SYLLABUS
Class – B.Com. III Year

Subject – Basic Computer Information Technology

Unit I	Basic Organization of Computer System : Block diagram & Functions (Central Processing Unit, Input/ Output Unit, Storage Unit); Characteristics; Capabilities & Limitations. Types of Computing Devices: Desktop, Laptop & Notebook Smart-Phone, Tablet PC, Server, Workstation & their Characteristics. Primary Memory & Their Types: RAM, ROM, PROM, EPROM, EEPROM,; Cache Memory. PERIPHERAL. DEVICES Input Devices : Keyboard, Mouse, Trackball, Joystick, Digitizer or Graphic tablet, Scanners, Digital Camera, Web Camera, MICR, OCR, OMR, Bar-Code Reader, Voice Recognition device, Light pen & Touch Screen. Output Devices: Display Devices (CRT, TFT, LCD, LED, Multimedia Projectors); Video Standard : VGA, SVGA, XGA etc. Impact Printers (Daisy Wheel , Dot Matrix & line Printer); Non impact printer (Inkjet, laser, Thermal); STORAGE DEVICES magnetic Tape, Cartridge, Data Drives, Hard Disk Drives (Internal & External), Floppy Disks, CO, VCD, CD-RW, Zip Drive, DVD, DVD-RW, USB Flash Drive, Blue Ray Disc & Memory cards.
Unit II	OPERATING SYSTEM (OS) DOS Basics : FAT, File & Directory Structure and naming rules, Booting process, DOS system flies: Internal & External DOS commands. Windows Basics (only elementary ides): Windows 7 & 8: Desktop, Control Panel; saving, renaming, moving, copying and searching files & folders, restoring from recycle Bin. Creating shortcut, Establishing Network Connections.
Unit III	MS Word • Text Editing and formatting using Word 2007 & onwards versions: Creating documents using Template; Saving Word file in various file formats; Previewing documents, Printing document to file/page; Protecting document; Editing of selected text, Inserting, Deleting and Moving text. Formatting documents: page Layout, Paragraph format, Aligning text and Paragraph, borders and Shading, Headers and Footers.
Unit IV	MS Power Point & MS Excel • Creating presentation using slide master and template in various themes & variants. • Working with slides New slide, move, copy, delete, duplicate, slide layouts, presentation views. • Format menu: Font, paragraph, drawing & Editing. • Printing presentation: Print slides, notes, handouts and outlines. • Saving presentation in different file formats. • Workbook & Worksheet Fundamentals: Concept of Row, Column & Cell; Creating a new workbook through blank &template. • Working with worksheet: Entering data into worksheet (General , Number, Currency, Date, Time, Text, Accounting, etc); Renaming, Copying, Inserting, deleting & protecting worksheet. • Working with Row & Column (Inserting, deleting, Pasting, Resizing & Hiding), Cell & Cell formatting, Concept of range.
Unit V	Internet and Cyber Security Internet: World wide Web, Dial up connectivity, leased line, VSAT, Broad Band, WI-Fl, Domain name, Web Browser (internet Explorer, Firefox, Google Chrome, Opera, UC Browser, etc.) Search Engine (Google, Bing, Ask, etc); Website: Static & Dynamic; Difference between Website & Portal. • E-mail: Account opening. Sending & Receiving Mails, Managing Contacts & Folders. • E-mail, Internet & Social Networking Ethics. • Types of viruses & antivirus. • Computer security issues & its protection through firewall & antivirus • Making secured online transactions.

COMPUTER

Computer System is an electronic data processing device which does the following:
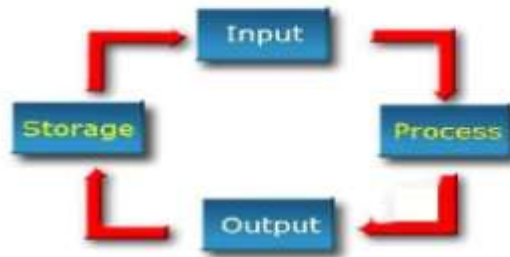first, Accepts **data**such as raw facts, figures, and symbol
then, Processes data into **information**(Data that is organized, meaningful, and useful)
finally, Produces and stores results.
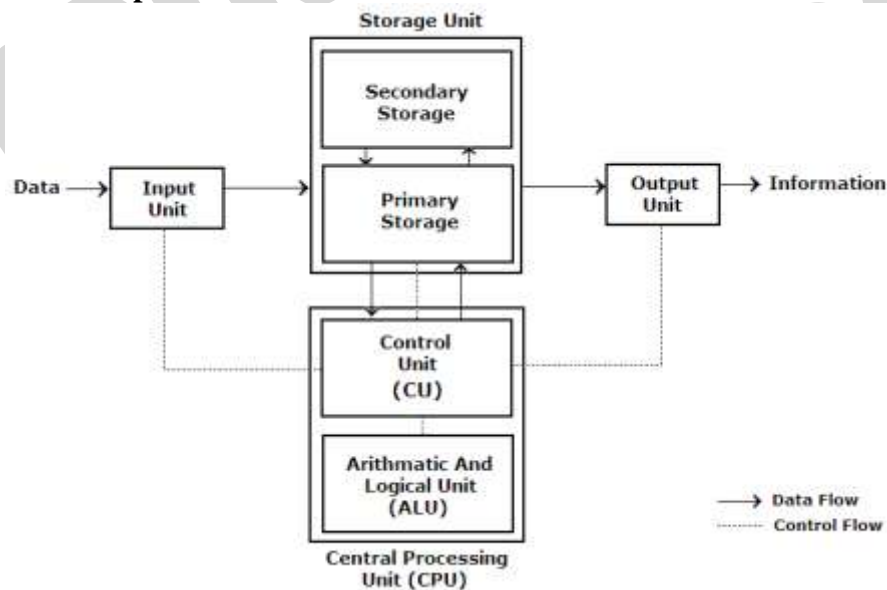**Information Processing Cycle**

The sequences of events, which make up the information processing cycle, are:
- Input
- Processing
- Output
- Storage

1. **Input**—entering data into the computer.
2. **Processing**—performing operations on the data.
3. **Storage**—saving data, programs, or output for future use.
4. **Output**—presenting the results.

Block diagram of Computer:-

1. **Input:** this is the process of entering data and programs into the computer system.

2. **Control Unit (CU):** The process of input, output, Control Unit (CU): The process of input, output, processing and storage is performed under the supervision of a unit called 'Control Unit'. It decides when to start receiving data, when to stop it, where to store data, etc. It takes care of step -by-step processing of all operations inside the computer.
3. **Memory Unit:** Computer is used to store data and instructions.
4. **Arithmetic Logic Unit (ALU):** The major operations performed by the ALU are addition, subtraction, multiplication, division, logic and comparison.
5. **Output:** This is the process of producing results from the data for getting useful information.
   The ALU and the CU of a computer system are jointly known as the central processing unit (CPU). You may call CPU as the brain of any computer system.

History Of Computers

➢ **Before the 1500s, in Europe, calculations were made with an abacus Invented around 500BC, available in many cultures (China, Mesopotamia, Japan, Greece, Rome, etc.)**

➢ **In 1642, Blaise Pascal (French mathematician, physicist, philosopher) invented a mechanical calculator called the Pascaline**

➢ **In 1671, Gottfried von Leibniz (German mathematician, philosopher) extended the Pascaline to do multiplications, divisions, square roots: the Stepped Reckoner None of these machines had memory, and they required human intervention at each step.**

   In 1822 Charles Babbage (English mathematician, philosopher), sometimes called the "father of computing" built the Difference Engine

➢ **Machine designed to automate the computation (tabulation) of polynomial functions (which are known to be good approximations of many useful functions)**
   – **Based on the "method of finite difference"**
   – **Implements some storage**
➢ **In 1833 Babbage designed the Analytical Engine, but he died before he could build it It was built after his death, powered by steam**

Computer Generations

Generation in computer terminology is a change in technology a computer is/was being used. Initially, the generation term was used to distinguish between varying hardware technologies. But nowadays, generation includes both hardware and software, which together make up an entire computer system.

There are totally five computer generations known till date.

S.N.	Generation & Description
1	**First Generation** The period of first generation: 1946-1959. Vaccum tube based.
2	**Second Generation** The period of second generation: 1959-1965. Transistor based.
3	**Third Generation** The period of third generation: 1965-1971. Integrated Circuit based.
4	**Fourth Generation** The period of fourth generation: 1971-1980. VLSI microprocessor based.
5	**Fifth Generation** The period of fifth generation : 1980-onwards.ULSI microprocessor based

First Generation

The period of first generation was 1946-1959.

First generation of computer started with using vacuum tubes as the basic components for memory and circuitry for CPU(Central Processing Unit). These tubes like electric bulbs produced a lot of heat and were prone to frequent fusing of the installations, therefore, were very expensive and could be afforded only by very large organizations.

In this generation mainly batch processing operating system were used. In this generation Punched cards, Paper tape, Magnetic tape Input & Output device were used.

There were Machine code and electric wired board languages used.

The main features of First Generation are:

- Vacuum tube technology
- Unreliable
- Supported Machine language only
- Very costly
- Generate lot of heat
- Slow Input/Output device
- Huge size
- Need of A.C.
- Non portable
- Consumed lot of electricity

Some computers of this generation were:

- ENIAC
- EDVAC
- UNIVAC
- IBM-701
- IBM-650

Second Generation

The period of second generation was 1959-1965.

This generation using the transistor was cheaper, consumed less power, more compact in size, more reliable and faster than the first generation machines made of vacuum tubes. In this generation, magnetic cores were used as primary memory and magnetic tape and magnetic disks as secondary storage devices.

In this generation assembly language and high level programming language like FORTRAN, COBOL was used.

There was Batch processing and Multiprogramming Operating system used.

The main features of Second Generation are:

- Use of transistors
- Reliable as compared to First generation computers
- Smaller size as compared to First generation computers
- Generate less heat as compared to First generation computers
- Consumed less electricity as compared to First generation computers
- Faster than first generation computers
- Still very costly
- A.C. needed
- Support machine and assmebly languages

Some computer of this generation were:
- IBM 1620
- IBM 7094
- CDC 1604
- CDC 3600
- UNIVAC 1108

Third Generation

The period of third generation was 1965-1971.

The third generation of computer is marked by the use of Integrated Circuits (IC's) in place of transistors. A single I.C has many transistors, resistors and capacitors along with the associated circuitry. The I.C was invented by Jack Kilby. This development made computers smaller in size, reliable and efficient.

In this generation Remote processing, Time-sharing, Real-time, Multi-programming Operating System were used.

High level language (FORTRAN-II TO IV, COBOL, PASCAL PL/1, BASIC, ALGOL-68 etc.) were used during this generation.

The main features of Third Generation are:
- IC used
- More reliable
- Smaller size
- Generate less heat
- Faster
- Lesser maintenance
- Still costly
- A.C needed
- Consumed lesser electricity
- Support high level language

Some computer of this generation were:
- IBM-360 series
- Honeywell-6000 series
- PDP(Personal Data Processor)
- IBM-370/168
- TDC-316

Fourth Generation

The period of Fourth Generation was 1971-1980.

The fourth generation of computers is marked by the use of Very Large Scale Integrated (VLSI) circuits.VLSI circuits having about 5000 transistors and other circuit elements and their associated circuits on a single chip made it possible to have microcomputers of fourth generation. Fourth Generation computers became more powerful, compact, reliable, and affordable. As a result, it gave rise to personal computer (PC) revolution.

In this generation Time sharing, Real time, Networks, Distributed Operating System were used.

All the Higher level languages like C and C++, DBASE etc. were used in this generation.

The main features of Fourth Generation are:

- VLSI technology used
- Very cheap
- Portable and reliable
- Use of PC's
- Very small size
- Pipeline processing
- No A.C. needed
- Concept of internet was introduced
- Great developments in the fields of networks
- Computers became easily available

Some computer of this generation were:
- DEC 10
- STAR 1000
- PDP 11
- CRAY-1(Super Computer)
- CRAY-X-MP(Super Computer)

Fifth Generation
The period of Fifth Generation is 1980-till date.
In the fifth generation, the VLSI technology became ULSI (Ultra Large Scale Integration) technology, resulting in the production of microprocessor chips having ten million electronic components.
This generation is based on parallel processing hardware and AI (Artificial Intelligence) software.
AI is an emerging branch in computer science, which interprets means and method of making computers think like human beings.
All the Higher level languages like C and C++, Java, .Net etc. are used in this generation.
AI includes:
- Robotics
- Neural networks
- Game Playing
- Development of expert systems to make decisions in real life situations.
- Natural language understanding.

The main features of Fifth Generation are:
- ULSI technology
- Development of true artificial intelligence
- Development of Natural language processing
- Advancement in Parallel Processing
- Advancement in Superconductor technology
- More user friendly interfaces with multimedia features
- Availability of very powerful and compact computers at cheaper rates

Types of Computer
Some computer types of this generation are:

- Desktop
- Laptop
- NoteBook
- UltraBook
- ChromeBook

Computer can be broadly classified by their speed and computing power.

Sr. No.	Type	Specifications
1	PC (Personal Computer)	Single user computer system. Moderately powerful microprocessor.
2	WorkStation	Single user computer system. Similar to Personal Computer but have more powerful microprocessor.
3	Mini Computer	Multi-user computer system. Capable of supporting hundreds of users simulaneously.
4	Main Frame	Multi-user computer system. Capable of supporting hundreds of users simulaneously.Software technology is different from minicomputer.
5	Supercomputer	An extremely fast computer which can perform hundreds of millions of instructions per second.

PC (Personal Computer)

- A PC can be defined as a small, relatively inexpensive computer designed for an individual user.
- PCs are based on the microprocessor technology that enables manufacturers to put an entire CPU on one chip.
- Businesses use personal computers for word processing, accounting, desktop publishing, and for running spreadsheet and database management applications.
- At home, the most popular use for personal computers is for playing games and surfing the Internet.
- Although personal computers are designed as single-user systems, these systems are normally linked together to form a network.
- In terms of power, now-a-days High-end models of the Macintosh and PC offer the same computing power and graphics capability as low-end workstations by Sun Microsystems, Hewlett-Packard, and DELL.

WorkStation

- Workstation is a computer used for engineering applications (CAD/CAM), desktop publishing, software development.
- They require a moderate amount of computing power and relatively high quality graphics capabilities.
- Workstations generally come with a large, high-resolution graphics screen, large amount of RAM, inbuilt network support, and a graphical user interface.
- Most workstations also have a mass storage device such as a disk drive, but a special type of workstation, called a diskless workstation, comes without a disk drive.
- Common operating systems for workstations are UNIX and Windows NT.
- Like PC, Workstations are also single-user computers.
- workstations are typically linked together to form a local-area network, although they can also be used as stand-alone systems.

Minicomputer

- It is a midsize computer.
- A minicomputer is a multi-processing system capable of supporting from up to 250 users simultaneously.

Mainframe

- Mainframe is a very large in size and is an expensive computer capable of supporting hundreds, or even thousands, of users simultaneously.
- Mainframe executes many programs concurrently.
- Mainframes support many simultaneous programs execution.

Supercomputer

- Supercomputers are one of the fastest computers currently available.
- Supercomputers are very expensive and are employed for specialized applications that require immense amounts of mathematical calculations (number crunching).
- For example, weather forecasting , scientific simulations, (animated) graphics, fluid dynamic calculations, nuclear energy research, electronic design, and analysis of geological data (e.g. in petrochemical prospecting).
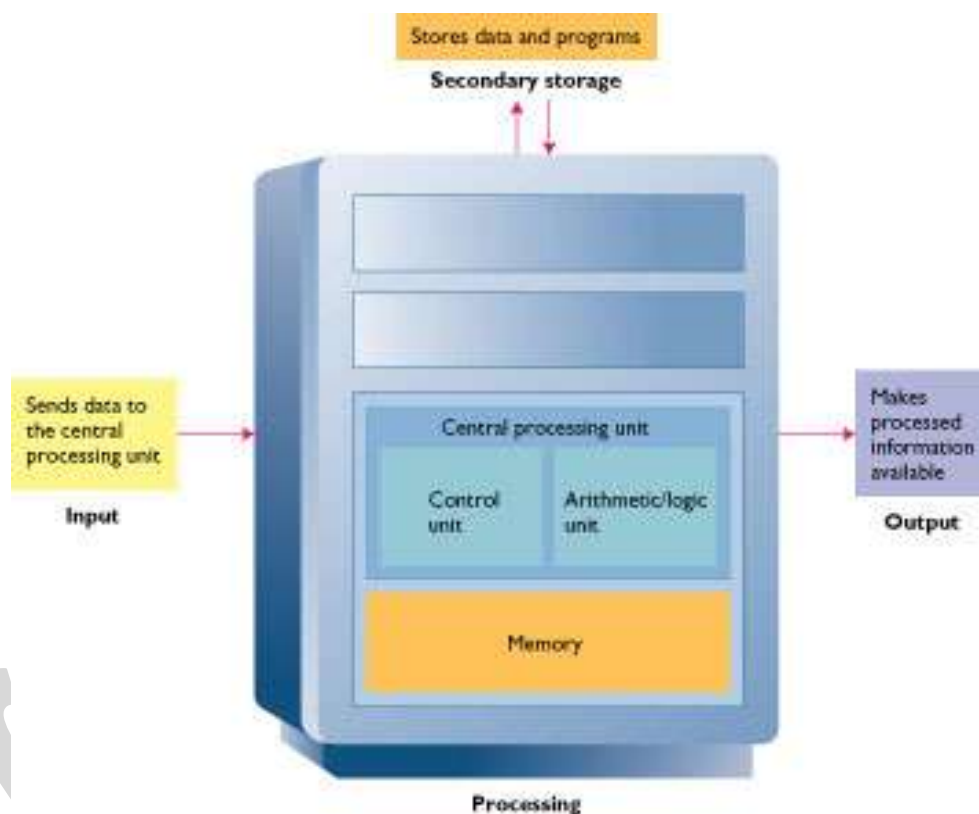
All types of computer follows a same basic logical structure and perform the following five basic operations for converting raw input data into information useful to their users

Sr. No.	Operation	Description
1	Take Input	The process of entering data and instructions into the computer system.
2	Store Data	Saving data and instructions so that they are available for processing as and when required.
3	Processing Data	Performing arithmetic , logical operations on data in order to convert them into useful information.
4	Output Information	The process of producing useful information or results for the user,such as a printed report or visual display.
5	Control the workflow	Direct the manner and sequence in which all of the above operations are performed.

Basic components of a computer system

- **Input Unit**
- **Output Unit**
- **Storage Unit**
- **Central Processing Unit (CPU)**
- **Arithmetic and Logic Unit (ALU)**
- **Control Unit**

Stores data and programs
Secondary storage

Sends data to the central processing unit
Input

Central processing unit

Control unit   Arithmetic/logic unit

Memory

Processing

Makes processed information available
Output

Input Unit
This unit contains devices with the help of which we enter data into computer. This unit makes link between user and computer.
The input devices translate the human being information into the form understandable by computer.

CPU (Central Processing Unit)
- ❖ CPU is considered as the brain of the computer.
- ❖ CPU performs all types of data processing operations.
- ❖ It stores data , intermediate results and instructions(program)
- ❖ .It controls the operation of all parts of computer.
- ❖ Converts data into information
- ❖ Control center
- ❖ Set of electronic circuitry that executes stored program instructions
- ❖ Two parts
  - o **Control Unit (CU)**
- ❖ Part of the hardware that is in-charge
- ❖ Directs the computer system to execute stored program instructions
- ❖ Communicates with other parts of the hardware

  - o **Arithmetic Logic Unit (ALU)**
- ❖ Performs arithmetic operations

- ❖ Performs logical operations

RAM

➢ A **RAM** constitutes the internal memory of the CPU for storing data, program and program result.
➢ It is read/write memory.
➢ It is called random access memory (RAM).
➢ RAM is volatile, i.e. data stored in it is lost when we switch off the computer or if there is a power failure.
➢ RAM is small , both in terms of its physical size and in the amount of data it can hold.
➢ Hence a backup uninterruptible power system(UPS) is often used with computers
➢ Keeps the instructions and data for current program
➢ Data in memory can be accessed randomly
➢ Easy and speedy access
➢ Volatile
➢ Erased
➢ Written over

Types of RAM
• Static RAM (SRAM)
• Dynamic RAM (DRAM)

Static RAM (SRAM)

➢ The word **static** indicates that the memory retains its contents as long as power remains applied.
➢ Data is lost when the power gets down due to volatile nature.
➢ SRAM chips use a matrix of 6-transistors and no capacitors.
➢ Transistors do not require power to prevent leakage, so SRAM need not have to be refreshed on a regular basis.
➢ Because of the extra space in the matrix, SRAM uses more chips than DRAM for the same amount of storage space, thus making the manufacturing costs higher.
➢ Static RAM is used as cache memory needs to be very fast and small.

Characteristic of the Static RAM
➢ It has long data lifetime
➢ There is no need to refresh
➢ Faster
➢ Used as cache memory
➢ Large size
➢ Expensive
➢ High power consumption

Dynamic RAM (DRAM)
➢ DRAM must be continually **refreshed** in order to maintain the data.
➢ This is done by placing the memory on a refresh circuit that rewrites the data several hundred times per second.
➢ DRAM is used for most system memory because it is cheap and small.
➢ All DRAMs are made up of memory cells.
➢ These cells are composed of one capacitor and one transistor.

Characteristic of the Dynamic RAM
  - ➢ It has short data lifetime
  - ➢ Need to refresh continuously
  - ➢ Slower as compared to SRAM
  - ➢ Used as RAM
  - ➢ lesser in size
  - ➢ Less expensive
  - ➢ Less power consumption

ROM
  - ➢ **ROM** stands for Read Only Memory.
  - ➢ We can only read but cannot write on it.
  - ➢ This type of memory is non-volatile.
  - ➢ The information is stored permanently in such memories during manufacture.
  - ➢ A ROM, stores such instruction as are required to start computer when electricity is first turned on, this operation is referred to as bootstrap.
  - ➢ ROM chip are not only used in the computer but also in other electronic items like washing machine and microwave oven.
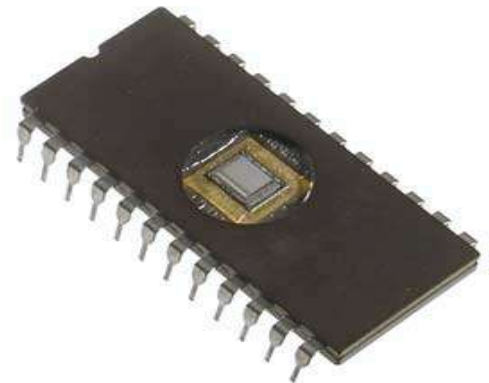
Types of ROM

  - • **MROM (Masked ROM)**
  - ✓ The very first ROMs were hard-wired devices that contained a pre-programmed set of data or instructions.
  - ✓ These kinds of ROMs are known as masked ROMs.
  - ✓ It is inexpensive ROM.

  - • **PROM (Programmable Read only Memory)**
  - ✓ PROM is read-only memory that can be modified only once by a user.
  - ✓ The user buys a blank PROM and enters the desired contents using a PROM programmer.
  - ✓ Inside the PROM chip there are small fuses which are burnt open during programming.
  - ✓ It can be programmed only once .
  - ✓ It is not erasable.

  - • **EPROM(Erasable and Programmable Read Only Memory)**
  - ✓ The EPROM can be erased by exposing it to ultra-violet light for duration of up to 40 minutes.
  - ✓ During programming an electrical charge is trapped in an insulated gate region.
  - ✓ The charge is retained for more than ten years because the charge has no leakage path.
  - ✓ For erasing this charge, ultra-violet light is passed through a quartz crystal window (lid).
  - ✓ This exposure to ultra-violet light dissipates the charge.
  - ✓ During normal use the quartz lid is sealed with a sticker.

  - • **EEPROM(Electrically Erasable and Programmable Read Only Memory)**
  - ✓ The EEPROM is programmed and erased electrically.
  - ✓ It can be erased and reprogrammed about ten thousand times.
  - ✓ Both erasing and programming take about 4 to 10 ms (milli second).
  - ✓ In EEPROM, any location can be selectively erased and programmed.
  - ✓ EEPROMs can be erased one byte at a time, rather than erasing the entire chip.
  - ✓ Hence, the process of re-programming is flexible but slow.

Advantages of ROM
- Non-volatile in nature
- These cannot be accidentally changed
- Cheaper than RAMs
- Easy to test
- More Reliable than RAMs
- These are static and do not require refreshing
- Its contents are always known and can be verified

Output Unit

Any machine which is capable of representing information from a computer is known as output device. Output unit consists of devices with the help of which we get the information from computer. This unit is a link between computer and users.

Output devices translate the computer's output into the form understandable by users.

Following are few of the important output devices which are used in Computer Systems

- Monitors
- Graphic Plotter
- Printer

- Monitors
- Sound card
- speaker

Monitor commonly called as Visual Display Unit (VDU) is the main output device of a computer. It forms images from tiny dots, called pixels that are arranged in a rectangular form. The sharpness of the image depends upon the no. of the pixels.

There are two kinds of viewing screen used for monitors.

Cathode-Ray Tube (CRT)

Flat- Panel Display

Cathode-Ray Tube (CRT) Monitor

In the CRT display is made up of small picture elements called pixels for short. The smaller the pixels, the better the image clarity, or resolution. It takes more than one illuminated pixel to form whole character, such as the letter e in the word help.

A finite number of characters can be displayed on a screen at once. The screen can be divided into a series of character boxes - fixed location on the screen where a standard character can be placed.

The most screens are capable of displaying 80 characters of data horizontally and 25 lines vertically.

There are some disadvantages of CRT

- Large in Size
- High Power consumption

Flat-Panel Display Monitor

The flat-panel display refers to a class of video devices that have reduced volume, weight and power requirement compare to the CRT. You can hang them on walls or wear them on your wrists. Current uses for flat-panel displays include calculators, videogames, monitors, laptop computer, graphics display.

The flat-panel display are divided into two categories

Emissive Displays - The emissive displays are devices that convert electrical energy into light. Example are plasma panel and LED(Light-Emitting Diodes).

Non-Emissive Displays - The Non-emissive displays use optical effects to convert sunlight or light from some other source into graphics patterns. Example is LCD(Liquid-Crystal Device)

Printers

Printer is the most important output device, which is used to print information on paper.

There are two types of printers
- ➢ Impact Printers
- ➢ Non-Impact Printers

Impact Printers

The printers that print the characters by striking against the ribbon and onto the paper are called impact printers.

Characteristics of Impact Printers are following
- Very low consumable costs
- Impact printers are very noisy
- Useful for bulk printing due to low cost
- There is physical contact with the paper to produce an image

These printers are of two types
- **Character printers**
- **Line printers**

Character Printers:

Character Printers are printers which print one character at a time.
These are of further two types
- Dot Matrix Printer(DMP)
- Daisy Wheel

Dot Matrix Printer

In the market one of the most popular printer is Dot Matrix Printer because of their ease of printing features and economical price. Each character printed is in form of pattern of Dot's and head consists of a Matrix of Pins of size (5*7, 7*9, 9*7 or 9*9) which comes out to form a character that is why it is called Dot Matrix Printer.

Advantages
- Inexpensive
- Widely Used
- Other language characters can be printed

Disadvantages
- Slow Speed
- Poor Quality

Daisy Wheel Printer

Head is lying on a wheel and Pins corresponding to characters are like petals of Daisy(flower name) that is why it is called Daisy Wheel Printer. These printers are generally used for word-processing in offices which require a few letters to be send here and there with very nice quality representation.

Advantages
- More reliable than DMP's
- Better quality
- The fonts of character can be easily changed.

Disadvantages
- Slower than DMP's
- Noisy

- More expensive than DMP's

Line Printers
Line printers are printers which print one line at a time.
These are of further two types
- Drum Printer
- Chain Printer

Drum Printer
This printer is like a drum in shape so it called drum printer. The surface of drum is divided into number of tracks. Total tracks are equal to size of paper i.e. for a paper width of 132 characters, Drum will have 132 tracks. A character set is embossed on track. The different characters sets are available in market 48 character set, 64 and 96 characters set. One rotation of drum prints one line. Drum Printers are fast in speed and speed in between 300 to 2000 lines per minute.

Advantages
- Very high speed

Disadvantages
- Very expensive
- Characters fonts cannot be changed

Chain Printer
In this printer chain of character sets are used so it called Chain Printers. A standard character set may have 48, 64, 96 characters.

Advantages
- Character fonts can easily be changed.
- Different languages can be used with the same printer.

Disadvantages
- Noisy
- Do not have the ability to print any shape of characters.

Non-impact Printers
The printers that print the characters without striking against the ribbon and onto the paper are called Non-impact Printers. These printers print a complete page at a time, also called as Page Printers.
These printers are of two types
- Laser Printers
- Inkjet Printers

Characteristics of Non-impact Printers
- Faster than impact printers.
- They are not noisy.
- High quality.
- Support many fonts and different character size.

Laser Printers
These are non-impact page printers. They use laser lights to produces the dots needed to form the characters to be printed on a page.

Advantages
- Very high speed.
- Very high quality output.
- Give good graphics quality.
- Support many fonts and different character size.

Disadvantage
- Expensive.

- Cannot be used to produce multiple copies of a document in a single printing.

Inkjet Printers

Inkjet printers are non-impact character printers based on a relatively new technology. They print characters by spraying small drops of ink onto paper. Inkjet printers produce high quality output with presentable features.

They make less noise because no hammering is done and these have many styles of printing modes available. Colour printing is also possible. Some models of Inkjet printers can produce multiple copies of printing also.

Advantages

- High quality printing
- More reliable

Disadvantages

- Expensive as cost per page is high
- Slow as compare to laser printer

Sound card:-

A sound card (also known as an audio card) is an internal computer expansion card that facilitates the input and output of audio signals to and from a computer under control of computer programs. The term sound card is also applied to external audio interfaces that use software to generate sound, as opposed to using hardware inside the PC. Typical uses of sound cards include providing the audio component for multimedia applications such as music composition, editing video or audio, presentation, education and entertainment (games) and video projection.

Computers also produce sound output, ranging from simple beeps alerting the user, to impressive game sound effects, to concert quality music. The circuitry to produce sound may be included on the motherboard, but high quality audio output from a PC usually requires a sound card in one of the expansion slots, connected to a set of good quality external speakers or headphones.

Multimedia is a term describing computer output that includes sound, text, graphics, movies, and animation. A sound card is an example of a multimedia output device (as is a monitor that can display graphics).

Speaker

A speaker gives you sound output from your computer. Some speakers are built into the computer and some are separate.

Input devices:-

Following are few of the important input devices which are used in Computer Systems

- Keyboard
- Mouse
- Joy Stick
- Light pen
- Track Ball
- Scanner
- Graphic Tablet
- Microphone
- Magnetic Ink Card Reader(MICR)
- Optical Character Reader(OCR)
- Bar Code Reader
- Optical Mark Reader
- Touch screen
- Digital camera

Keyboard

Most common and very popular input device is keyboard. The keyboard helps in inputting the data to the computer.The layout of the keyboard is like that of traditional typewriter, although there are some additional keys provided for performing some additional functions.

Keyboard are of two sizes 84 keys or 101/102 keys, but now 104 keys or 108 keys keyboard is also available for Windows and Internet.

The keys are following

Sr. No.	Keys	Description
1	Typing Keys	These keys include the letter keys (A-Z) and digits keys (0-9) which are generally give same layout as that of typewriters.
2	Numeric Keypad	It is used to enter numeric data or cursor movement. Generally, it consists of a set of 17 keys that are laid out in the same configuration used by most adding machine and calculators.
3	Function Keys	The twelve functions keys are present on the keyboard. These are arranged in a row along the top of the keyboard.Each function key has unique meaning and is used for some specific purpose.
4	Control keys	These keys provides cursor and screen control. It includes four directional arrow key.Control keys also include Home, End,Insert, Delete, Page Up, Page Down, Control(Ctrl), Alternate(Alt), Escape(Esc).
5	Special Purpose Keys	Keyboard also contains some special purpose keys such as Enter, Shift, Caps Lock, Num Lock, Space bar, Tab, and Print Screen.

Mouse

Mouse is most popular Pointing device. It is a very famous cursor-control device. It is a small palm size box with a round ball at its base which senses the movement of mouse and sends corresponding signals to CPU on pressing the buttons.

Generally it has two buttons called left and right button and scroll bar is present at the mid. Mouse can be used to control the position of cursor on screen, but it cannot be used to enter text into the computer.

ADVANTAGES
- Easy to use
- Not very expensive
- Moves the cursor faster than the arrow keys of keyboard.

Joystick

Joystick is also a pointing device which is used to move cursor position on a monitor screen. It is a stick having a spherical ball at its both lower and upper ends. The lower spherical ball moves in a socket.TheJoystic can be moved in all four directions.

The function of joystic is similar to that of a mouse. It is mainly used in Computer Aided Designing(CAD) and playing computer games.

Light Pen

Light pen is a pointing device which is similar to a pen. It is used to select a displayed menu item or draw pictures on the monitor screen.It consists of a photocell and an optical system placed in a small tube.

When light pen's tip is moved over the monitor screen and pen button is pressed, its photocell sensing element detects the screen location and sends the corresponding signal to the CPU.

Track Ball

Track ball is an input device that is mostly used in notebook or laptop computer, instead of a mouse. This is a ball which is half inserted and by moving fingers on ball, pointer can be moved.

Since the whole device is not moved, a track ball requires less space than a mouse. A track ball comes in various shapes like a ball, a button and a square.

Scanner

Scanner is an input device which works more like a photocopy machine. It is used when some information is available on a paper and it is to be transferred to the hard disc of the computer for further manipulation.

Scanner captures images from the source which are then converted into the digital form that can be stored on the disc. These images can be edited before they are printed.

Digitizer

Digitizer is an input device which converts analog information into a digital form. Digitizer can convert a signal from the television camera into a series of numbers that could be stored in a computer. They can be used by the computer to create a picture of whatever the camera had been pointed at.

Digitizer is also known as Tablet or Graphics Tablet because it converts graphics and pictorial data into binary inputs. A graphic tablet as digitizer is used for doing fine works of drawing and images manipulation applications.

Microphone

Microphone is an input device to input sound that is then stored in digital form. The microphone is used for various applications like adding sound to a multimedia presentation or for mixing music.

Magnetic Ink Card Reader(MICR)

MICR input device is generally used in banks because of a large number of cheques to be processed every day. The bank's code number and cheque number are printed on the cheques with a special type of ink that contains particles of magnetic material that are machine readable.

This reading process is called Magnetic Ink Character Recognition(MICR). The main advantages of MICR is that it is fast and less error prone.

Optical Character Reader(OCR)

OCR is an input device used to read a printed text. OCR scans text optically character by character, converts them into a machine readable code and stores the text on the system memory.

Bar Code Readers

Bar Code Reader is a device used for reading bar coded data (data in form of light and dark lines). Bar coded data is generally used in labelling goods, numbering the books etc. It may be a hand held scanner or may be embedded in a stationary scanner.

Bar Code Reader scans a bar code image, converts it into an alphanumeric value which is then fed to the computer to which bar code reader is connected.

Optical Mark Reader(OMR)

OMR is a special type of optical scanner used to recognize the type of mark made by pen or pencil. It is used where one out of a few alternatives is to be selected and marked. It is specially used for checking the answer sheets of examinations having multiple choice questions.

Touch screen
Some computers, especially small hand-held PDAs, have touch sensitive display screens. The user can make choices and press button images on the screen. You often use a stylus, which you hold like a pen, to "write" on the surface of a small touch screen.

Digital camera
A digital camera can store many more pictures than an ordinary camera. Picturestaken using a digital camera are stored inside its memory and can be transferred to acomputer by connecting the camera to it. A digital camera takes pictures byconverting the light passing through the lens at the front into a digital image.

<div align="center">

Storage Devices
</div>

The memory is of **two types**; one is the **primary memory** and the other one is the **secondary memory**.

The **primary memory** is the volatile memory and the secondary memory is the non volatile memory. The volatile memory is the kind of the memory that is erasable and the non volatile memory is the one where in the contents cannot be erased. Basically when we talk about the data storage devices it is generally assumed to be the secondary memory.

The **secondary memory** is used to store the data permanently in the computer. The secondary storage devices are usually as follows: hard disk drives – this is the most common type of storage device that is used in almost all the computer systems. The other ones include the floppy disk drives, the CD ROM, and the DVD ROM. The flash memory, the USB data card etc.
As we know that the Main Memory Stores the data in a Temporary Manner means all the data will be loss when the Power switched off. And all the data will be loss when the power goes switched off.
So that we uses the Secondary Storage devices those are used for Storing the data in a Permanent Manner means all the Data will remain Stored whether the Power is Switched on or Switched off means the Power Will never effect on the System. For storing the data in a Permanent Manner we uses the **Magnetic Storage Devices.**

There are also Some Advantages of Secondary Storage Devices:-
1) **Non-Volatile Storage Devices:** The Non-Volatile Storage Devices are Non-Volatile in the nature means them never loss their data when the Power goes switched off. So that data which is Stored into the Non-Volatile Storage Devices will never be Loosed When the Power Switched off.
2) **Mass Storage: T**he Capacity of these Devices is very high means we can Store the Huge Amount of data into the Secondary Storage Devices. We can Store data into the Secondary Storage Devices in the form of Giga Bytes and Tera Bytes.
3) **Cost Effective:** The Cost of Secondary Storage Devices is very lower in compare to the Main Memory So that they are also called as the more cost effective and they are very small and couldn't easily damage. And the data can't be easily loss from these Disks.
4) **Reusability:** As Memory Contains the Data in the Temporary as well as Permanent Manner. But the Secondary Storage Devices are always Reusable means they can be erased and stored any Time. Means we can add or Remove the Contents from these Disks when we Requires.

Various types of Secondary Storage Devices are as Followings: -
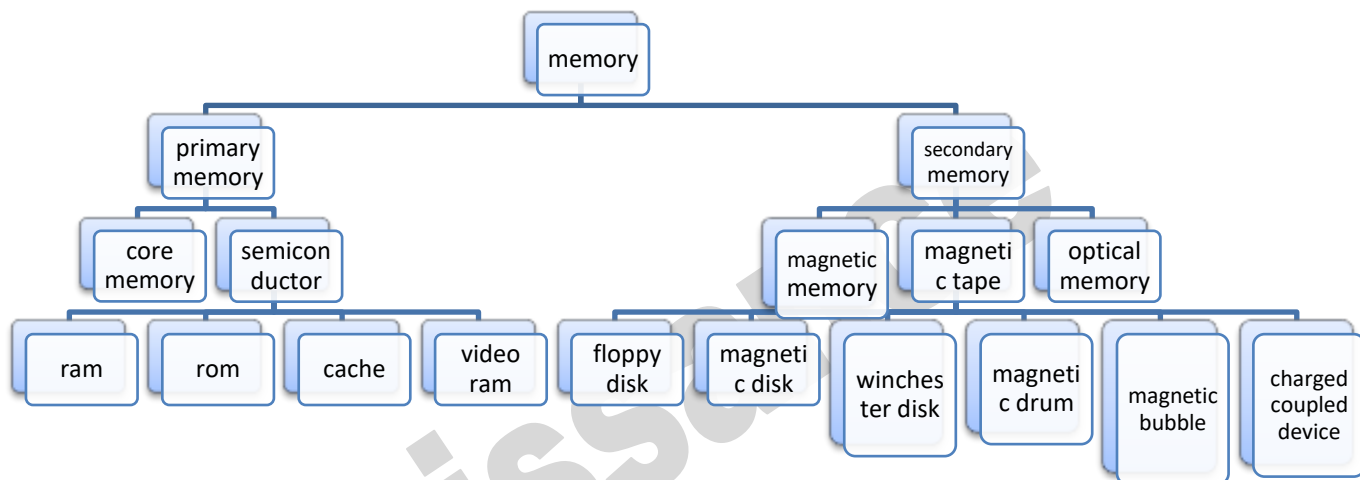
1) **Magnetic Tapes**: The Magnetic Tapes is the Type of Secondary Storage Device and this Device is used for taking back up of data and this Tape contains some magnetic fields and the Magnetic Tapes are used Accessing the data into the Sequential Form and the Tape Also Contains a Ribbon which is coated on the Single Side of the Tape and also contains a head which reads the data which is Recorded on to the Tape. And when we are reading the information from the disk then we can also read backward information means we can also back the Tape for Reading the Previous information. And For inserting the Tape into the System we also Requires Some Tape Drives Which Contains Tape and which is Responsible for Reading the contents from the Tapes.

They can Store huge Amount of data into the Tape Drive , But the Main Limitation of the Tape Drive is that we cant Access the Data from the Disks directly means if we wants to 100th Record from the Tape then we must have to move all the Previous i.e. 99th Records first. And the Tapes are also easily damaged due to the Human Errors.

2) **Magnetic Disks** : - This is also called as the hard disk and this is made from the thin metal platter which is coated on the both sides of the magnetic Disks. And the there are Many Plates or Platters into a single Hard Disk and all the Plates are Made from the Magnetic Materials and all the Disks are Rotate from the 700 to 3600 rpm means Rotation per Minute and the Hard Disk also Contains a head which is used for both Reading and Writing the Data from the Hard Disks.

The Plate of Disk is divided into the Tracks and sectors and the collection of Tracks makes a Cylinder means all the Tracks of the Disk which a Consecutive Areas makes a Cylinder.

The Disk is first divided into the Number of Tracks and the Tracks are further divided into the sectors and the Number of Tracks Makes a Cylinder. All the data is Stored into the disk by using Some Sectors and each sectors belongs to a Tracks.

The Data is accessed from the Disk by using the heads, all the heads have Some Arm those are used for Reading the Data from the Particular Tracks and sector. When the Disk Rotates very high Speed then the Head also Moves, For Reading the data from the Disk the ARM touches with the Particular Track and read the data from that Location.

For Locating a Particular data from the Disk the head Moves Around the Disk very quickly and data which a user wants to Access must have an Address So that Arm of the head just use that Address Means the Number of Cylinder, Number of Track and Number of Sectors from which user wants to read the data. With the Help of these Read and Write heads we can also Read the Data from the Disk and we can also Stores some data onto the Disk. Some Time Considerations are also used when we are accessing or storing the data onto the hard disk.

1)   Seek Time: - The Total Time which is Taken to Move on the Desired track is known as the seek Time. And time is always measured by using the Milliseconds.

2)   Latency Time. : The time required to Bring the Particular Track to the Desired Location Means the Total Time to bring the Correct the Sector for Reading or for the read and Write head. This is also called as the Average Time.

3)   Data Transfer Time: The Total Time which is required for Reading and Writing the data into the Disk is known as the Data transfer Time.

3**) Floppy Diskette**: The Floppy Disk is also a Secondary Storage device which is used for storing the data in a Permanent Manner.

The floppy is made up of Rigid Mylar Plastic and also contains a Magnetic black disk inside the Plastic Cover. The Floppy Disk also Stores all the Data into the Form of Tracks and Sectors and the floppy Disk provides both Reading and Writing the data into the Disk. The Floppy Disk is also called as Reusable Disk means the Floppy Disk Provides us the Facility to Read and Writes the Data into disk as and When Necessary and Also Many Times. We can Read and Write the data from the Disk.

The **Main Advantage** of the Floppy Disk is that the Data can be Stored many Times but the Main **Limitation** of the floppy Disk is that floppy Disk have a **Small capacity** and the Floppy Disk also doesn't have Reliability means the Data Stored into the Disk **may not be used for Long Time** because the floppy Disk is very Sensitive Thing when we Move the Head of the Disk Again and Again then the floppy disk gets Damaged. So that we can say that Floppy Disk is not a Reliable thing. And I the Other side the Cost of floppy Disk is also high means with the Comparison of the Other Storage Media's Floppy Disk have some more cost.

4) **Optical Disks:** The Optical Disks are also called as the CD-ROM's means Compact Disk Read Only Memory which is also used for Storing the data into the Disk and this is called as the Optical Disk because the CD-ROM 's are made up of the Golden or Aluminum Material and the data is Stored on the Disk in the Form of the Tracks and Sectors. The Whole Disk is Divided into the Number of Tracks and the Single Track is Divided into the Number of Sectors and the Data is Stored into the Sectors and the Disk is Divided into the Sectors as the first Track Contains the Sectors in the huge Size and the Other Tracks contains the Sectors in a Small Manner. So that as the Disk grows the Disk is Divided into the Small Number of Tracks and the Sectors.

CD-ROM Contains the data Which is truly Read able means we cant edit the contents of the CD-ROM Means once Data has been Written into the CD , we can be able to Change the Contents of the Disk and the Data which is Stored on the Disk can be Any Time Read by the user.

 The CD-ROM provides us the Large Capacity in compare to the Floppy Disks and the CDROM can Store the Data from 650 MB to 800 MB means the data can be Store up to this Space.

There are Many Disks that can't be Erased once Written So they are also called as the WORM Disks Means the Write Once and Read Many Mane a user can just Write the data only one Time and then after that he can use that Disk Many Times but a user cant Edit or Change those Contents after they are Written into the File.

So that these Types of Optical Disks are also called as the CD-ROM and also Some Times they are known as the CD-R Means the Read Only Disks because the data which is Written into these Types of Disks is never to be Erased.

Now these Days there are also Some CDs Available those are also called as the CD-RW or Read Writable Disks. As the Name Suggest these Disks Provides the feature to the user to Read and Write the Contents from the Disk as they feel Necessary So that the CD-RW are now Most Popular because a user can any Time Remove the Contents from the Disk and also he can store the new Contents into the Disk.

The **CD-R and CD-RW** both have Same Capacity and both these can be used for Transferring the Files from one System to another but the Main difference is that the cost. The CD-RW has Some More Cost in compare to the Simple CD or in Compare to the CD-R.

Winchester Disk

Another term for hard disk drive. The term Winchester comes from an early type of disk drive developed by IBM that had 30MB of fixed storage and 30MB of removable storage; so its inventors called it a Winchester in honor of its 30/30 rifle. Although modern disk drives are faster and hold more data, the basic technology is the same, so Winchester has become synonymous with hard.

Zip disk

A **Zip disk** is similar in size to a floppy diskette, but thicker. It is basically a "super floppy" but the higher construction tolerances and smaller read/write heads allow the Zip disk to hold more data than

a floppy. The first Zip disks held 100 MB. Later Zip drives could read 250 MB Zips (in addition to the old 100 MB disks). An even newer model Zip drive uses 750 MB disks.

Both Zip disk and floppy diskettes have the advantage of being removable **media**. Data stored on these disks can be removed and taken to other locations. Both Zips and floppies can be formatted for either the PC or the Macintosh (Macs can read both formats).

We had Zip drives in our previous PCs and Macs at UNM-LA, but our newer computers don't use these, so you may never have to deal with them.

Unit II
Operating system:

The Operating System of a computer can be defined as a collection of software modules which extend the computer hardware and make it more convenient and easier to use for other programs. In other words it "converts" real computer with hardware resources into a virtual machine with virtual resources.

Therefore, all software may be divided into two broad categories:
System Software, which runs on hardware resources (e.g. MacOS, Windows) and **User Software**, which runs on virtual resources provided by operating system (e.g. MS Word, Adobe Photoshop). Every computer needs to have operating system in order to run any end-user application.

An Operating System is a set of programs that controls and coordinates the use of computer hardware among various application programs. It provides an environment within which user can execute programs. A computer can be divided into four components: the hardware, the operating system, the applications programs, the users. It is the operating system that manages all the above components. The various functions of the operating system are:
- Controlling Input/Output devices (Keyboard, Mouse, Monitor, Printer, Plotter etc...)
- Booting the computer
- Memory and File storage management
- CPU Scheduling and controlling processes
- Loading, initiating, executing and supervising user applications programs
- Handling errors and restarting
- Providing command interface between user and computer system

Examples of Operating system are : UNIX (Solaris, IRIX, HPUnix, Linux, DEC Unix) Microsoft Disk Operating System (MS-DOS), WIN95/98, WIN NT, OS/2 etc.

An operating system is a group of computer programs that coordinates all the activities among computer hardware devices. It is the first program loaded into the computer by a boot program and remains in memory at all times.

Types of Operating Systems
Within the broad family of operating systems, there are generally four types, categorized based on the types of computers they control and the sort of applications they support. The categories are:
- Real-time operating system(RTOS)
- Single-user, single task
- Single-user, multi-tasking

Multi-user
The **system administrator** is the only "user" for Windows 2000 or Netware. The network support and all of the remote user logins the network enables are, in the overall plan of the operating system, a program being run by the administrative user.

Difference between windows and DOS

	DOS	Windows
Definition	DOS (Disk Operating System) are simple text command operating systems that were popular from 1981 to 1995.	Windows is a range of graphical interface operating systems that are developed and sold by Microsoft.
GUI	DOS used a text based interface that	Windows uses graphics, images and text.

	required text and codes to operate	
Input System	Text is used as the basic input system commands.	Uses a mouse for all operating system input.
Multitasking	DOS is unable to run multiple processes at the same time.	Windows is a multitasking operating system; allowing more than one process to work simultaneously.
Storage Size	The highest amount of storage size available is 2GB.	Window systems offer storage space up to 2 terabyte.
Demands on System Resources	Booting up system is DOS is less demanding on the CPU.	Booting up Windows is more demanding on the CPU.
Registry and Swap Files	DOS uses a directory system, where all the files are contained within a particular directory or a subdirectory.	Windows uses a different registry compared to DOS, making it difficult to manually delete programs. An excessive number of temporary files and file fragments can cause the system to slow down or crash.
Current Uses	More ideally used for prototyping, testing, and making automated systems.	Used worldwide as the most popular operating system.
Price	DOS is free	Windows is costly

Computers have changed a great deal since the introduction of the first version of MS-DOS in 1981. While MS-DOS was the dominant operating system in the world of computers for several years, graphical user interfaces (GUIs) eventually became the norm, and today Windows runs on the majority of the world's computers. Comparing standalone versions of MS-DOS with modern versions of Windows you will find that, apart from the fact that Windows still has a command prompt available, the two operating systems have very little in common.

Text vs. Graphics
The primary way that an MS-DOS computer displays information is through plain text. Although many MS-DOS applications do have graphics, basic operating system tasks such as browsing and copying files take place entirely in text unless a graphical shell (a program that runs on top of the MS-DOS operating system) is used. In Windows, all operating system tasks take place within a graphical environment. Small pictures called "icons" represent each file and program. Early Windows versions are, in fact, graphical shells for MS-DOS. It was not until the release of Windows XP in 2001 that most home computer owners moved completely away from MS-DOS-based operating systems.

Input System
MS-DOS uses text for all basic operating system commands. For example, the command "dir" lists the files in a directory, while the command "cd" navigates to a different directory. Windows uses a mouse for all operating system input except tasks that explicitly require text, such as creating a document or responding to email.

Multitasking
Windows is a multitasking operating system, meaning that it can run multiple program processes simultaneously. A typical Windows session might consist of the user browsing the Web while adding music to an MP3 player with their email program checking for new messages in the background. MS-

DOS is unable to run multiple tasks simultaneously. When you want to do something else on an MS-DOS computer, you need to quit the current program and run a different one.

Storage Size

Hard drives manufactured today contain hundreds—and even thousands—of gigabytes of storage space. However, the final standalone version of MS-DOS, DOS 6.22, used the now-obsolete FAT16 file system. The maximum partition size that FAT16 supports is just 2 GB. Today, 2 GB is a very small amount of storage, with memory cards the size of fingernails easily storing that amount.

Introduction to DOS / WINDOWS

Though UNIX was a powerful operating system available, but it was not suitable for 8-bit 8086 microprocessor based Personal Computers. So there was a need for a small operating system that could work in 640K memory(RAM). DOS was an variant of CP/M (Control Program/Monitor) which ran for the first time on IBM-PC in 1981. It is called so because it resides on Floppy or Hard disk and provides command level interface between user and the computer hardware. The different versions of MS-DOS have evolved over a period of time with Microsoft introducing new features in each new releases. Starting with MS-DOS1.1, the latest version was MS-DOS6.22 released in 1994. There are various versions of DOS like MS-DOS(Microsoft), PC-DOS(IBM), Apple DOS, Dr-DOS etc.

WINDOWS was similar to APPLE Mach operating system interface on IBM-PC. The main features of windows are easy to use graphical user interface (GUI), device independent graphics and multitasking support. The first version of windows1.0 was introduced in 1985. Windows was an application of MS-DOS using the basic commands of DOS. Windows for Workgroup (WIN3.11) released in 1992 was an integrated windows and networking package with file and printer sharing capabilities, a network mail (Microsoft Mail) and a workgroup scheduler (Schedule+) packages in windows environment. WINDOWS-95 released in 1995 is a 32-bit operating system which includes MS-DOS7.0 and takes control of computer system after starting.

DOS:

MS-DOS was the original operating system for (IBM) PC's, and served as the base on top of which Windows was originally written. MS-DOS provided a text-based 'command-line interface' instead of the visual interface of the Mac and Windows.

Some knowledge of this command-line interface is still valuable for running older (MS-DOS) programs, and for writing 'scripts' ... sequences of operating system commands (also called batch or .BAT files).

The structure of Disk Operating System for IBM PC-compatible computers can be broken down into four distinct components:

- BIOS Module
- Kernel
- Command Processor
- External Commands

The operating system responsible for operating the disk is known as disk operating system or DOS. DOS helps in execution of all programs present in computer system. It can be operated upon by a single user operating system. DOS works to control all activities of the computer like deciding locations for the programs to be loaded, transferring files from hard disk to memory, accepting data from the keyboard, displaying information on the screen, handling printing tasks and so on.

File names and directory structure

A DOS file can have an 8 character name + an optional 3 character extension. The extension is intended to indicate the 'type' of the file. Most DOS and Windows programs assume some particular extension for the file they use; Windows uses the extension to associate a particular program with a file.

The files are organized in a tree-structured directory. An arbitrary file is specified by a path,

device:\directory\directory\...\filename.ext

The special file name '.' refers to the current directory; the file name '..' refers to the parent directory. Long Windows file names, and file names containing blanks or certain special characters, are mapped into MS-DOS file names of the form cccccc~1, cccccc~2, etc. They can also be referenced using the full file name inside of double-quote marks (").

History and versions of DOS :-
1981 Microsoft buys the rights for QDOS from Seattle Computer Products (SCP) for $25,000 on 27'July.
1981 MS-DOS 1.0 was released August, 1981.
1982 MS-DOS 1.25 was released August, 1982.
1983 MS-DOS 2.0 was released March, 1983.
1984 Microsoft introduces MS-DOS 3.0 for the IBM PC AT and MS-DOS 3.1 for networks.
1986 MS-DOS 3.2 was released April, 1986.
1987 MS-DOS 3.3 was released April, 1987.
1988 MS-DOS 4.0 was released July, 1988.
1988 MS-DOS 4.01 was released November, 1988.
1991 MS-DOS 5.0 was released June, 1991.
1993 MS-DOS 6.0 was released August, 1993.
1993 MS-DOS 6.2 was released November, 1993
1994 MS-DOS 6.21 was released March, 1994
1994 MS-DOS 6.22 was released April, 1994

Types of DOS:
There are two types of DOS:-
- MS-DOS
- PC-DOS

Functions of DOS:-
- It interact with the software or various application programs
- It provides file management utilities that perform useful tasks:-
1. Disk preparation
2. File operations
- It helps to automate the repetitive tasks.
- It co-ordinates with the functions of computer system
- It controls the execution of the program instruction
- It controls the way certain information is displayed on the screen
- It control the way your computer interprets certain command

BOOTING process:-
When the computer is switched on, the firmware program in Read Only Memory(ROM) also called Basic Input-Output System(BIOS) reads programs and data i.e. Operating System and loads it into memory (RAM). This process is known Bootstrapping(Booting). The OS once loaded takes control of the computer, handles user interaction and executes application programs.
During Booting process, computer loads the operating system into its memory. DOS booting involves reading following files into memory namely IO.SYS, MSDOS.SYS, and COMMAND COM. The Basic Input/Output Program (IO.SYS): This program provides interface between the hardware devices and software of the system. It takes care of the keyboard input, character output to monitor, output to printer and time of the day.

The File and Disk Manager Program (MSDOS.SYS) : It contains the file management and the disk buffering management capabilities. It keeps track of all the disk access of an application program and remains permanently in memory.

The Command Processor (COMMAND.COM) : It is also called command interpreter. It is the program that displays the system prompt and handles user interface by executing the command typed in by the user using keyboard.

DOS commands:-
Any instruction given to the computer to perform a specific task is called command. The DOS has several commands, each for a particular task and these are stored in DOS directory on the disk. The commands are of two types : (a)Internal Commands : These are in built commands of MS-DOS i.e. these are stored in Command interpreter file (COMMAND.COM). These commands reside in the memory as long as the machine is at he system prompt(C:\>) level. To use these commands no extra /external file is required. E.g. DATE, TIME, DIR, VER etc. (b) External commands : These are separate program (.com) files that reside in DOS directory and when executed behave like commands. An external command has predefined syntax. for e.g. HELP, DOSKEY, BACKUP, RESTORE, FORMAT etc.

Internal Commands:-
- DIR command:- Display the list of files and directories.
- MD or MKDIR command:- To make or create a new directory in the disk.
- CD or CHDIR command:- To switch from one directory to another.
- RD or RMDIR command:- To go inside the particular directory
- COPY command:- To copy one or specified files from one disk to another
- DEL command:- To delete any file present on the disk
- REN command:- To change the name of one or more files
- VOL command:- Display Disk Volume Label and volume serial number.
- DATE command:- It will display the system's current date
- TIME command:-It will show current time of the system
- CLS command:- To clear screen
- PATH command:- Displays or sets a search path for executable files
- TYPE command: - Displays the contents of standard text files on the screen

External Commands:-
- CHKDSK commands:- To check the status of a selected disk.
- XCOPY command:- Used to copy files and directory except system and hidden files.
- PRINT command:- To print one or more files.
- DISKCOPY command:- To make an exact duplicate of the original disk.
- DISKCOMP command:- To compare the content of two floppy disks to ensure they are identical.
- DOSKEY command:- Stores all DOS commands typed from the DOS prompt into the memory.
- TREE command:- Displays all the directory pathnames on the specified disk.
- MOVE command:- To move a directory ane one or more files from one location to another on the same disk.
- LABEL command:- To create, change or delete a volume label so as to identify a disk.
- APPEND command:- Allows to find files even when they are not in its own directory.
- FORMAT command:- To create a new root directory and file allocation table for the disk.

MS Windows

Windows XP is a personal computer operating system produced by Microsoft as part of the Windows NT family of operating systems. The operating system was released to manufacturing on August 24, 2001, and generally released for retail sale on October 25, 2001.

Windows XP is a graphical user interface (GUI). It has pictures (graphical) that you use (user) to communicate (interface) with the computer. This type of system is popular because it's logical, fun, and easy to use.

This operating system has multi-tasking capabilities, meaning it can run several applications at the same time. Multi-tasking allows you to view this lesson on the Internet at the same time you practice using other applications with Windows XP.

History of Windows:

Versions	Year
Windows	10 Nov.1983
Windows 1.0	Nov.1985
Windows 2.0	09 Dec.1987
Windows 3.0	22 May.1990
Windows 95	August 1995
Windows 98	June 1998
Windows 2000	Feb.2000
Windows XP	25 Oct. 2001
Windows Vista	2007
Windows 7	22 July 2009
Windows 8	26 Oct. 2012

The New and updated features in the new program are:
- Windows XP is faster, smarter, safer
- Windows XP is easier to learn and use
- Windows XP offers better help for every task
- Playing music, video and CDs
- Offers wizard
- User interface
- Infrastructure
- Networking and internet functionality

Windows XP editions
- Home and Professional
- Starter Edition
- Media Center Edition
- Tablet PC Edition
- Subscription and pre-paid editions
- 64-bit editions
- Editions for embedded systems

Windows XP is an operating system

Windows XP is a collection of programs, which enables the entire pc to work. Among Windows' most important tasks are:

- Assist in starting the pc.
- Control and handling of all hardware, including RAM, I/O, cards and controllers.
- Read-in of a graphics user interface with windows, menu bars etc.
- Forms a platform for the user programs (*applications*) like Word, Internet Explorer, and Photoshop etc.
- Handling of user data in *files*.

Beyond the pure operating system tasks Windows XP includes a large collection of smaller and larger tools. Among others Windows XP comes with Internet Explorer and the multimedia player Windows Media Player, which are independent user programs.
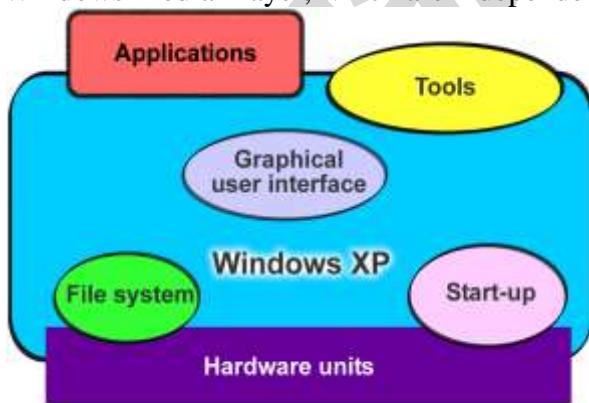
Windows XP is both an operating system and a program package.

Desktop

Desktops in a Windows is utility that allows users to manage applications on up to four virtual desktops, all accessible using the tray icon interface. 4. When referring to an operating system or GUI, the Desktop is a system of organization of icons on a screen. The Microsoft Windows Desktop was first introduced with Microsoft Windows 95 and has been included with every version of Windows since then.

Windows 7 Desktop

Start button

Taskbar icons

Windows Notification Area

Time and Date

ComputerHope.com

The desktop contains:

- **Start button**: This is one of the most important tools you will use while working with Windows XP. The Start button allows you to open menus and start applications.
- **Taskbar**: This is primarily used to switch between open windows and applications. Learn more about using the taskbar in a later lesson.
- **Icons (or graphical pictures)**: This represents applications, files, and other parts of the operating system. By default, Windows XP provides you with one desktop icon, the Recycle Bin.
- **Windows Notification Area**
- **Time and Date**: The date and time is also shown on the Desktop, in the notification area on the taskbar. If the date and time is incorrect, you can change the date and time right from the Desktop.

Exploring Windows Explorer

Windows Explorer is a file management tool that lets you create, rename, and delete folders. It also allows you to copy, print, move, delete, rename, and manage files.

To open Windows Explorer:

1. Open **My Documents**.
2. Click the **Folders** button on the **Navigation** toolbar.
3. A **list of folders** opens in the **left pane**.

To explore Windows Explorer:

1. With **Windows Explorer open**, scroll until you see the **Control Panel icon** in the left pane.
2. Click the **Control Panel icon**. The contents (of the Control Panel folder) display in the **right pane**.
3. Practice viewing other folders in the list.
4. To **close Windows Explorer**, click the **small black X** in the upper right of the list OR click the **Folder** button.

The Taskbar

The **taskbar** is the small blue bar you see at the bottom of your desktop. It contains the **Start menu** and the **Quick Launch bar**, which contains **icons** for Internet Explorer, Windows Media Player, and Show Desktop. Click an icon to open a program. Click Show Desktop to quickly view your desktop without closing any programs or windows.

The box on the right is called the **Notification Area**. Microsoft also uses the Notification Area to remind you when **software updates** are available for download.

When you open or minimize a window or program, a **rectangular button** appears on the taskbar that shows the name of the application.

The Start menu

When you click the **Start** button, the **Start menu** appears. The **Start menu** is your path to the applications on your computer. It contains two columns. The left side of the **Start menu** lists programs, while the right side allows access to common Windows folders (My Documents, for example). It also provides access to **Help and Support**, **Search**, and **Run**. If you select **All Programs**, a pop-up menu appears. Pop-up menus like this are called **cascading menus**. If a cascading menu is available, a **small black triangle** appears next to the name of the application or function.

To explore the Start menu:
1. Click the **Start** button.
2. Move the mouse pointer to each option, and view the various cascading menus.
3. Click (or roll your mouse pointer over) **All Programs**.
4. Move the mouse pointer to the right, and view other **cascading menus**.
5. To exit the menus, click outside the menu area or press **Esc** on your keyboard.
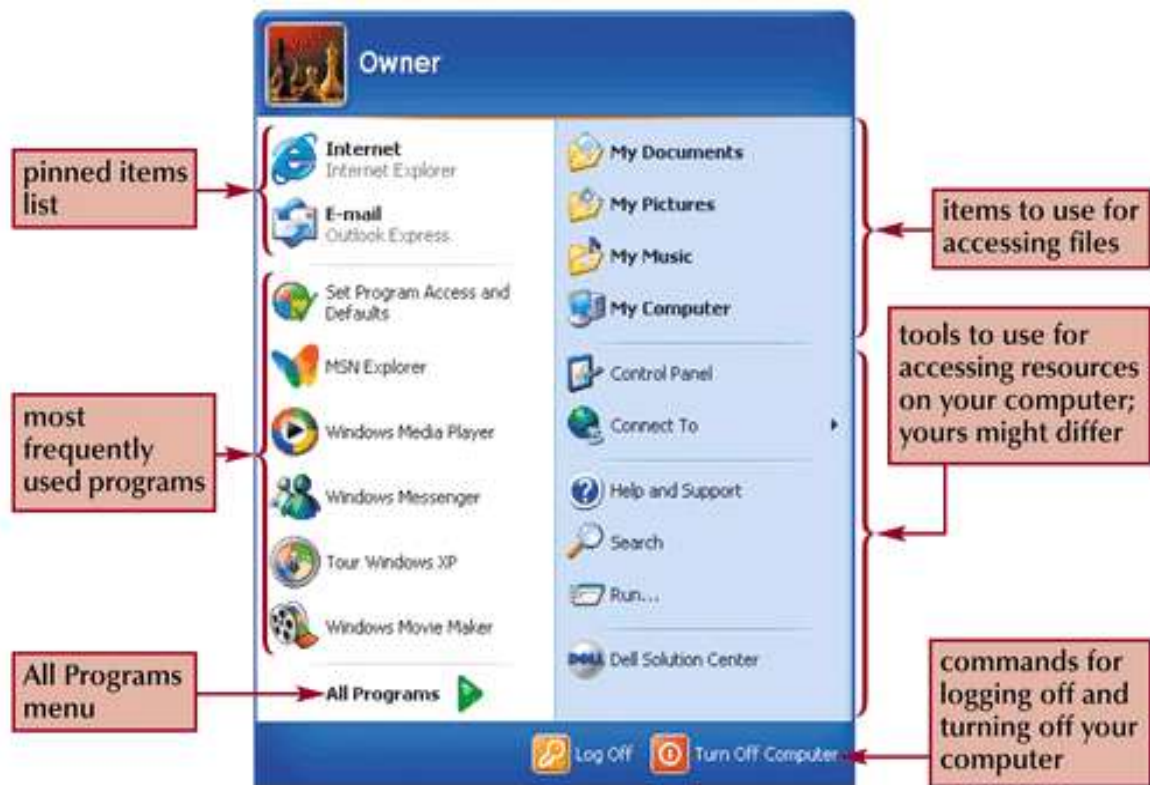
The Recycle Bin

The Recycle Bin is nothing more than a space on the hard disk reserved to store information that is deleted so that in the event of deleting a file or folder by mistake it is possible to retrieve it. By default the Recycle Bin restores files or folders to the place from where they were deleted. If, for example, a file is deleted from **D:\my documents**, when it is restored it will go to that folder.

The Recycle Bin will maintain the deleted documents until it is emptied.

To open the Recycle Bin place the cursor on *Desktop* and double-click on the **Recycle**

Bin icon.

Restoring Files or Folders

To restore all of the elements from the Recycle Bin click on the green arrow on the left side that says restore all items.

If we only want to restore some of the elements:

1) Select the elements to be restored by clicking on them. If the elements are not in subsequent order, use the Ctrl key to select them or the Shift key if they are one below the other.

2) Once selected, a dialog box will appear on the green arrow on the left that will say Restore this item or Restore the selected items.

The selected files will return to where they were located before deletion.

Deleting Files or Folders from the Recycle Bin

Before deleting any element from the Recycle Bin you need to realize that once it is deleted it cannot be retrieved or restored.

● If you want to delete any file or folder from the Recycle Bin follow these steps:

1) Select the Elements to be deleted.

2) Click on ✖ ; this will delete the selected elements. You can also do this by pressing the Delete button.

The selected files will disappear and cannot be restored.

My Computer

Itis another tool you can use to manage files and folders. With this tool, you can **create, rename and move folders** and **copy, print, move, delete and rename files**. It also allows you to gain **access** to other

system tools.

To open My Computer**:**

1. Double-click the **My Computer icon** on the desktop.
2. **My Computer** opens.

My Network Places overview

My Network Places displays shortcuts to shared computers, printers, and other resources on the network. The shortcuts are created automatically in My Network Places whenever you open a shared network resource, such as a printer or shared folder.

Open My Network Places

- To open My Network Places, click Start, and then click My Computer. Under Other Places, click My Network Places.
- The View workgroup computers task is displayed in My Network Places when your computer is in a workgroup and not in a domain. Double-click this icon to narrow your search to only those computers, printers, and resources that share a workgroup with your computer.
- If your computer is connected to a workgroup that has less than 32 computers, Windows will automatically create shortcuts in My Network Places to the shared resources in your workgroup.
- To add a shortcut in My Network Places to a folder on a Web server, the Web server must support network places..

My Documents

The My Documents folder is your own personal folder in which you can store your documents, graphics, and other personal files. You can change the target if you want My Documents to point to a different folder location.

- Change the Default Location of the My Documents Folder
- To change the default location of the My Documents folder, follow these steps:
- Click Start, and then point to My Documents.
- Right-click My Documents and then click Properties. Click the Target tab.

User Accounts

To get at the settings for the User Accounts, click Start and then Control Panel. From the Control Panel, double click User Accounts.

- We can create a new user account.
- We can make the account as password protected.

- Through admin we can even change the password.

Windows XP Accessories Applications:
- Calculator,
- Notepad,
- WordPad,
- Paint

UNIT-III

A word processor is an electronic device or computer application software that performs word processing: the composition, editing, formatting and sometimes printing of any sort of written material. Word processing can also refer to advanced shorthand techniques, sometimes used in specialized contexts with a specially modified typewriter.

The word processor emerged as a stand-alone office machine in the 1970s and 1980s, combining the keyboard text-entry and printing functions of an electric typewriter with a dedicated computer processor for the editing of text.

Characteristics

Word processing typically implies the presence of text manipulation functions that extend beyond a basic ability to enter and change text, such as automatic generation of:
- batch mailings using form letter template and an address database (also called mail merging);
- indices of keywords and their page numbers;
- tables of contents with section titles and their page numbers;
- tables of figures with caption titles and their page numbers;
- cross-referencing with section or page numbers;
- footnote numbering;
- new versions of a document using variables (e.g. model numbers, product names, etc.)

Examples of different word processing software are:
- WordPerfect
- Microsoft Word
- WordMark
- Lotus WordPro
- Procedure Write

Types of word processor:-
- Dedicated word processor
- Standard word processor software packages
- Word processing packages on minicomputer

Features of Word :
1) Word wrap
2) Editing of text
3) Page formatting
4) Paragraph formatting
5) Text formatting
6) Retriving of your work
7) Mail Merge
8) Spelling & grammer check
9) Use of thesaurus
10) Online Assistant

45, Anurag Nagar, Behind Press Complex, Indore (M.P.) Ph.: 4262100, www.rccmindore.com

Each of the tabs contains the following tools:
Home: Clipboard, Fonts, Paragraph, Styles, and Editing.
Insert: Pages, Tables, Illustrations, Links, Header & Footer, Text, and Symbols
Page Layout: Themes, Page Setup, Page Background, Paragraph, Arrange
References: Table of Contents, Footnote, Citation & Bibliography, Captions, Index, and Table of Authorities
Mailings: Create, Start Mail Merge, Write & Insert Fields, Preview Results, Finish
Review: Proofing, Comments, Tracking, Changes, Compare, Protect
View: Document Views, Show/Hide, Zoom, Window, Macros

Create a New Document

There are several ways to create new documents, open existing documents, and save documents in Word:
- Click the **Microsoft Office Button** and Click **New** or
- Press CTRL+N on the keyboard

Opening an Existing Document

- Click the **Microsoft Office Button** and Click **Open,** or
- Press CTRL+O on the keyboard, or
- If you have recently used the document you can click the **Microsoft Office Button** and click the name of the document in the **Recent Documents** section of the window Insert picture of recent docs

Saving a Document

- Click the **Microsoft Office Button** and Click **Save** or **Save As**, or
- Press CTRL+S on the keyboard, or
- Click the **File** icon on the Quick Access Toolbar

Renaming Documents

To rename a Word document while using the program:
- Click the **Office Button** and find the file you want to rename.
- Right-click the document name with the mouse and select **Rename** from the shortcut menu.
- Type the new name for the file and press the **ENTER** key.

Working on Multiple Documents

Several documents can be opened simultaneously if you are typing or editing multiple documents at once. All open documents will be listed in the **View Tab** of the Ribbon when you click on Switch Windows. The current document has a checkmark beside the file name. Select another open document to view it.

Document Views

There are many ways to view a document in Word.
- **Print Layout**: This is a view of the document as it would appear when printed. It includes all tables, text, graphics, and images.
- **Full Screen Reading**: This is a full view length view of a document. Good for viewing two pages at a time.
- **Web Layout**: This is a view of the document as it would appear in a web browser.
- **Outline**: This is an outline form of the document in the form of bullets.
- **Draft**: This view does not display pictures or layouts, just text.

To view a document in different forms, click the document views shortcuts at the bottom of the screen 📄📖📄📄📄 or:
- Click the **View Tab** on the Ribbon

- Click on the appropriate document view.

Close a Document
Click the **Office Button**
- Click **Close**

There are many features to help you proofread your document. These include: Spelling and Grammar, Thesaurus, AutoCorrect, Default Dictionary, and Word Count.

Editing text selecting – to select text with the mouse use the following steps –
1) Take the mouse pointer before the place you want to select text from and drag it to the place till you want.
2) Select the text with keyboard

Inserting & Deleting Text – You can insert or delete text in several ways.
1) Select a block of text from beginning to the last character. To delete press Del key from the keyboard this process will delete the entire block.
2) To delete single character use Del key or backspace key.
3) To Insert the text select the text copy the text and paste the text where ever you want.
4) There are different pasting options you can use.

Formatting Features of Ms word:-

Function of commonly used buttons

Normal ▾	Select the style to apply to paragraphs	Arial ▾	Changes the font of the selected text
12 ▾	Changes the size of selected text and numbers	**B**	Makes selected text and numbers bold
I	Makes selected text and numbers italic	U	Underlines selected text and numbers
≡	Aligns to the left with a ragged right margin	≡	Centers the selected text
≡	Aligns to the right with a ragged left margin	≡	Aligns the selected text to both the left and right margins
≔	Makes a numbered list or reverts back to normal	≔	Add, or remove, bullets in a selected paragraph
←	Decreases the indent to the previous tab stop	→	Indents the selected paragraph to the next tab stop
▢ ▾	Adds or removes a border around	✎ ▾	Marks text so that it is highlighted

selected text or objects   and stands out

A ·   Formats the selected text with the color you

Text Selecting –
You can select the text in two ways –
- By using shift key
- By using mouse

Once the text is selected you can change the formatting of the selected text. You can delete, move the text from one position to other.

Previewing the document –
Before printing the documents you can preview the document. In preview option we can change the margin, page layout, size etc features of your document. The step to preview the document is as follows –
1) Click MS-Office button
2) Click on print button & then
3) Click on print preview

Printing Document to a file page –
You can print the document. There are two different features to print the document are as follow –
3) Print – In print option you can change the number of copies, Select page no., choose printer etc before printing.
4) Quick Print – In quick print the document is directly send to the printer without making any changes.
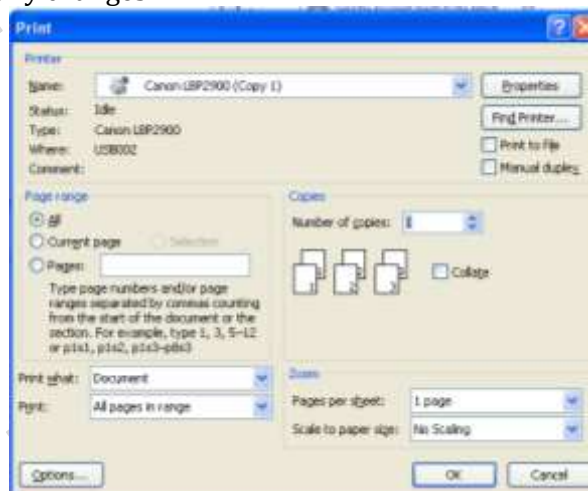
Reduce the no. of pages by one –

You can shrink the document pages to by one page. Attempt to shrink the document by one page by slightly reducing the size and spacing of the text. The option to reduce number of pages by one can be selected from Print Preview option.

Paragraph Formatting
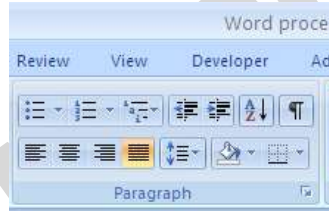
Paragraph formatting provide us the facility to format the paragraph written in the document. The paragraph formatting include the formatting features –

- Alignment – There are different alignments like left, center, rights & Justified.
- Line Spacing - In Line Spacing option you can change the spacing between the lines.
- Shading – In this option you can Color the background of the selected text or paragraph.
- Border – You can customize the border of the selected text or cell.

- Sorting options - In sorting option we can sort the text in alphabetical order or numerical order.
- Numbering / Bullets – We can create bullet list or numbering list through this option.
- Indent – Indentation determine the distance of paragraph from either the left or right margin.

Headers and Footers

Header & footer may be text or graphics printed on top & bottom of the document. Header is printed on top margin area & footer is printed on bottom margin area. Headers and footers are pieces of text or graphics that appear at the top and bottom of a page. After you set up a header and footer, they will appear on all of your pages. You can add a page number to a header or footer, and Microsoft Word will automatically insert the right page number for you.

To set up a header and footer for your document, click on the **Insert** tab at the top of Word. Now locate the **Header & Footer** panel:
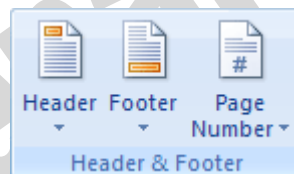
Footers

Microsoft Word allows you to insert page numbers into your document. This is done (usually) in the Footer area of the page. The Footer is just the opposite of the Header. You can do the same things with the Footer as you can with the Header. We'll see how to insert page numbers into

the Footer.Make sure the Design tab is select at the top of Word. Now locate the Navigation panel again. Click the item that says "Go to Footer":
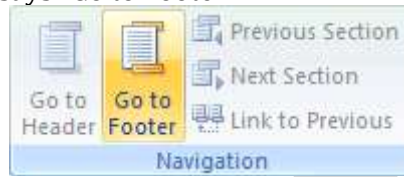
Multiple Columns –

With the use of multiple column option you can Spilt text into two or more columns. You can select this option from Page layout tab.

<div align="center">UNIT IV</div>

Microsoft's EXCEL has become the standard for basic data analysis. And, again, individuals with a college education in the 21st century will be expected to have a working knowledge of this foundational package. EXCEL is critical to understand not only because it facilitates basic data analysis, but also because it is typically the starting point for PC-based data which can then be analyzed using more sophisticated packages like SPSS, Minitab or SAS.

When you open EXCEL, the interface includes row and columns, with "cells" at the intersections. You can input data or formulas into the individual cells.

Spreadsheets are made up of columns, rows and their intersections are called cells.

Column- In a spreadsheet the COLUMN is defined as the vertical space that is going up and down the window. Letters are used to designate each COLUMN'S location

Row - In a spreadsheet the ROW is defined as the horizontal space that is going across the window. Numbers are used to designate each ROW'S location.

Cell - In a spreadsheet the CELL is defined as the space where a specified row and column intersect. Each CELL is assigned a name according to its COLUMN letter and ROW number(A1).

In a spreadsheet there are three basic types of data that can be entered.

- labels - (text with no numerical value)
- constants - (just a number -- constant value)
- formulas* - (a mathematical equation used to calculate)

To Create an Excel Workbook:

Choose File ➔ New from the menu bar

Choose Blank Workbook under the New category heading.

A blank workbook opens in the Excel window. The New Workbook task pane is closed.

To Save a new Workbook:

Choose File ➔ Save As from the menu bar. The Save As Dialog Box appears.

Click on the Save In: dropdown menu and locate where the file will be saved. Type a name for your file in the File Name: box. Click the Save button

To Save Changes Made to an Existing Workbook:

Choose File ➔ Save from the menu bar, or Click the 💾 Save button on the Standard toolbar.

✓ If you're saving the file for the first time and you do not choose a file name, Microsoft Excel will assign a file name for you.

✓ It is a good idea to Save frequently when working in a spreadsheet. You can quickly save your spreadsheet by using the quick-key combination Ctrl + S.

To Open an Existing Excel 2003 Workbook:

Choose File ➔ Open from the menu bar.

To close an existing Excel 2003 Workbook:

Choose File → Close from the menu bar. The workbook in the Excel window is closed.

To Enter Data into a Cell:
Click the cell where you want to type information. Type the data. An insertion point appears in the cell as the data is typed. The data can be typed in either the cell or the Formula bar. Click the cell that contains the information to be changed. Type the new entry. The old entry is replaced by the new entry.

To Edit Information in a Cell:
Method 1: Direct Cell Editing - Double-click on the cell that contains the information to be changed.
Method 2: Formula Bar Editing - Edit the entry in the formula bar
Click the cell that contains the information to be deleted. Press the Delete key, or Right-click and choose Clear Contents from the shortcut menu.

To Undo Recent Actions (typing, formatting, etc), One at a Time: Click the ⤺ Undo button.

To Undo Several Recent Actions at Once: Click the arrow next to the Undo button. Select the desired Undo operation(s) from the list

To Redo an Undo Operation: Press the ⤻ Redo button.
To Redo several recent Undo actions at once: Click the arrow next to Redo button. Select the desired Redo operation from the list. Microsoft Excel reverses the Undo operation.
Selecting Multiple Cells
The currently-selected cell in Excel is called the active cell. You can also select a group of adjacent cells, or a cell range. Many operations can be done against a cell range: move it, copy, it, delete it or format it.
To Select All Cells in a Column or Row:
Click the gray Column heading to select the entire column. (Click and drag the cursor across other column headings to select those columns
Click the gray Row heading to select the entire row. (Click and drag the cursor down through the row headings select those rows

To Select the Entire Worksheet: Click the gray rectangle in the upper left corner to select entire worksheet.
Cut , Copy & Paste
The Cut, Copy and Paste buttons are located on the Standard toolbar. The Cut, Copy and Paste operations also appear as choices in the Edit menu. The Cut, Copy and Paste operations can also be performed through shortcut keys: ctrl+c, ctrl+v, ctrl+x.
Copy - The Copy feature allows you to copy selected information from the spreadsheet and temporarily place it on the Clipboard, which is a temporary storage file in your computer's memory. The Paste feature allows you to select any of the collected items on the Clipboard and paste it in a cell of the same or different spreadsheet.
Cut and Paste Cell Contents - The Cut feature allows you to remove information from cells in the spreadsheet. Information that is cut can be pasted in another cell, as long as the pasting occurs before you perform another operation. If you don't paste the cut information immediately, it is removed from the Office clipboard.
Moving Information Using Drag-and-Drop
Another way to move information from one cell to another is to use the drag-and-drop method. You use the cursor to point to the information to be moved and then drag the cell to its new location.
Formula - A formula can be a combination of values (numbers or cell references) and math operators (+, -, /, *, =) into an algebraic expression.

To Create a Simple Formula that Adds the Contents of Two Cells:

- Type the numbers you want to calculate in separate cells (for example, type 128 in cell B2 and 345 in cell B3).
- Click the cell where the answer will appear (B4, for example).
- Type the equal sign (=) to let Excel know a formula is being defined.
- Type the cell number that contains the first number to be added (B2, for example).
- Type the addition sign (+) to let Excel know that an add operation is to be performed.
- Type the cell number that contains the first number to be added (B3, for example).
- Press Enter or click the Enter button on the Formula bar to complete the formula

To Create a Simple Formula using the Point and Click Method:
- Click the cell where the answer will appear (B4, for example).
- Type the equal sign (=) to let Excel know a formula is being defined.
- Click on the first cell to be included in the formula (B3, for example).
- Type the subtraction sign (-) to let Excel know that a subtraction operation is to be performed.
- Click on the next cell in the formula (B2, for example).

Complex Formulas Defined
Simple formulas have one mathematical operation. Complex formulas involve more than one mathematical operation. The order of mathematical operations is very important. If you enter a formula that contains several operations--like adding, subtracting and dividing, The order of operations is:
- Operations enclosed in parenthesis
- Exponential calculations (to the power of)
- Multiplication and division, whichever comes first
- Addition and subtraction, whichever comes first

Filling Formulas to Other Cells
The fill formula method allows you to copy a formula and fill it into many different consecutive cells at the same time.The mouse pointer changes to a black crosshair when passed over the fill handle, or the square box in the lower right corner of the cell.

To Use the Fill Handle to Copy a Formula to a Surrounding Cell:
- Click on the cell that contains the formula to be copied.
- Position the mouse pointer over the fill handle.
- Click and hold the left mouse button, and then drag the contents to the cell that's to receive the fill formula.
- Release the mouse button.
- Select the Copy Cells option in the fill formula drop-down menu.

Using Functions
A function is a pre-defined formula that helps perform common mathematical functions. Functions save you the time of writing lengthy formulas. You could use an Excel function called Average, for example, to quickly find the average of range of numbers. Or you could use the Sum function to find the sum of a cell range. Excel contains many different functions. Each function has a specific order, called syntax, which must be strictly followed for the function to work correctly.

Syntax Order:
- All functions begin with the = sign.
- After the = sign define the function name (e.g., Sum).
- If there is more than one argument, separate each by a comma.
An example of a function with one argument that adds a range of cells, B3 through B10:

=SUM(B3:B10)

equal sign   function name   argument
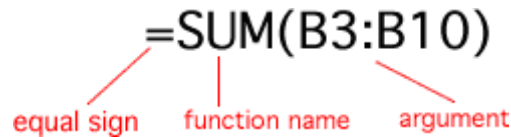
An example of a function with more than one argument that calculates the average of numbers in a range of cells, B3 through B10, and C3 through C10:

=AVG(B3:B10, C3:C10)

equal sign   function name   argument
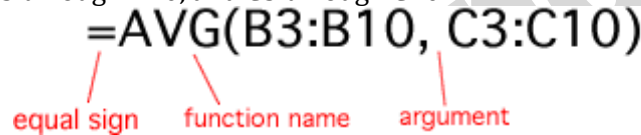
Excel literally has hundreds of different functions to assist with your calculations. There are many different functions in Excel 2003. Some of the more common functions include:

Statistical Functions:
- SUM - summation adds a range of cells together.
- AVERAGE - average calculates the average of a range of cells.
- COUNT - counts the number of chosen data in a range of cells.
- MAX - identifies the largest number in a range of cells.
- MIN - identifies the smallest number in a range of cells.

Financial Functions:
- Interest Rates
- Loan Payments
- Depreciation Amounts

Date and Time functions:
- DATE - Converts a serial number to a day of the month
- Day of Week
- DAYS360 - Calculates the number of days between two dates based on a 360-day year
- TIME - Returns the serial number of a particular time
- HOUR - Converts a serial number to an hour
- MINUTE - Converts a serial number to a minute
- TODAY - Returns the serial number of today's date
- MONTH - Converts a serial number to a month
- YEAR - Converts a serial number to a year

To Name a Worksheet:- Double-click the sheet tab to select it. The text is highlighted by a black box.
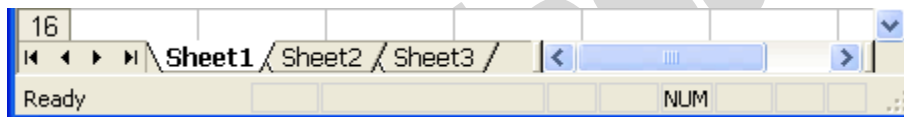
Type a new name for the worksheet.
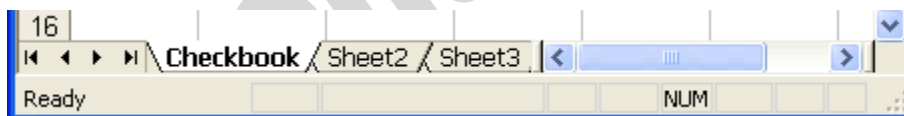
Press the Enter key.
The worksheet now assumes the descriptive name defined.

Inserting Worksheets

45, Anurag Nagar, Behind Press Complex, Indore (M.P.) Ph.: 4262100, www.rccmindore.com

By default, each new workbook in Excel defaults to three worksheets named Sheet1, Sheet2 and Sheet3. You have the ability to insert new worksheets if needed or delete others you no longer want.

To Insert a New Worksheet:

Choose Insert → Worksheet from the menu bar.
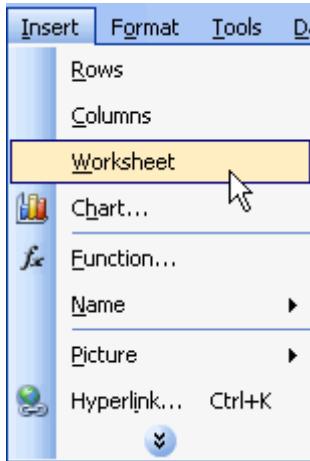
A new worksheet tab is added to the bottom of the screen. It will be named Sheet4, Sheet5 or whatever the next sequential sheet number may be in the workbook.

Deleting Worksheets - Any worksheet can be deleted from a workbook, including those that have data in it. Remember, a workbook must contain at least one worksheet.

Click on the sheet(s) you want to delete. Choose Edit → Delete Sheet from the menu bar.
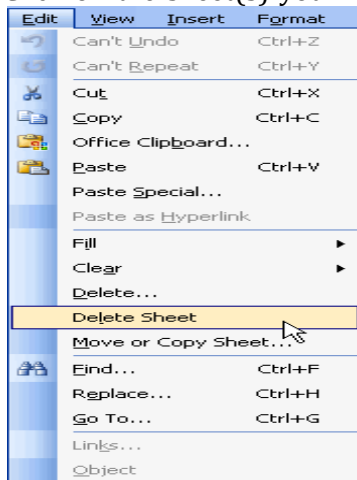
The following dialog box appears if the sheet being deleted contains information on it. Click the Delete button to remove the worksheet and all the data in it.

Moving Worksheets

When you move a sheet, you are moving it to a new location in this or another workbook.

Select the worksheet you want to move/copy. Choose Edit ➔ Move or Copy from the menu bar.
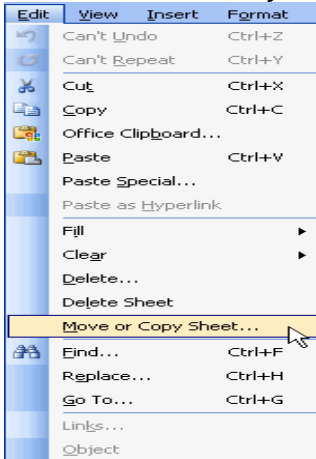
In the Move or Copy dialog box, use the drop down boxes to select the name of the workbook you will move the sheet to (the current workbook is the default). Also define where you want the sheet positioned in the workbook.
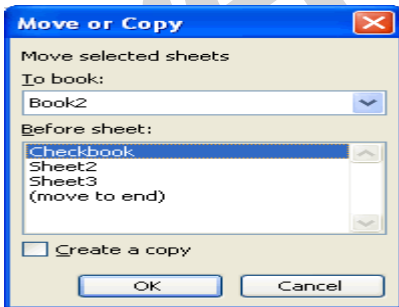
Click the OK button to move the worksheet to its new location.

Copying Worksheets
- Select the worksheet you want to move/copy.
- Choose Edit ➔ Move or Copy from the menu bar.
- In the Move or Copy dialog box, use the drop down boxes to select the name of the workbook you will copy the sheet to (the current workbook is the default). Also define where you want the sheet positioned in the workbook.
- Click the Create a copy checkbox.
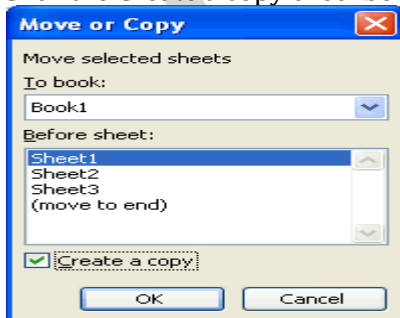
- Click OK to create an exact copy of the worksheet and move it to the location specified.

Inserting a row
- Click anywhere in the row below where you want to insert the new row.
- Choose Insert ➔ Rows from the menu bar.

OR
- Click anywhere in the row below where you want to insert the new row.
- Right-click and choose Insert from the shortcut menu.

To Insert a Column:

Click anywhere in the column where you want to insert a new column. Choose Insert → Columns from the menu bar.
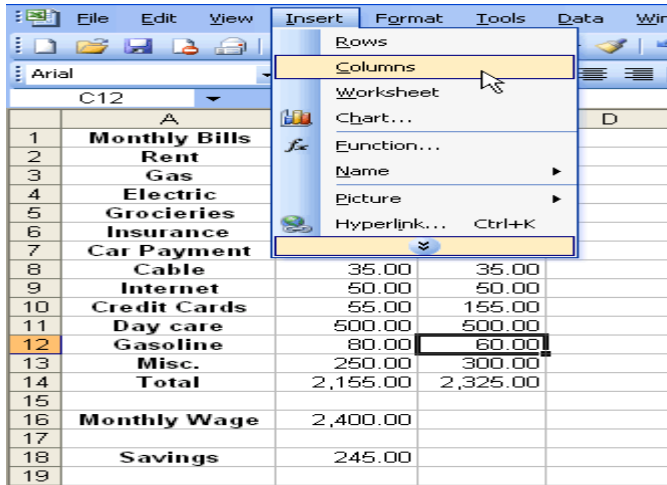
A new column is inserted to the left of the existing column.

OR

- Click anywhere in the column where you want to insert a new column.
- Right-click and choose Insert from the shortcut menu.

Deleting columns and rows

- Select a cell in the row to be deleted.
- Choose Edit → Delete from the menu bar.
- Click the Entire Row radio button in the Delete dialog box.
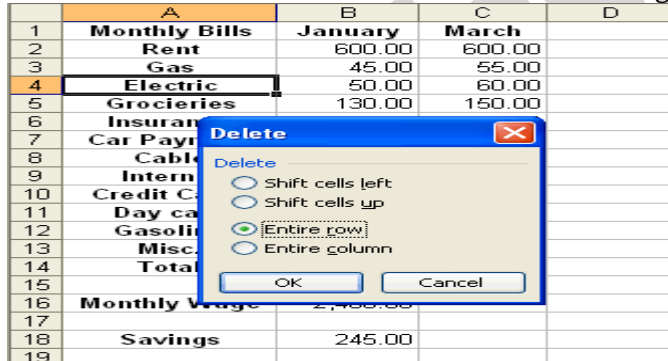
- Click the OK button.

To Delete a Column and All Information in it:

- Select a cell in the column to be deleted.
- Choose Edit → Delete from the menu bar.
- Click the Entire Column radio button in the Delete dialog box. Click the OK button.

Adjusting column widths

By default, Excel's columns are 8.43 characters wide, but each individual column can be enlarged to 240 characters wide.

✓ You can adjust column width manually or use AutoFit.

To Manually Adjust a Column Width:
- Place your mouse pointer to the right side of the gray column header.
- The mouse pointer changes to the adjustment tool (double-headed arrow).

Adjusting row height
- Place your mouse pointer to the lower edge of the row heading you want to adjust.
- The mouse pointer changes to the adjustment tool (double-headed arrow).

Drag the Adjustment tool up or down to the desired height and release the mouse button.

To AutoFit the Row Height:
- Place your mouse pointer to the lower edge of the row heading you want to adjust.
- The mouse pointer changes to the adjustment tool (double-headed arrow).
- Double-click to adjust the row height to "AutoFit" the font size.

Understanding the Different Chart Types
Area Chart - An area chart emphasizes the trend of each value over time. An area chart also shows the relationship of parts to a whole.
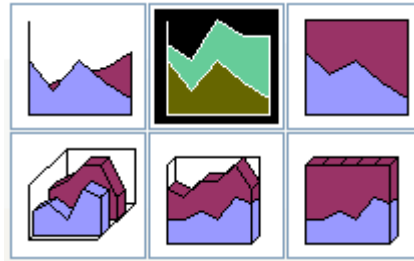
Column Chart - A column chart uses vertical bars or columns to display values over different categories. They are excellent at showing variations in value over time.
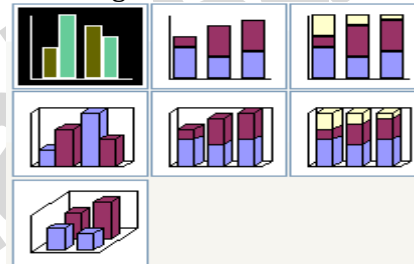

Bar Chart - A bar chart is similar to a column chart except these use horizontal instead of vertical bars. Like the column chart, the bar chart shows variations in value over time.
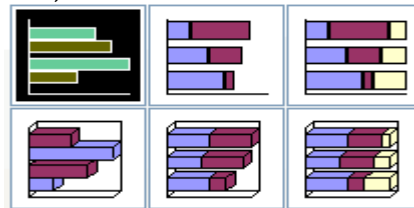
Line Chart - A line chart shows trends and variations in data over time. A line chart displays a series of points that are connected over time.
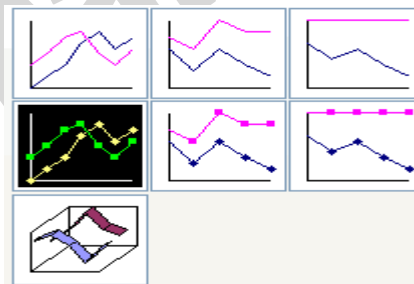
Pie Chart - A pie chart displays the contribution of each value to the total. Pie charts are a very effective way to display information when you want to represent different parts of the whole, or the percentages of a total.
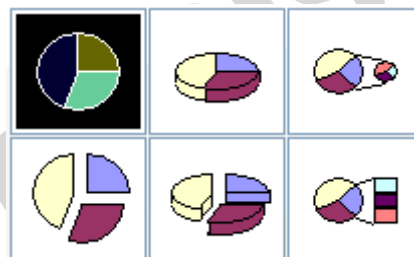
Other charts that can be created in Excel include: Doughnut; Stock XY (scatter); Bubble; Radar; Surface; or Cone, Cylinder, and Pyramid charts..

The AutoFilter feature makes filtering, or temporarily hiding, data in a spreadsheet very easy. This allows you to focus on specific spreadsheet entries.

To Use AutoFilter:

Select Data from the main menu.

Select Filter → AutoFilter.

Click the drop-down arrow next to the heading you would like to filter.

For example, if you would like to only view data from the West Sales Region, click the drop-down arrow next to Sales Region.

Choose the data you would like to display.

In this example, you would choose West. All other data will be filtered, or hidden, and only the West Sales Region data is visible.

➢ Click the drop-down arrow again and select All to display all of your original data.

Sorting lists is a common spreadsheet task that allows you to easily reorder your data. The most common type of sorting is alphabetical ordering, which you can do in ascending or descending order.

In this example, we will alphabetize the employee names.

To Sort in Ascending or Descending Order:

Select Data from the main menu.

Select Sort. The Sort dialog box will appear.

Select the category you would like to Sort by.

Select Ascending to sort in alphabetical order from A to Z.

Click OK.

➤ To sort in reverse alphabetical order from Z to A, select Descending.

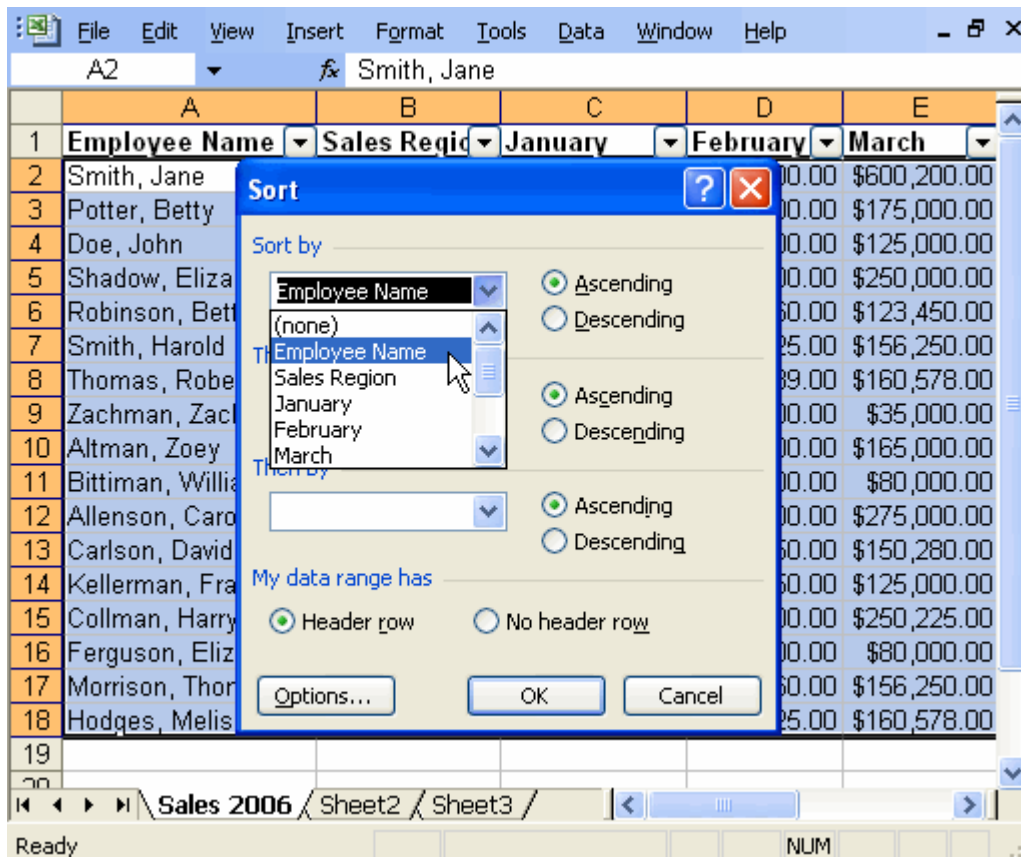To Sort Multiple Categories:
Select Data from the main menu.
Select Sort. The Sort dialog box will appear.
Select the category you would like to Sort by.
Select Ascending to sort in alphabetical order from A to Z.
In the Then by section, select the second category you would like to sort.

Click OK to sort in alphabetical order and by sales region.
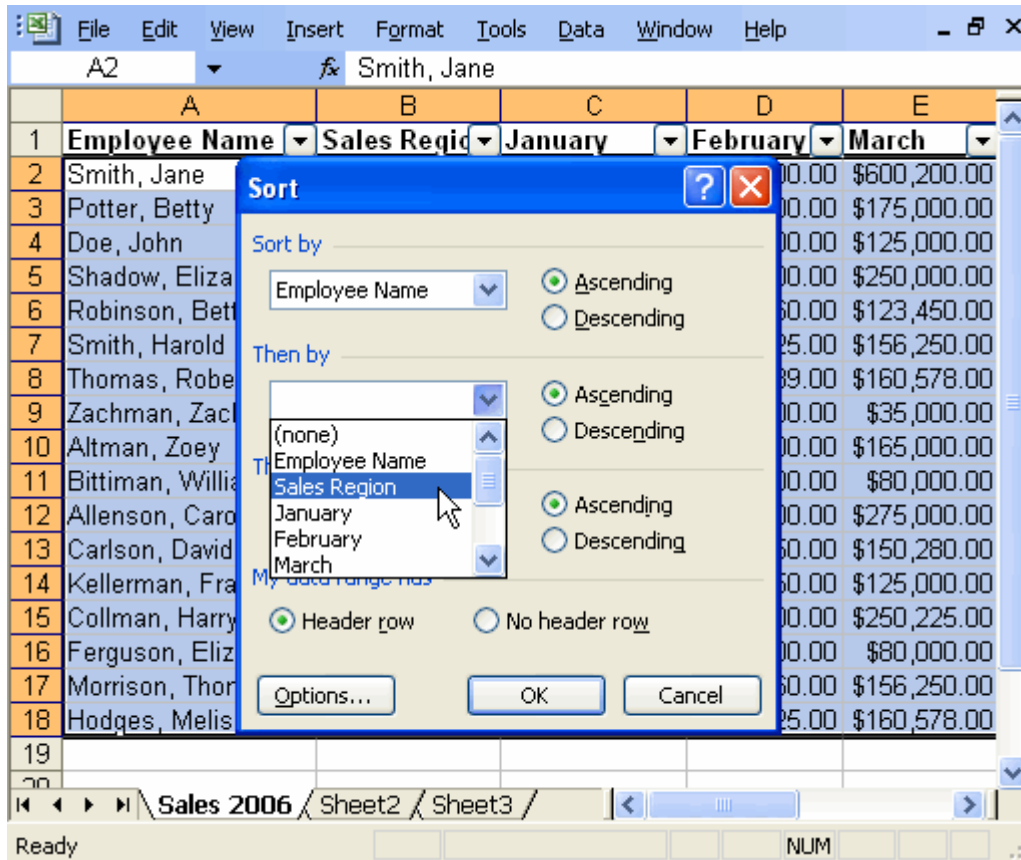
Relative & Absolute Cell References

Excel uses two types of cell references to create formulas. Each has its own purpose. Read on to determine which type of cell reference to use for your formula.

Relative Cell References

This is the most widely used type of cell reference in formulas. Relative cell references are basic cell references that adjust and change when copied or when using AutoFill.

Example:

=SUM(B5:B8), as shown below, changes to =SUM(C5:C8) when copied across to the next cell.

	C9	=	=SUM(C5:C8)
	A	B	C
1			Smith's Bo
2			Septemb
3			
4	Region	Books	Periodicals
5	North	$15,678	$8,796
6	South	$13,865	$9,776
7	East	$25,401	$11,392
8	West	$18,552	$4,928
9	Product Total	$73,496	$34,892

Absolute Cell References

Situations arise in which the cell reference must remain the same when copied or when using AutoFill. Dollar signs are used to hold a column and/or row reference constant.

Example:

In the example below, when calculating commissions for sales staff, you would not want cell B10 to change when copying the formula down. You want both the column and the row to remain the same to refer to that exact cell. By using B10 in the formula, neither changes when copied.

	A	B	C
1	Commissions - November 2000		
2			
3		Total Sales	Commission
4	Bob	26,000	=B4*B10
5	Sally	35,350	
6	Joseph	42,000	
7	Celia	28,800	
8			
9			
10	Rate:	10%	

	C5	=	=B5*B10
	A	B	C
1	Commissions - November 2000		
2		Cell B10 does not change	
3		Tot: when filled.	
4	Bob	26,000	2600
5	Sally	35,350	3535
6	Joseph	42,000	4200
7	Celia	28,800	2880
8			
9			
10	Rate:	10%	

Microsoft PowerPoint

Microsoft PowerPoint is a slide-based presentation program developed by Microsoft. It was officially launched on May 22, 1990, as a part of the Microsoft Office suite.

Originally designed for the Macintosh computer, the initial release was called "Presenter", developed by Dennis Austin and Thomas Rudkin of Forethought, Inc.In 1987; it was renamed to "PowerPoint" due to problems with trademarks,

Versions:
Versions for Microsoft Windows include:
- 1990 PowerPoint 2.0 for Windows 3.0
- 1992 PowerPoint 3.0 for Windows 3.1
- 1993 PowerPoint 4.0 (Office 4.x)
- 1995 PowerPoint for Windows 95 (version 7.0; Office 95)
- 1997 PowerPoint 97 (version 8.0; Office 97)
- 1999 PowerPoint 2000 (version 9.0; Office 2000)
- 2001 PowerPoint 2002 (version 10; Office XP)
- 2003 Office PowerPoint 2003 (version 11; Office 2003)
- 2007 Office PowerPoint 2007 (version 12; Office 2007)
- 2010 PowerPoint 2010 (version 14; Office 2010)
- 2013 PowerPoint 2013 (version 15; Office 2013)

Slide Masters and Templates

Slide Masters are used to create consistent layouts throughout your presentation. Using masters you can format titles, backgrounds, colors, dates, times, and slide numbers. Changes made to the Master Slide and the Master Layouts are applied to all slides with that layout.
Changing to the Slide Master View
To edit the Slide Masters, click on the **View tab** and click the **Master Slide button** under the **Presentation Views group**.

A **Slide Master tab** will appear next to the Home tab, and the slide sidebar on the left will display your presentation's Master Slide along with its accompanying layouts.
To return to the normal view click on **Close Master View**.

Modifying a Slide Master
Once in the Master View, you can modify the Master Slides like any other slide. You can change the size and placement of placeholders, change the font, background, colors, etc.
To change the theme and theme settings for your slide master use the options under the Edit Theme group, just as you would modify Theme settings from the Normal View.

Adding & Deleting Layout Slides
Different layouts will be available under the Master Slide depending on the Theme of your presentation. If you wish to add a new layout slide to an existing Master, either click the **Insert Layout button** in the **Edit Master group** or right-click in the slide sidebar and choose **Insert Layout**. A new slide will appear in the sidebar.
To delete a layout, select the layout slide and either use the **Delete button** in the **Edit Master group**, or right-click the slide in the sidebar and select **Delete Layout**.
Creating a New Slide Master Template
To create a new template using Master Slides, either clicks the **Insert Slide Master button** in the **Edit Master group**, or **right-click** in the slide sidebar and choose **Insert Master Slide**.

Saving a Slide Master as a Template
To save your Master Slide and Layouts as a template:
- Click on the **Office button** and choose **Save As**.
- In the File name box rename the template or keep the suggested name
- In the **Save as type** menu choose **PowerPoint Template (*.potx)**
- Click **Save**.

Toolbars:
Home Tab
The Home tab includes basic functions for creating and manipulating a presentation. The toolbars that make up the Home tab include Clipboard, Slides, Font, Paragraph, Drawing, and Editing.

Insert Tab
Use the Insert tab to add a wide variety of content into a presentation including tables, charts, images, links, text boxes, audio, and video.

Design Tab
The Design tab provides a variety of options for designing and formatting a presentation. Use the Design tab to manipulate the page setup, color themes, and backgrounds of a presentation. The toolbars that make up the Design tab include Page Setup, Themes, and Background.

Animations Tab
Use the Animations tab to add, customize, and preview animations and transitions between slides. The toolbars that make up the Animations tab include Preview, Animations, and Transition to This Slide.

Slide Show Tab
Manage the settings for showing a presentation with the Slide Show tab. The toolbars that make up the Slide Show tab include Start Slide Show, Set Up, and Monitors.

Review Tab
The Review tab provides access to proofing features like spell check and also allows for embedding comments in a presentation. The toolbars that make up the Review tab include Proofing and Comments.

View Tab
The View tab presents a number of options to specify how to view a presentation such as hiding or displaying notes, hiding or displaying gridlines, zooming in and out, displaying in gray scale, and more. The toolbars that make up the View tab include Presentation Views, Show/Hide, Zoom, Color/Grayscale, Window, and Macros.

Create a New Presentation
To create a new presentation, click the **Microsoft Office** button and select **New**. The New Presentation pop-up window will appear. From here, choose to start with one of Microsoft's Installed Templates, Installed Themes, or a Blank presentation to create a customized presentation.

Design a Presentation
PowerPoint includes a number of ready-made design themes. These themes serve as the basis for the graphic design of a presentation. Each theme consists of a background design, placeholder layouts, a color palette, and font styles.

Insert a New Slide
To insert a new slide into a presentation, click the **Home** tab in the ribbon. In the Slides toolbar, select the **New Slide** button.

Save the Presentation
To save a presentation, click the **Microsoft Office** button and choose **Save As**.

View :-

The View buttons appear near the bottom of the screen. The diiffrent View options:- Normal view, Slider Sorter view, and the Slide Show view.

Normal View 🖼️

      Normal view splits your screen into three major sections: the Outline and Slides tabs, the Slide pane, and the Notes area. The Outline and Slides tabs are on the left side of your window. They enable you to shift between two different ways of viewing your slides. The Slides tab shows thumbnails of your slides.

Slide Sorter View 🔳

      Slide Sorter view shows thumbnails of all your slides. In Slide Sorter view, you can easily add, delete, or change their order of your slides.

Slide Show 🖥️

      Use the Slide Show view when you want to view your slides, as they will look in your final presentation.

Zoom:-

Zoom ⊖———▽——⊕ allows you to zoom in and zoom out on the window. Zooming in means the window gets larger so you focus in on an object. Zooming out means the window gets smaller so you can see the entire window.

Editing and Formatting Text:-

To enter text:
- Select the slide where you want the text
- Click in a Textbox to add text

To select the text:
- Highlight the text by dragging the mouse.

**Copy and Paste**

To copy and paste data:
- Select the text that you wish to copy
- On the **Clipboard Group** of the **Home Tab**, click **Copy**
- Select the text where you would like to copy the data
- On the **Clipboard Group** of the **Home Tab**, click **Paste**

To delete the text:
- Highlight the text by dragging
- Click delete.

Formatting:-

To format your text, first select it. Once the text you wish to format is highlighted, use the options in the **Font** and **Paragraph** groups under the **Home** tab to format your text.
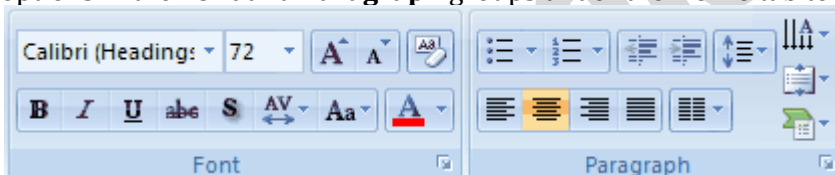
You can format a text box using the following:-
- Ribbon
- Quick Menu

You can use formatting features to change the following:-

- To change the font typeface
- To change the font size
- Font Styles and Effects
- Change Text Color
- WordArt
- Change Paragraph Alignment
- Indent Paragraphs
- Text Direction

Find and select option:
Find option is used to find the text within the presentation. Select option provides three options to select the text they are:-
Select All
Select Text
Select Text With Similar Formatting Features

Bullets and Numbered list option:-
Bulleted lists have bullet points, numbered lists have numbers, and outline lists combine numbers and letters depending on the organization of the list.
To add a list to existing text:
- Select the text you wish to make a list
- Click the Bulleted or Numbered Lists button

To create a new list:
- Place your cursor where you want the list in the document
- Click the Bulleted or Numbered Lists button
- Start typing

Nested Lists
A nested list is list with several levels of indented text. To create a nested list:
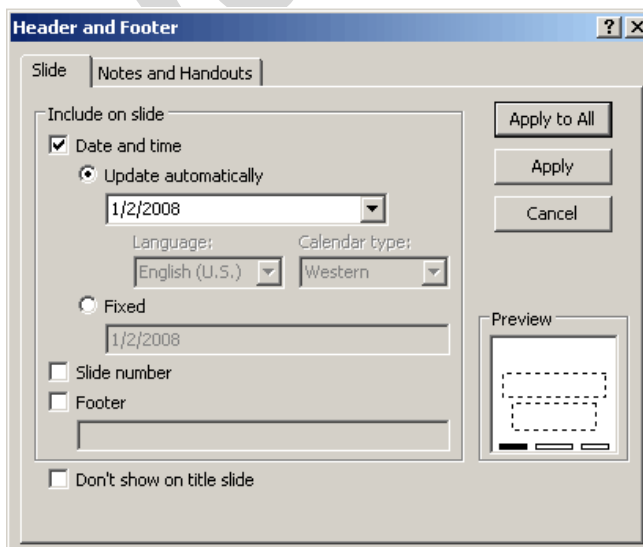- Create your list following the directions above
- Click the Increase or Decrease Indent button

Header and Footer option

To add a header and footer in your presentation:-
Click on the **Insert** tab, then on the **Header & Footer** button.
The **Date & Time** and **Slide Number** buttons will bring up the same dialog box.
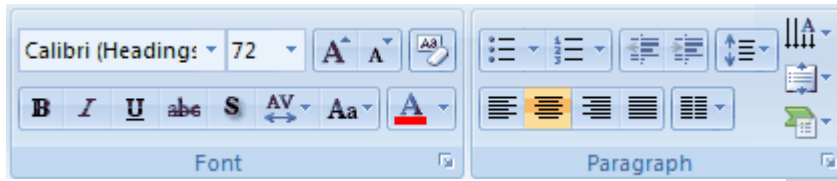

1. Fixed and Automatic Dates
2. Slide Number
3. Footer
4. Apply/Apply To All
5. Preview
6. Notes and Handouts

You can add the text in footer box.

Paragraph Formatting

To format your text, first select it. Once the text you wish to format is highlighted, use the options in the **Font** and **Paragraph** groups under the **Home** tab to format your text.

You can use paragraph formatting features to change the following:-

Change Paragraph Alignment:-
Choose the appropriate button for alignment on the Paragraph Group.
- **Align Left:** the text is aligned with your left margin
- **Center:** The text is centered within your margins
- **Align Right:** Aligns text with the right margin
- **Justify:** Aligns text to both the left and right margins.

Indent Paragraphs
- Click the Indent buttons to control the indent.
- Click the Indent button repeated times to increase the size of the indent.

Text Direction
- Click the Text Direction button on the Home tab
- Click the selection

Spell Check
To check the spelling in a presentation:
- Click the **Review** tab
- Click the **Spelling** button

Print a Presentation
There are many options for printing a presentation. They are:
- **Slides**: The slides that you can, one slide per page
- **Handouts**: 1, 2, 3, 4, 6 or 9 per page, in this option you can see more than one slide on one page.
- **Notes Page**: This option contain the slides and the speaker notes.
- **Outline View**: This will print the outline of the presentation.

Inserting option in PowerPoint presentation:-

Adding Picture
To add a picture:
- Click the **Insert** Tab
- Click the **Picture** Button
- Browse to the picture from your files
- Click the **name** of the picture
- Click **insert**
- To move the graphic, click it and drag it to where you want it.

Adding Clip Art
To add Clip Art:
- Click the **Insert** Tab
- Click the **Clip Art** Button
- Search for the clip art using the search Clip Art dialog box

45, Anurag Nagar, Behind Press Complex, Indore (M.P.) Ph.: 4262100, www.rccmindore.com

- Click the **clip art**
- To move the graphic, click it and drag it to where you want it

Editing Pictures and Clip Art

when you add a graphic to the presentation, an additional Tab appears on the Ribbon. The Format Tab allows you to format the pictures and graphics. This tab has four groups:

- **Adjust**
  Picture Style
- **Arrange**
- **Size**

You can create your own simple shapes and objects with the built in drawing tools. You can even add formatting effects to your shapes, including resizing, rotating, 3D effects such as shadows and beveling, and changing the color of all or part of the shape.

Drawing Preset Shapes

In the Insert command tab, the Shapes group contains several categories of shapes, including lines, basic shapes, block arrows, flowchart elements, stars and banners, and callouts.

Drawing Custom Shapes

To draw your own shapes you can use the freehand drawing tools, Curve, Freeform and Scribble.

Create a Chart

To create a chart:
- Click the **Insert** tab on the ribbon
- Click the type of **Chart** you want to create
- Insert the **Data** and **Labels**

Edit Chart Data

To edit chart data:
- Click on the chart
- Click **Edit Data** on the Design tab
- Edit data in the spreadsheet

Modify a Chart

once you have created a chart you can do several things to modify the chart.
To move the chart:
- Click the **Chart** and Drag it another location on the same slide, or
- **Copy** it to another slide
- Choose the desired location and click **Paste**

Slide Sorter

The **Slide Sorter** is very useful feature, it help designer to check overall design of the presentation.
Slide sorter feature are helpful to:
- View slides as small thumbnails or miniature images
- Create animated transitions between slides
- Rearrange the order of the slides in your PowerPoint presentation
- Rehearse and set the timings of slide timings in your presentation

Slide Transitions

Transitions are effects that are in place when you switch from one slide to the next. To add slide transitions:
- Select the slide that you want to transition
- Click the **Animations** tab
- Choose the appropriate animation or click the **Transition** dialog box

To adjust slide transitions:
- Add sound by clicking the arrow next to **Transition Sound**

Modify the transition speed by clicking the arrow next to **Transition Speed**
To apply the transition to all slides:
- Click the **Apply to All** button on the **Animations** tab

To select how to **advance a slide**:
- Choose to **Advance on Mouse Click**, or
- Automatically after a set number of seconds

Slide Animation
Slide animation effects are predefined special effects that you can add to objects on a slide. To apply an animation effect:
- Select the object
- Click the **Animations** tab on the Ribbon
- Click **Custom Animation**
- Click **Add Effect**
- Choose the appropriate effect

Animation Preview
To preview the animation on a slide:
- Click the **Preview** button on the **Animations** tab

Slide Show Options
The Slide Show tab of the ribbon contains many options for the slide show. These options include:
- Preview the slide show from the beginning
- Preview the slide show from the current slide
- Set up Slide Show

Set Up Slide Show
This option allows you to set preferences for how the slide show will be presented. The options include:
- Whether the show will run automatically or will be presented by a speaker
- The looping options
- Narration options
- Monitor resolutions

UNIT V

Introduction: - the internet is a global network of interconnected computers, enabling users to share information along multiple channels. Typically a computer that connects to the internet can access information from a vast array of available servers and other computers by moving information from them to the computer's local memory.

Define internet

From a social point of view – the internet is a device through which millions of people are communicating and sharing their idea and information.

From a technical point of view – the internet is a network of thousands of computer networks. Together the networks making up the internet consist of over a mullion computer systems.

Owner of internet: - the internet has no president nor has it a CEO the ultimate authority on the internet is the internet society, which is a voluntary membership organization whose purpose is to promote global information exchange through the internet technology.

Application of internet:-
1. Business on internet
2. Governance on/through internet
3. Crime on internet
4. Educational training
5. Research

Advantages of internet:
1. Information

2. Entertainment
3. Services
4. News
5. E-commerce
6. Communication
7. Formation of communities

Disadvantages:
1. Spamming
2. Theft of personal details
3. Pornography
4. Virus threat
5. Waste of time and money

World Wide Web (WWW):

The World Wide Web is the universe of network-accessible information; an embodiment of human knowledge. In simple terms, The World Wide Web is a way of exchanging information between computers on the Internet, tying them together into a vast collection of interactive multimedia resources.World Wide Web is a series of servers that are interconnected through hypertext. Tim burner lee is widely known as the father of the World Wide Web.

PROTOCOLS: -

TCP/IP: - it stands for transmission control protocol/internet protocols. It is the communication protocols for communication between computers connected to the network specially internet.TCP/IP is divided into four layer
- Network layer
- Transport layer
- Internet
- Application

HTTP (HYPER TEXT TRANSFER PROTOCOL) : -
The HTTP provides a set of instructions for accurate information exchange. The communication between the client(your browser) and the server involvers request sent by the client and responses from the server.

FTP (FILE TRANSFER PROTCOL) : –
File transfer protocol is a network protocol used to exchange and manipulate files over as TCP computer network, such as the internet. An FTP client may connect to an FTP server to manipulate files on that server.

INTERNET SERVICE PROVIDER (ISP):-
A company that provides internet access is known as internet service provider. A ISP charge for its services. In general ISPs take two types of fees:
- ❖ A charge for using the internet
- ❖ A charge for a physical connection to the internet

Use charges are billed at a fixed rate, ISPs do discriminate among classes of users. An ISP might provide dial up access, a cable connection, an ADSL connection or other types of internet access. In India there are more than 150 ISPs (including BSNL, Airtel , etc)

Kinds of connection

Dialup accounts: this is the slowest kind of connection currently available. Also your telephone line stays in use until you terminate the connection, implying that if your telephone bill is calculated according to the time of use.

LEASED LINE: Uses fully digital signals over copper phone wire, a standard telephone line. This means there is no conversion from digital to analog and back again in manner that an analog modem works.

VSAT: -

very small aperture terminal, an earthbound station used in satellite communications of data, voice and video signals, excluding broadcast television. A VSAT consists of two parts, a transceiver that is placed outdoors in direct line of sight to the satellite and a device that is placed indoors to interface the transceiver with the end user's communications device, such as a PC. The transceiver receives or sends a signal to a satellite transponder in the sky. The satellite sends and receives signals from a ground station computer that acts as a hub for the system. Each end user is interconnected with the hub station via the satellite, forming a star topology. The hub controls the entire operation of the network. For one end user to communicate with another, each transmission has to first go to the hub station that then retransmits it via the satellite to the other end user's VSAT.

Broadband: includes serveral transmission technologies, such as digital subscriber Line(DSL),cable , wireless ,satellite.

URL (Uniform resource locator) :- URL is a type of uniform resource identifier that specifies where an identified resource is available and the mechanism for retrieving it.
There are several parts to a URL. The first part of a URL defines a web protocol, such as the hypertext transfer protocol (HTTP) ,this part of URL(eg http://) allows the machines to talk to one another , the complete URL specifies the name of a server or a path to a web resource on a server, which a user can access by using browsers like Firefox, Opera , and Internet Explorer.

Domain name systems(DNS): -
It is an internet engineering task force(IETF) standard name service that allows your computer to register and resolve domain names. In other words DNS is a system that translates domain names into IP address. This is necessary because computers only make use of IP address yet we use only readable names since the name are easier to remember than IP address.

Categories : -
1. .com   for commercial purpose like www.thinkdigital.com
2. .edu   for education domains like www.amity.edu
3. .net   for network, internet service provider and other network related companies like www.att.net
4. .org   for non government organization and non commercial like www.cry.org
5. .mil   for the united state military.

Country level domain: - it is reserve for country. For example .in for India, .uk for united kingdom, .pk for Pakistan.

PORTALS:
A web portals is a site that functions as a point of access to information on the WWW. Portals present information from diverse sources in a unified way. Popular portals are MSN , Yahoo and AOL.

ADVANTAGES: -

- ❖ Intelligent integration and access to enterprise content , applications and proceses.
- ❖ Unified , real time access to information available in different systems.

TYPES OF PORTALS: -

- ❖ Regional portals
- ❖ Government portals
- ❖ Corporate portals
- ❖ Entertainment portals
- ❖ Investment portals
- ❖ Shopping portals

Email basic :
Email is a method of exchanging digital messages , designed primarily for human use. A message at least consists of its content , an author address and one of more recipient addresses. The foundation for today's global internet email service was created in the early Arpanet an was codified as a standard for encoding of messages , as RFC 733.

Features of email :
1. Address book
2. Statistics
3. Sorting or mails
4. Security
5. Edfit/draft option
6. File attachment
7. Reply/forward option

Working of email –
Email is based around the use of electronic mailboxes. When an email is sent, the message is routed from server to server, all the way to the recipient's email server.the message is sent to the mail server tasked with transporting emails (called the MTA, for Mail Transport Agent) to the recipient's MTA. On the Internet, MTAs communicate with one another using the protocol SMTP, and so are logically called SMTP servers (or sometimes outgoing mail servers).
The recipient's MTA then delivers the email to the incoming mail server (called the MDA, for Mail Delivery Agent), which stores the email as it waits for the user to accept it. There are two main protocols used for retrieving email on an MDA:
POP3 (Post Office Protocol), the older of the two, which is used for retrieving email and, in certain cases, leaving a copy of it on the server.
 IMAP (Internet Message Access Protocol), which is used for coordinating the status of emails (read, deleted, moved) across multiple email clients. With IMAP, a copy of every message is saved on the server, so that this synchronization task can be completed. To keep everyone from checking other users' emails, MDA is protected by a user name called a login and by a password. Retrieving mail is done using a software program called an MUA (Mail User Agent). When the MUA is a program installed on the user's system, it is called an email client (such as Mozilla Thunderbird, Microsoft Outlook, Eudora Mail, Incredimail or Lotus Notes).

Types of email –
1. Marketing Emails : - Marketing (or Bulk) emails stimulate your clients and leads. They contain informative / incentive messages. The recipient must agree to receive such emails: opt-in is mandatory.
   Examples : - Newsletters , Flash sales , Sales/promotions announcements

2. Notification Emails:- Notification email are also known as trigger, alert or auto-responder. They allow the user to be notified each time a particular event happens (or has happened). More generally, the notification email may be used in order to celebrate and/or mark an event.
   Examples: - getting in touch a few days after registration , Congratulations after a status change (first purchase, subscription...) , Birthday email , Shopping Cart Abandonment email

3. Transactional Emails: - This is an expected message and its content is information that the client wishes to check or confirm, and not "discover". This type of email is not intended to optimize the customer relationship but to define it and mark it out. It is a point of reference in one's CRM.
   Examples; - Welcome message / Account opening , Shipment tracking and order status , Order shipment confirmation , Account termination

Free email sites are : -
www.google.com
www.yahoo.com
www.rediff.com
www.indiatimes.com
www.mail.com
www.inbox.com

Simple Mail Transfer Protocol (SMTP) :-
The Simple Mail Transfer Protocol (SMTP) service, which transfers e-mail, is installed as part of E-mail Services, along with the POP3 service.

SMTP controls how e-mail is transported and then delivered across the Internet to the destination server. The SMTP service sends and receives e-mail between servers, whereas the POP3 service retrieves e-mail from the mail server to the user's computer. For more information, see the SMTP documentation Microsoft SMTP Service.

Pop3(post office protocol) : - the post office protocol is an application layer protocol used by local email client s to retrive email from a remote server ovr a TCP/IP connection. The POP protocol has been devoloped through serveral versions. With version 3 being the current standard .like IMAP , POP3 is supported by most webmail services such as hotmail, gmail. And yahoo mail.

Virus :-
A computer virus is a program or piece of code that is loaded onto your computer without you knowledge an runs against your wishes. All computer virus are man made.
A few prominent virus are Michelangelo, dishwasher, C-brain , macmag , nenusalem , columbus etc.

How a virus spread :
1. Using a paired device
2. Through network system
3. Through secondary storage devices
4. Through internet
   Types of computer virus : -
   1. Boot sector virus - these types of viruses get themselves stored in th boot sector of floopy and hard disk. When we boot a computer system it hinders the loading of oprating system.

2. Partition table virus – these kind of viruses affect the partition table of hard disk but do not affect the data in the computer.it only affects MBR(master boot record) of the hard disk.
3. File virus- this kind of virus get associated with executable files. When an EXE file is executed , virus may executes to affect the computer system.
4. Stealth virus – a stealth virus is a computer virus that makes every effort to conceal its presence from the user.
5. Polymorphic virus – a polymorphic virus is one that is capable of changing itself so that each infection of the virus is completely different from the original.
6. Macro virus – a macro virus is a virus specially meant to infect specific type of file such as document file and spreadsheet file.

Antivirus : - a utility software that searches a hard disk for viruses and removes any that are found. Most antivirus programs include an auto update feature that enables the program to download profiles of nes virus so that it can check for the new viruses as soon as they are discovered.
Some popular antivirus are NPAV, Quick heal ,Avast and Mac fee etc.

Internet browsers:
Internet browser or web browser are softwares that allow you to explore the net. These are actually client programs and are capable to display and interact with hypertext document. These softwares are especially designed for the web use.
There are two types of browsers text based browser and graphical browser. Graphical browser supports multimedia like text, video, animation, audio etc.
Some popular browsers are –
❖ Microsoft Internet Explorer
❖ Netscape Navigator
❖ Mozila Firefox
❖ Google Chrome
❖ Opera