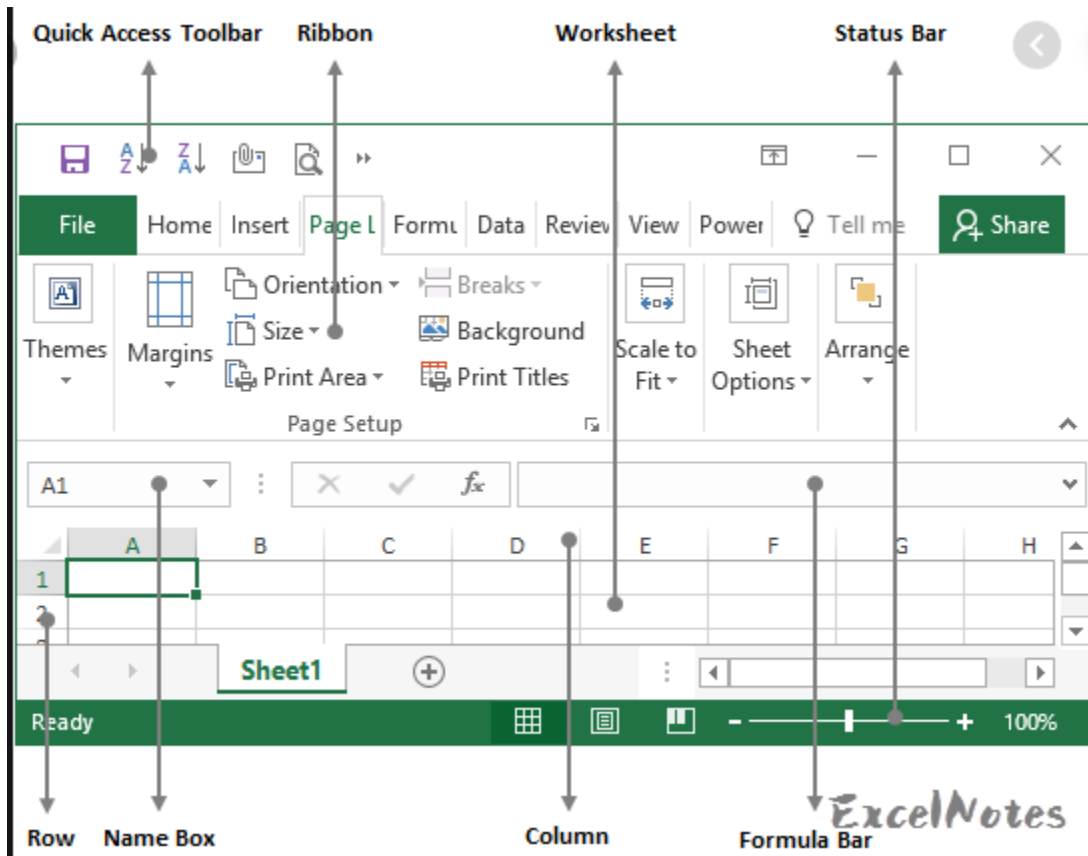
Editing and printing Excel sheet.

Editing includes

- changing the margins, formatting, layout changing ,resizing of excel sheet.
- Creating duplicate sheet by selecting the worksheet copy it paste in another.
- Finding the sheet cell name and identifying the cell

To print the excel sheet.

- Select the worksheet area (rows and columns)
- Press CTRL + P key or select print from file (home) menu tag.
- Select layout and margins with page setup.
- Click on print.

PRESENTATION.

A presentation is computer application software program used to show information in the form of slides. MS Power point is a popular presentation software of MS Office tools.

A presentation includes.

- Text/object to be inserted/entered
- Applying animation/graphics on text/object
- Selecting slide to display presentation

A **slide show** is a presentation of a series of slides with images/ text/ object on a projection screen or electronic display device,

Creating presentation:

A PowerPoint presentation can be created with the following steps.

- Start by opening a "Blank presentation" / " design templates" / "wizard" in **PowerPoint**. ...
- Select the "Title **Slide**" with **layout** option. ...
- Type in your title and subtitle. ...
- Select a background for the entire presentation. ...
- Add new **slides**. ...
- Set the transitions for your **slides**. ...
- Add some animation or graphics to the presentation with custom animation

Print your presentation

- Select power point File -> **Print**.
- For **Printer**, select the **printer** you want to **print** to.
- For Settings, select the options you want: Slides: From the drop-down, choose to **print** all slides, selected slides, or the current slide. ...
- For Copies, select how many copies you want to **print**.
- Select **Print**.

Networking:

A group of computers are connected together is called networking. We can share the data, files, application software and hardware devices in networking.

Types.

Computer networking is mainly 3 types.

1. LAN (Local Area Network) in this we connect small group of computers(50 – 100) for a lab or office.
2. WAN (Wide Area Network) in this we expand the connectivity for up to 500 or more with servers for an organization.
3. MAN(Metropolitan area Network) in this we can connect cities and big areas in networking with satellitenetworking.

Internet and its applications.

Internet is a network of computers linking many different types of computers all over the world. It is a network of networks sharing a common mechanism for addressing(identifying) computers, and a common set of communication protocols for communications between two computers on the network.

Internet has many applications, the popular applications are

- Electronic mail
- Browsing
- Research.
- Downloading files.
- Group communications
- Interactive games. ...
- Education and self-improvement. ...
- Electronic newspapers and magazines.
- Online shopping and Ecommerce
- E payments and E ticket booking
- E Banking and Bills payments

WWW :
The World Wide Web (WWW) is combination of all resources and users on the Internet that are using the Hypertext Transfer Protocol (HTTP). A broader **definition** comes from the World Wide Web : "The World Wide Web is the universe of network-accessible information, an embodiment of human knowledge."
Tim Berners-Lee invented WWW.

Web browser:

 A web browser is a software application is used to access the internet pages through www search engines. The popular web browsers are.

- Google chrome

- Internet explorer.
- Firefox.

ISP :

An **Internet Service Provider** (**ISP**) is a that provides Internet access to companies, institutions, houses and even mobile users. **ISPs** use fiber-optics, satellite, copper wire, and other forms to provide Internet access to its customers.

Troubleshooting:

Network troubleshooting is the collective measures and processes used to identify, diagnose and resolve problems and issues within a computer **network**. It is a systematic process that aims to resolve problems and restore normal **network** operations within the **network**.

- Internet troubleshooting
- Wifi troubleshooting.

Search engines:

Search engine is a service that allows Internet users to search for content via the World Wide Web (WWW).

A **search engine** is a web-based tool that enables users to locate information on the World Wide Web.

There are 4 types of search engines:

- Crawler-Based Search Engine.
- Human-Powered Directories.
- Hybrid Search Engines.
- Meta-Search Engines.

URL :

A uniform resource locator (**URL**) is the address of a resource on the Internet. A **URL** indicates the location of a resource as well as the protocol used to access it. A **URL** contains the following information: The protocol used to a access the resource. The the location of the server (whether by IP address or domain name)

Protocols:

Network / internet protocols are set of rules, standards and policies ,procedures and formats that define communication between two or more devices over a **network**.

Types of protocols.

TCP/ IP -> transmission control protocol.

FTP -> file transfer protocol

HTTP -> hyper text transfer protocol.

SMTP -> simple mail transfer protocol.

Domain name:

A domain name is unique name that identifies a website.

Domain names are used to identify one or more IP addresses. We use @ is for domain under a particular area.

Ex:

- **gov** - Government agencies
- **edu** - Educational institutions
- **org** - Organizations (nonprofit)
- **mil** – Military
- **com** - commercial business
- **net** - Network organizations

Email :

- **Email**, short for "**electronic mail**," is one of the most widely used **features** of the Internet, along with the web. It allows you to send and receive messages to and from anyone with an **email** address, anywhere in the world.
- **e-mail** is a message that may contain text, files, images, or other attachments sent through a network to a specified individual or group of individuals.
- **Email** uses multiple protocols within the TCP/IP suite.

Advantages of email:

- **Email** is a free tool.
- **Email** is very fast
- **Email** is simple. ...
- **Email** allows for easy referencing. ...
- **Email** is accessible from anywhere – as long as you have an internet connection. ...
- **Email** allows for mass sending of messages.

Disadvantages of email:

- **Spam mails**
- **virus**
- **hacking**
- **time consuming to respond for bulk mails**

sending and receiving mails:

A user can send or receive mails from any computer to other computer through out the world with the help of internet and SMTP.

To send an email. a user should have an email id address.

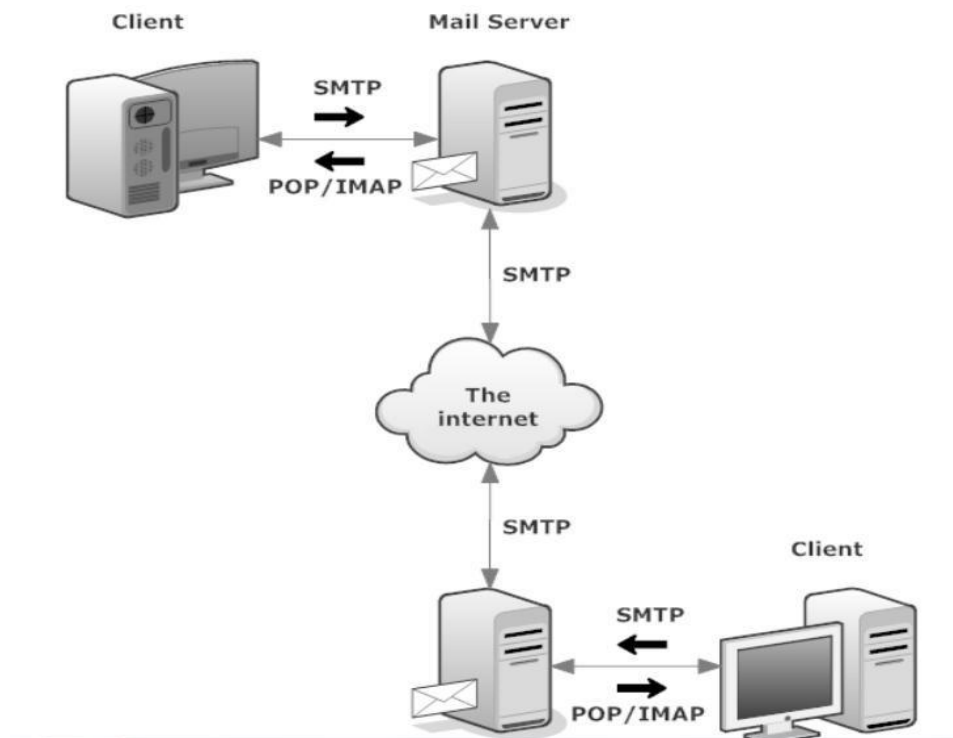After login to ID, select compose mail.

Give the details of recipient mail id address, and other ids where the same mail we can send to many people.

Type the mail text and we can also attach files/images/ videos.

Click on send . mail information will be delivered with in seconds.

After receiving mail. Login to user mail id.

Check inbox messages and click on .

Important Questions:

1. what is computer ? explain components of computer?
2. What are the applications of computer?
3. Explain about different types of memories?
4. What is hardware / software?
5. Write about input output devices?
6. What is operating system explain functions?
7. Explain how to create delete rename the folders?
8. What is word processing?
9. Explain how to format a word document.
10. What is spell check
11. Explain how to print a document.
12. What is spread sheet?
13. Explain formula and function in excel?
14. What is presentation and slide show?
15. Explain how to create presentations?
16. What is internet? And its applications?
17. What are the types of networking?
18. www?
19. What is email advantages and disadvantages?
20. What is domain and IP address?