Computer🡺Computer is an advanceElectronic device that takes raw data as input from the user and processes this data under the control of set of instructions (called program) and gives the result (output) and store output for the future use. It can process both numerical and non-numerical (arithmetic and logical) calculations. The device also has memory that stores the data, programs and result of processing.

It is believed that Analytical Engine was the first computer. It was invented by Charles Babbage in 1837. Charles Babbage is also considered as the father of computer.

# **History of Computers**

The first counting device was used by the primitive people. They used sticks, stones and bones as counting tools. As human mind and technology improved with time more computing devices were developed. Some of the popular computing devices starting with the first to recent ones are described below;

## **Abacus**

The history of computer begins with the birth of abacus which is believed to be the first computer. It is said that Chinese invented Abacus around 4,000 years ago.

It was a wooden rack which has metal rods with beads mounted on them. The beads were moved by the abacus operator according to some rules to perform arithmetic calculations. Abacus is still used in some countries like China, Russia and Japan.

## **Napier's Bones**

It was a manually-operated calculating device which was invented by John Napier (1550-1617) of Merchiston. In this calculating tool, he used 9 different ivory strips or bones marked with numbers to multiply and divide. So, the tool became known as "Napier's Bones. It was also the first machine to use the decimal point.

## **Pascaline**

Pascaline is also known as Arithmetic Machine or Adding Machine. It was invented between 1642 and 1644 by a French mathematician-philosopher Biaise Pascal. It is believed that it was the first mechanical and automatic calculator.

Pascal invented this machine to help his father, a tax accountant. It could only perform addition and subtraction. It was a wooden box with a series of gears and wheels. When a wheel is rotated one revolution, it rotates the neighboring wheel. A series of windows is given on the top of the wheels to read the totals. An image of this tool is shown below;

## **Stepped Reckoner or Leibnitz wheel**

It was developed by a German mathematician-philosopher Gottfried Wilhelm Leibnitz in 1673. He improved Pascal's invention to develop this machine. It was a digital mechanical calculator which was called the stepped reckoner as instead of gears it was made of fluted drums. See the following image;

## **Difference Engine**

In the early 1820s, it was designed by Charles Babbage who is known as "Father of Modern Computer". It was a mechanical computer which could perform simple calculations. It was a steam driven calculating machine designed to solve tables of numbers like logarithm tables.

## **Analytical Engine**

This calculating machine was also developed by Charles Babbage in 1830. It was a mechanical computer that used punch-cards as input. It was capable of solving any mathematical problem and storing information as a permanent memory.

**TABULATING MACHINE**

It was invented in 1890, by Herman Hollerith, an American statistician. It was a mechanical tabulator based on punch cards. It could tabulate statistics and record or sort data or information. This machine was used in the 1890 U.S. Census. Hollerith also started the Hollerith’s Tabulating Machine Company which later became International Business Machine (IBM) in 1924.

**DIFFERENTIAL ANALYZER**

It was the first electronic computer introduced in the United States in 1930. It was an analog device invented by Vannevar Bush. This machine has vacuum tubes to switch electrical signals to perform calculations. It could do 25 calculations in few minutes.

**MARK I**

The next major changes in the history of computer began in 1937 when Howard Aiken planned to develop a machine that could perform calculations involving large numbers. In 1944, Mark I computer was built as a partnership between IBM and Harvard. It was the first programmable digital computer.

**GENERATIONS OF COMPUTERS**

A generation of computers refers to the specific improvements in computer technology with time. In 1946, electronic pathways called circuits were developed to perform the counting. It replaced the gears and other mechanical parts used for counting in previous computing machines.

In each new generation, the circuits became smaller and more advanced than the previous generation circuits. The miniaturization helped increase the speed, memory and power of computers. There are five generations of computers which are described below;

**FIRST GENERATION COMPUTERS**

The first generation (1946-1959) computers were slow, huge and expensive. In these computers, vacuum tubes were used as the basic components of CPU and memory. These computers were mainly depended on batch operating system and punch cards. Magnetic tape and paper tape were used as output and input devices in this generation;

Some of the popular first generation computers are;

o ENIAC ( Electronic Numerical Integrator and Computer)

o EDVAC ( Electronic Discrete Variable Automatic Computer)

o UNIVACI( Universal Automatic Computer)

o IBM-701

o IBM-650

**SECOND GENERATION COMPUTERS**

The second generation (1959-1965) was the era of the transistor computers. These computers used transistors which were cheap, compact and consuming less power; it made transistor computers faster than the first generation computers.

In this generation, magnetic cores were used as the primary memory and magnetic disc and tapes were used as the secondary storage. Assembly language and programming languages like COBOL and FORTRAN, and Batch processing and multiprogramming operating systems were used in these computers.

Some of the popular second generation computers are;

o IBM 1620

o IBM 7094

o CDC 1604

o CDC 3600

o UNIVAC 1108

**THIRD GENERATION COMPUTERS**

The third generation computers used integrated circuits (ICs) instead of transistors. A single IC can pack huge number of transistors which increased the power of a computer and reduced the cost. The computers also became more reliable, efficient and smaller in size. These generation computers used remote processing, time-sharing, multi programming as operating system. Also, the high-level programming languages like FORTRON-II TO IV, COBOL, PASCAL PL/1, ALGOL-68 were used in this generation.

Some of the popular third generation computers are;

o IBM-360 series

o Honeywell-6000 series

o PDP(Personal Data Processor)

o IBM-370/168

o TDC-316

**FOURTH GENERATION COMPUTERS**

The fourth generation (1971-1980) computers used very large scale integrated (VLSI) circuits; a chip containing millions of transistors and other circuit elements. These chips made this generation computers more compact, powerful, fast and affordable. These generation computers used real time, time sharing and distributed operating system. The programming languages like C, C++, DBASE were also used in this generation.

Some of the popular fourth generation computers are;

o DEC 10

o STAR 1000

o PDP 11

o CRAY-1(Super Computer)

o CRAY-X-MP(Super Computer)

**FIFTH GENERATION COMPUTERS**

In fifth generation (1980-till date) computers, the VLSI technology was replaced with ULSI (Ultra Large Scale Integration). It made possible the production of microprocessor chips with ten million electronic components. This generation computers used parallel processing hardware and AI (Artificial Intelligence) software. The programming languages used in this generation were C, C++, Java, .Net, etc.

Some of the popular fifth generation computers are;

o Desktop

o Laptop

o NoteBook

o UltraBook

o ChromeBook

On the basis of data handling capabilities, the computer is of three types:

* Analogue Computer
* Digital Computer
* Hybrid Computer

## **1) Analogue Computer**

Analogue computers are designed to process the analogue data. Analogue data is continuous data that changes continuously and cannot have discrete values such as speed, temperature, pressure and current.

The analogue computers measure the continuous changes in physical quantity and generally render output as a reading on a dial or scale.

Analogue computers directly accept the data from the measuring device without first converting it into numbers and codes.

Speedometer and mercury thermometer are examples of analogue computers.

## **2) Digital Computer**

Digital computer is designed to perform calculations and logical operations at high speed. It accepts the raw data as digits or numbers and processes it with programs stored in its memory to produce output. All modern computers like laptops and desktops that we use at home or office are digital computers.

## **3) Hybrid Computer**

Hybrid computer has features of both analogue and digital computer. It is fast like analogue computer and has memory and accuracy like digital computers. It can process both continuous and discrete data. So it is widely used in specialized applications where both analogue and digital data is processed. For example, a processor is used in petrol pumps that converts the measurements of fuel flow into quantity and price.

**On the basis of size**, the computer can be of five types:

## **1) Supercomputer**

Supercomputers are the biggest and fastest computers. They are designed to process huge amount of data. A supercomputer can process trillions of instructions in a second. It has thousands of interconnected processors.

Supercomputers are particularly used in scientific and engineering applications such as weather forecasting, scientific simulations and nuclear energy research. First supercomputer was developed by Roger Cray in 1976.

## **2) Mainframe computer**

Mainframe computers are designed to support hundreds or thousands of users simultaneously. They can support multiple programs at the same time. It means they can execute different processes simultaneously. These features of mainframe computers make them ideal for big organizations like banking and telecom sectors, which need to manage and process high volume of data.

## **3) Miniframe computer**

It is a midsize multiprocessing computer. It consists of two or more processors and can support 4 to 200 users at one time. Miniframe computers are used in institutes and departments for the tasks such as billing, accounting and inventory management.

## **4) Workstation**

Workstation is a single user computer that is designed for technical or scientific applications. It has faster microprocessor, large amount of RAM and high speed graphic adapters. It generally performs a specific job with great expertise; accordingly, they are of different types such as graphics workstation, music workstation and engineering design workstation.

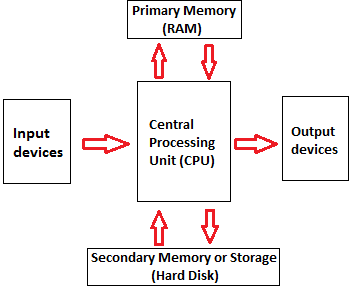
## **5) Microcomputer**

Microcomputer is also known as personal computer. It is a general purpose computer that is designed for individual use. It has a microprocessor as a central processing unit, memory, storage area, input unit and output unit. Laptops and desktop computers are examples of microcomputers.

# **Computer Components**

There are 5 main computer components that are given below:

* Input Devices
* CPU
* Output Devices
* Primary Memory
* Secondary Memory



The operations of computer components are given below:

**1) Inputting:** It is the process of entering raw data, instructions and information into the computer. It is performed with the help of input devices.

**2) Storing:** The computer has primary memory and secondary storage to store data and instructions. It stores the data before sending it to CPU for processing and also stores the processed data before displaying it as output.

**3) Processing:** It is the process of converting the raw data into useful information. This process is performed by the CPU of the computer. It takes the raw data from storage, processes it and then sends back the processed data to storage.

**4) Outputting:** It is the process of presenting the processed data through output devices like monitor, printer and speakers.

**5) Controlling:** This operation is performed by the control unit that is part of CPU. The control unit ensures that all basic operations are executed in a right manner and sequence.

# **Input Devices**

Input device enables the user to send data, information or control signals to computer. Central processing unit of computer receives the input and processes it to produce output.

Some of the popular input devices are:

1. Keyboard
2. Mouse
3. Scanner
4. Joystick
5. Light Pen
6. Track ball
7. Digitizer
8. Microphone
9. Magnetic Ink Character Recognition (MICR)
10. Optical Character Reader (OCR)

# **Output Devices**

Output device displays the result of processing of raw data that is entered in computer through an input device. There are number of output devices that display output in different ways such as text, images, hard copies and audio or video.

Some of the popular output devices are:

1. Monitor
   * CRT Monitor
   * LCD Monitor
   * LED Monitor
   * Plasma Monitor
2. Printer
   * Impact Printers
     1. Character Printers
        1. Dot Matrix printers
        2. Daisy Wheel printers
     2. Line printers
        1. Drum printers
        2. Chain printers
   * Non-impact printers
     1. Laser printers
     2. Inkjet printers
3. Projector

# **Central Processing Unit (CPU)**

Central processing unit carries out all important functions of a computer. It receives instructions from both the hardware and active software and produces output accordingly. It is also called processer, central processor and microprocessor. It stores all important programs like operating system and application software. It also helps Input and output devices to communicate with each other.

Generally, a CPU has three components:

* ALU (Arithmetic Logic Unit)
* Control Unit
* Memory or Storage Unit

**Memory:** It is called Random access memory (RAM). It temporarily stores data, programs and intermediate and final results of processing.

**Control Unit:** It controls and coordinates the functioning of all parts of computer. It does not involve in processing and storing data.

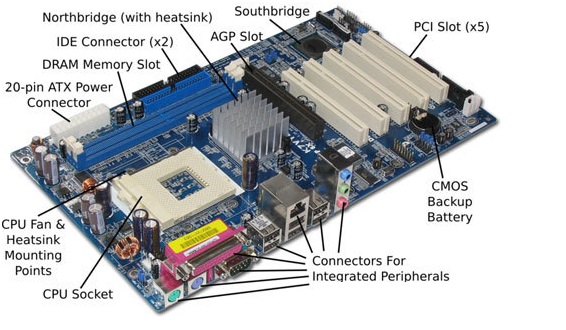
**ALU:** It performs arithmetic and logical functions. Arithmetic functions include addition, subtraction, multiplication and division. Logical functions mainly include selecting, comparing and merging the data.

# **Hardware**

All tangible physical components of computer and the devices connected to it are hardware. Some of the popular examples of computer hardware are CPU, motherboard, monitor, mouse and keyboard.

## **Motherboard**

Motherboard is generally a thin circuit board that holds together almost all parts of computer except input and output devices. All crucial hardware like CPU, memory, hard drive and ports for input and output devices are located on the motherboard. It allocates power to all hardware located on it and enables them to communicate with each other.



## **Monitor**

It is the display unit of the computer. It is the basic output device that renders the processed data as text, images, audio or video.

## **Keyboard**

It is the basic input device that is used to input data into the computer. It has different sets of keys to enter numbers, characters and symbols.

## **Mouse**

It is an input device that is used to point to or select objects on the display screen of computer.

# **Software**

Software consists a sequence of instruction to perform a particular task. The software is the instruction that makes the computer work.. All the programs that run the computer are software. Software is of two types; system software and application software.

## **1) System Software**

System software is the main software that runs the computer. When you turn on the computer it activates the hardware and controls and coordinates their functioning. The application programs are also controlled by system software. Operating system is an example of system software.

## **Operating System**

Operating system is the system software that works as an interface to enable the user communicate with the computer. It manages and coordinates the functioning of hardware and software of the computer. The commonly used operating systems are Microsoft Windows, Linux and Apple Mac OS X

**There are three types of the operating system---**

1. **Single user and single tasking operating system. Ex-Dos**
2. **Single user and multi-tasking operating system. Ex-windows xp, windows 98**
3. **Multiuser and multi-tasking operating system. Ex-windows 2000, windows 2003 server**

## **2) Application Software**

Applications software is a set of programs designed to perform a specific task. It does not control or coordinate the working of computer. A computer can run without application software. Application software can be easily installed or uninstalled as required. Microsoft Office Suite, Adobe Photoshop and any other software like payroll software or income tax software are application software.

The application software are two types :-

1)Generalized Packages🡺These are user friendly software’s written to cater to user’s very general needs such as preparing documents, drawing pictures, database to manage data/information, preparing presentations, play games etc. It is a group of programs that provide general purpose tools to solve specific problems. Some of the generalized packages are listed below:

* Word Processing Software(for preparing documents): WordPerfect, MS-Word, OpenOffice.org Writer
* Spreadsheets (Data Analysis): Lotus Smart suites, MS-Excel, OpenOffice.org Calc, Apple Numbers
* Presentations : Presentation Graphics, MS-PowerPoint,OpenOffice.org Impress
* Database Management System’s-Access, OpenOffice.org Base, MS-SQLServer, ORACLE
* Graphics Tools: Paint shop pro, Adobe Photoshop

2)Customized Packages🡺These are the applications that are customized (or developed) to meet the specific requirements of an organization/institution. For Example: Student information details, Payroll packages, inventory control etc. These packages are developed using high-level computer language.

COMPUTER LANGUAGES🡺Languages are a means of communication. Normally people interact with each other through a language. On the same pattern, communication with computers is carried out through a language. This language is understood both by user and the machine. Just as every language like English, Hindi has its grammatical rules; every computer language is bound by rules known as SYNTAX of that language. The user is bound by that syntax while communicating with the computer system.

Computer languages are broadly classified as:

1. Low Level Language🡺the term low level means closeness to the way in which machine understand. The low level languages are:

a. Machine Language🡺This is the language (in the form of 0’s and 1’s, called binary numbers) understood directly by the computer. It is machine dependent. It is difficult to learn and even more difficult to write programs.

b. Assembly Language🡺 This is the language where the machine codes comprising of 0’sand 1’s are substituted by symbolic codes (called mnemonics) to improve their understanding. It is the first step to improve programming structure.

Assembly language programming is simpler and less time consuming than machine level programming, it is easier to locate and correct errors in assembly language than in machine

language programs. It is also machine dependent. Programmers must have knowledge of the machine on which the program will run.

2. High Level Language🡺 you know that low level language requires extensive knowledge of the hardware since it is machine dependent. To overcome the limitation, high level language has been evolved which uses normal English like, easy to understand statements to solve any problem. Higher level languages are computer independent and programming becomes quite easy and simple. Various high level languages are given below:

1. BASIC (Beginners All Purpose Symbolic Instruction Code):

It is widely used, easy to learn general purpose language.

Mainly used in microcomputers in earlier days.

1. COBOL (Common Business Oriented language): A

Standardized language used for commercial applications.

1. FORTRAN (Formula Translation): Developed for solving

Mathematical and scientific problems. One of the most

Popular languages among scientific community.

1. C:- Structured Programming Language used for all purpose

Such as scientific application, commercial application,

Developing games etc.

1. C++:- Popular object oriented programming language, used

for general purpose.

COMPILER AND ASSEMBLER🡺 As you know that High Level language is machine independent and assembly language though it is machine dependent yet mnemonics that are being used to represent instructions are not directly understandable by machine. Hence to make the machine understand the instructions provided by both the languages, Compiler and Assembler are required to convert these instructions into machine language.

The software (set of programs) that reads a program written in high level language and translates it into an equivalent program in machine language is called as Compiler.

The program written by the programmer in high level language is called source program and the program generated by the compiler after translation is called as object program.

**Compiler**

Source Program Object Program

(High Level Language) (Machine Language)

The software (set of programs) that reads a program written in assembly language and translates it into an equivalent program in machine language is called as Assembler.

Source Program Object Program

(Assembly Language) (Machine Language)

**Assembler**

# **Computer Memory**

The computer memory holds the data and instructions needed to process raw data and produce output. The computer memory is divided into large number of small parts known as cells. Each cell has a unique address which varies from 0 to memory size minus one.

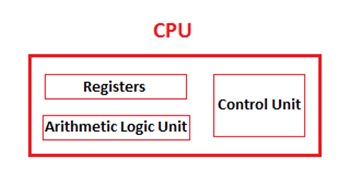
Computer memory is of two types: Volatile (RAM) and Non-volatile (ROM). The secondary memory (hard disk) is referred as storage not memory.

But, if we categorize memory on behalf of space or location, it is of four types:

* Register memory
* Cache memory
* Primary memory
* Secondary memory

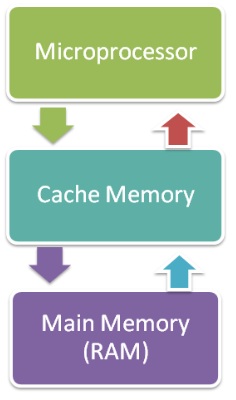
# **Register Memory**

Register memory is the smallest and fastest memory in a computer. It is located in the CPU in the form of registers. A register temporarily holds frequently used data, instructions and memory address that can be quickly accessed by the CPU.



# **Cache Memory**

It is small in size but faster than the main memory. The CPU can access it more quickly than the primary memory. It holds the data and programs frequently used by the CPU. So if the CPU finds the required data or instructions in cache memory it doesn't need to access the primary memory (RAM). Thus, it speeds up the system performance.



# **Primary Memory**

Primary Memory is of two types: RAM and ROM.

## **RAM (Volatile Memory)**

It is a volatile memory. It means it does not store data or instructions permanently. When you switch on the computer the data and instructions from the hard disk are stored in RAM.

CPU utilizes this data to perform the required tasks. As soon as you shut down the computer the RAM loses all the data.

## **ROM (Non-volatile Memory)**

It is a non-volatile memory. It means it does not lose its data or programs that are written on it at the time of manufacture. So it is a permanent memory that contains all important data and instructions needed to perform important tasks like the boot process.

# **Secon dary Memory**

The storage devices in the computer or connected to the computer are known as secondary memory of the computer. It is non-volatile in nature so permanently stores the data even when the computer is turned off. The CPU can't directly access the secondary memory. First the secondary memory data is transferred to primary memory then CPU can access it.

The hard disk, optical disk and pen drive are some of the popular examples of secondary memory or storage of computer.

## **Hard disk**

It isn a rigid magnetic disc that is used to store data. It permanently stores data and is located within a drive unit.

## **Optical disk**

It has a plastic coating. The data in optical disc is recorded digitally and the recorded data is read with laser that scans its surface.

## **Pen drive**

It is a compact secondary storage device. It is connected to a computer through a USB port to store or retrieve data.

# **Memory Units**

Memory units are used to measure and represent data. Some of the commonly used memory units are:

1) **Bit:** The computer memory units start from bit. A bit is the smallest memory unit to measure data stored in main memory and storage devices. A bit can have only one binary value out of 0 and 1.

2) **Byte:** It is the fundamental unit to measure data. It contains 8 bits or is equal to 8 bits. Thus a byte can represent 2\*8 or 256 values.

3) **Kilobyte:** A kilobyte contains 1024 bytes.

4) **Megabyte:** A megabyte contains 1024 kilobytes.

5) **Gigabyte:** A gigabyte contains 1024 megabyte.

6) **Terabyte:** A terabyte contains 1024 gigabytes

# **Computer Network**

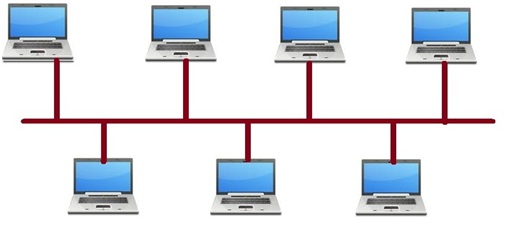
A network set up by connecting two or more computers through communication channels is called computer network. It enables computers communicate with each other and to share commands, data and hardware and software resources.

The popular computer networks are:

* Local Area Network (LAN)
* Metropolitan Area Network (MAN)
* Wide Area Network (WAN)

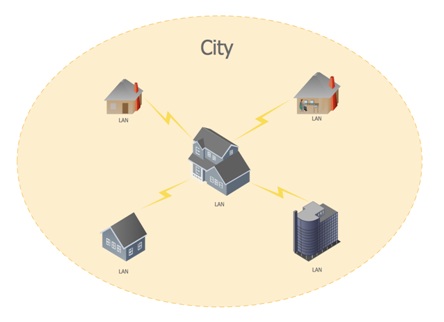
## **Local Area Network (LAN)**

As the name suggests, the local area network is confined to small geographical area like within an office, company, school or any other organization. Ethernet cables are used to set up LAN.



## **Metropolitan Area Network (MAN)**

Metropolitan area network extends over a metropolitan area like a city or town. It is set up by connecting the local area networks of the city or town. It is ideal for the people of a particular region to share data or information.



## **Wide Area Network (WAN)**

Wide area network covers large geographical area. It is not confined within office, school or a town. It is mainly set up by telecommunication lines. Big organizations like banks and multinational companies communicate with their branches and customers through WAN. Internet that we use is also a WAN.



**MICROSOFT DISK OPERATING SYSTEM**

**To open Microsoft disk operating system**

**Start-all programs-accessories-command prompt**

**Or**

**Start-run-type cmd/command/command.com**

1. **To back in main drive :- cd\**
2. **To back to step by step :-cd..**
3. **To clear the screen :-cls**
4. **To show the date :- date**
5. **To show the time :- time**
6. **To show the version :-ver**
7. **To show the volume :- vol**
8. **To make a directory:- md directory name**
9. **To enter the directory :- cd directory name**
10. **To create a file :- copy con file name.txt**

**type something and press f6 to save the file**

1. **To show the file :- type file name.txt**
2. **To edit the file :- edit file name.txt**

**type something and save this file and exit**

1. **To show the directory :- dir**
2. **To show the all hidden files :- dir/ah**
3. **To show the without hidden files :- dir/a-h**
4. **To show the all read only files :- dir/ar**
5. **To show the without read only files :- dir/a-r**
6. **To show the all system files :- dir/as**
7. **To show the without system files :- dir/a-s**
8. **To show the file ascending order by name :-dir/on**
9. **To show the file descending order by name :-dir/o-n**
10. **To show the file ascending order by size :-dir/os**
11. **To show the file descending order by size :-dir/o-s**
12. **To show the file ascending order by extension name :-dir/oe**
13. **To show the file descending order by extension name :-dir/o-e**
14. **To show the file ascending order by date :-dir/od**
15. **To show the file descending order by date :-dir/o-d**
16. **To rename a file :- ren old file name new file name**
17. **To remove a directory :- rd directory name**
18. **To delete a file :- del file name.txt**
19. **To copy a file one drive to another drive :- copy source file path target file path**
20. **To copy a file same drive but another directory :- xcopy source file path target file path**
21. **To move a file with directory at same drive :-move source file path target file path**
22. **To attribute a file :- attrib (attribute) file name.txt**

**attribute command :- +h 🡺to create hidden**

**-h🡺to create non- hidden**

**+r 🡺to create read only**

**-r 🡺to remove read only**

1. **Prompt :- this command is used to change our current prompt**

**Prompt (text)**

**$$ 🡺‘$’ sign**

**$Q🡺 ‘=’ sign**

**$T 🡺 ‘to show the current time’**

**$D🡺 ‘to show the current date’**

**$P🡺 ‘to show the current drive and path’**

**$V🡺 ‘to show the version number’**

**$G🡺 ‘>’ sign**

**$L🡺 ‘<’ sign**

**$B🡺 ‘|’ sign**

**$P$G 🡺 ‘to back in main drive’**

**36) To create a batch file :- make a program and run this program**

**Copy con file name.bat**

**Date**

**Time**

**Ver**

**Vol**

**Color 1**

**Pause**

**Color 2**

**Pause**

**Color 3**

**Pause**

**Color 4**

**Pause**

**Color 5**

**Pause**

**Color 6**

**Pause**

**Color 7**

**And press F6 to save the file**

1. **To run the batch file :- file name.bat**

**HTML 🡺 HYPERTEXT MARKUP LANGUAGE**

**<HTML>**

**<HEAD>**

**<TITTLE>**

**THIS IS MY FIRST PAGE**

**</TITTLE>**

**</HEAD>**

**<BODY BGCOLOR=ANY COLOR>**

**<MARQUEE><B><I><U>TYPE SOMETHING**

**<FONT SIZE=14PT>**

**</BODY></MARQUEE></B></I></U></FONT>**

**</HTML>**

**To save the file 🡺filename:- any file name.html and save as type :- change to all file**

**to open Microsoft word**

**start🡺all programs🡺microsoft office🡺microsoft office word 2007**

**or**

**start🡺run🡺type winword🡺ok**

**OFFICE BUTTON**

**1)NEW:-to create a new file**

**Office button🡺new🡺blank document🡺create/ctrl+n**

**2)OPEN:-to open an existing document**

**Office button🡺open🡺select a file🡺open/ctrl+o**

**3)SAVE :-to store the document in hard disk**

**Office button🡺save🡺select a location🡺type a file name🡺save/ctrl+s**

**4)SAVE AS:-to store the same file in different location or different name use save as**

**Office button🡺save as🡺type a new name or select a new location🡺 save**

**5)PRINT:-to print a document**

**Office button🡺print🡺select a printer name🡺select a page range🡺type no of**

**copies🡺print/ctrl+p**

**6)PRINT PREVIEW:-to see the file before printing**

**Office button🡺print🡺print preview**

**7)Prepare:-to use password in a document**

**Office button🡺prepare🡺encrypt document🡺type a password🡺retype the same password again🡺ok🡺save**

**8)CLOSE:-to exit from MSWord**

**Office button🡺close**

**HOME**

**1)UNDO:-to back to your previous work**

**Home🡺undo typing/ctrl+z**

**2)CUT:-to cut a text**

**select the text🡺Home🡺cut/ctrl+x**

**3)COPY:-to copy a text**

**select the text🡺home🡺copy/ctrl+c**

**4)PASTE:-to paste a document**

**at first cut or copy a text🡺home🡺paste/ctrl+v**

**5)FONT:-to change the font of a text**

**select the text🡺home🡺font🡺choose any font /ctrl+shift+f**

**6)FONT SIZE:-to change the font size of a text**

**select the text🡺home🡺font🡺font size🡺select any font size**

**7)GROW FONT:-to increase the font size**

**select the text🡺click on grow font/ctrl+>**

**8)SHRINK FONT:-to decrease the font size**

**select the text🡺click on shrink font/ctrl+<**

**9)FONT COLOR:-to change the font color**

**select the text🡺Home🡺font🡺font color🡺select any color**

**10)BOLD:-to use bold option**

**select a text🡺home🡺font🡺click on bold option**

**ITALIC:-to use italic option**

**select a text🡺home🡺font🡺click on italic option**

**UNDERLINE:-to use underline option**

**select a text🡺home🡺font🡺click on underline option**

**STRIKETHROUGH:-to use strikethrough option**

**select a text🡺home🡺font🡺click on strikethrough option**

**SUBSCRIPT:-to use subscript option(x2)**

**select a text🡺home🡺font🡺click on subscript option**

**SUPERSCRIPT:-to use superscript option(x2)**

**select a text🡺home🡺font🡺click on superscript option**

**CHANGE CASE:-to change the case of a text**

**select the text**🡺**home**🡺**font**🡺**change case**🡺**select any case**

**BULLETS:-to use bullets option**

**home🡺paragraph🡺choose any bullets option**

**DECREASE INDENT:-to decrease the indent level of a paragraph**

**select a paragraph🡺 home🡺paragraph 🡺click on decrease indent**

**INCREASE INDENT:-to increase the indent level of a paragraph**

**select a paragraph🡺click on increase indent**

**SORT:-to alphabetize the selected text or sort numerical area**

**select the text🡺click on sort**

**TEXT ALIGNMENT:-to align the text left, center or right**

**home🡺paragraph🡺click on left, center or right**

**LINE SPACING:- to change the space between line and text**

**home🡺paragraph🡺line spacing🡺add or remove the spacing**

**SHADING:-color the background selected text or paragraph**

**select a text or paragraph🡺home🡺paragraph🡺shading🡺select a color**

**BOTTOM BORDER:-customize the border of the selected cells or text**

**select a text🡺home🡺paragraph🡺bottom border🡺select a border**

**FIND:-to find a particular word in a paragraph**

**home🡺editing🡺find/ctrl+f🡺type the text in ‘find what’🡺click on find next**

**REPLACE:-to replace a word with a new word**

**home 🡺editing🡺replace/ctrl+h🡺type the text in ‘find what’ and type the new text in ‘replace with’🡺replace🡺replace all**

**SELECT ALL:-to select the whole document at a time**

**home🡺editing🡺editing🡺select🡺select all**

**INSERT**

**COVER PAGE:-to insert a fully formatted cover page**

**insert🡺cover page🡺select a page**

**BLANK PAGE:-to insert a new blank page**

**insert🡺blank page**

**PAGE BREAK:-to start the new page at the current position**

**Inser t 🡺page break**

**TABLE:-**

**a)to draw a table**

**insert🡺table🡺draw table🡺draw the table**

**b)to insert a table**

**insert🡺table🡺insert table🡺type no. of rows and columns🡺ok**

**c)merge cell:-to merge two or more cell in a table**

**select the cell🡺layout🡺merge cell**

**d)split cell:-to split a cell**

**select a cell🡺split cell🡺type no. of rows and columns🡺ok**

**e)insert below:-to add a new row directly below the selected row**

**select a row🡺layout🡺rows and columns🡺insert below**

**f)insert left:-to add a new column directly left of the selected columns**

**select a row🡺layout🡺rows and columns🡺insert left**

**g)insert above:-to add a new row directly above the selected row**

**select a row🡺layout🡺rows and columns🡺insert above**

**g)insert right:-to add a new column directly in right in the selected columns**

**select a row🡺layout🡺rows and columns🡺insert right**

**i)delete:-to delete row ,columns, cell or table**

**Select row, cell, columns or table🡺layout🡺rows and columns🡺delete🡺select a option**

**j)formula:-to use formula on a table**

**select the cursor on a cell🡺layout🡺data🡺formula🡺type direction with in the bracket(ex:=sum(left/right/below/above))**

**PICTURE:-to insert a picture from a file**

**insert🡺picture🡺select a picture🡺insert**

**CLIP ART:-to insert a clip art**

**insert🡺clip art🡺type a clip art name🡺go🡺click on the clip art**

**SHAPE:-to draw a shape**

**insert🡺shape🡺select a shape🡺draw the shape**

**SMART ART:-to draw a smart art**

**insert🡺smart art🡺select a smart art🡺draw the smart art**

**HYPERLINK:-to create a link between two or more files**

**at first create two files🡺select some text🡺insert🡺links🡺hyperlink🡺browse for file🡺select the other file🡺ok🡺ok🡺ctrl+click on the selected text to run the hyper link**

**BOOKMARK:-to create a bookmark**

**select a text in a paragraph🡺insert🡺links🡺bookmark🡺type a bookmark name🡺add**

**to run the bookmark**

**insert🡺bookmark🡺select the bookmark name🡺go to**

**Header:-to edit the header of a document use header. The contain of the header will appear at the top of each printed page**

**Insert🡺header🡺blank🡺type some text🡺insert some blank page**

**FOOTER:-to edit the footer of a document use footer. The contain of the footer will appear at the bottom of each printed page**

**Insert🡺footer🡺blank🡺type some text🡺insert some blank page**

**PAGE NUMBER:-to insert page number into a document**

**insert🡺page number🡺choose a position of page number 🡺plain number 1**

**TEXT BOX:-to insert or draw a text box**

**insert🡺textbox🡺insert or draw the text box**

**WORD ART:-to insert word art**

**to insert a word art🡺insert🡺word art🡺select a art🡺type a text🡺ok**

**DROP CAP:-to maximize the first character of a paragraph**

**set the cursor on a paragraph🡺insert🡺drop cap🡺dropped/in margin**

**SYMBOL:-to insert a symbol**

**insert🡺 symbol🡺windings🡺select a symbol🡺insert**

**PAGE LAYOUT**

**THEMES:-change the overall design of the entire document, including colors, fonts and effects**

**page layout🡺themes🡺select a theme**

**MARGINS:-select the margin sizes for the entire document or the current section**

**page layout🡺margins🡺select a margin**

**ORIENTATION:-switch the pages between portrait or landscape layouts**

**page layout🡺orientation🡺select portrait or landscape**

**SIZE:-choose a paper size for the current document**

**page layout🡺size🡺select a size**

**COLUMNS:-split text into two or more columns**

**select a paragraph🡺page layout🡺columns🡺more columns🡺type number of columns🡺ok**

**LINE NUMBERS:-add line numbers in the margin alongside each line of the document**

**select a paragraph🡺page layout 🡺line numbers🡺continuous**

**WATERMARK:-insert ghosted text behind the content on the page**

**page layout 🡺 watermark🡺custom watermark🡺text watermark🡺type a text 🡺ok**

**PAGE COLOR:-choose a color for the background of the page**

**page layout 🡺page color🡺select a color**

**PAGE BORDER:-add or change the border around the page**

**page layout 🡺page border🡺select a border or art🡺ok**

**INDENT LEFT:-move in the left size of the paragraph by a certain amount**

**page layout🡺indent🡺left**

**INDENT RIGHT:- move in the right size of the paragraph by a certain amount**

**Pagelayout🡺indent🡺right**

**SPECING BEFORE:-change the spacing between paragraphs by adding space above the selected paragraphs**

**page layout🡺spacing🡺 before**

**SPECING AFTER:- change the spacing between paragraphs by adding space below the selected paragraphs**

**page layout🡺spacing🡺after**

**POSITION:- position the selected object on the page**

**at first insert a picture🡺select the picture🡺page layout🡺position🡺select a position**

**REFFERENCES**

**INSERT FOOTNOTE:-to insert foot note**

**select a text 🡺references🡺insert footnote🡺type the footnote**

**MAILINGS**

**MAILMERGE:-type a letter🡺start mail merge🡺step by step mail merge wizard🡺letter🡺next 🡺next🡺type a new list🡺create🡺customize columns🡺add or delete the field names🡺ok🡺type data🡺ok🡺type a file name🡺save🡺ok🡺set the cursor🡺insert merge field🡺select the field🡺insert🡺finish and merge🡺edit individual documents🡺all🡺ok**

**REVIEW**

**SPELLING & GRAMMAR :-to check the spelling and grammar from a documents**

**review🡺spelling & grammar/f7🡺select a suggestion🡺change🡺ok**

**NEW COMMENT:-to insert a new comment**

**select a text🡺review🡺new comment🡺type the comment**

**to permanently hide the comment**

**tracking🡺show markup🡺comments**

**PROTECT DOCUMENT:-to protect a document from wrong entry**

**review🡺protect document🡺restrict formatting and editing🡺editing restriction🡺yes start enforcing protection🡺type password🡺retype the same password again🡺ok**

**to stop the protection🡺click on stop protection🡺type the password**

**VIEW**

**ZOOM:-to specify the zoom level of the document**

**view🡺zoom🡺select a zoom option**

**NEW WINDOW:-to insert a new window**

**view🡺new window**

**ARRANGE ALL:-to arrange two or more document in onescreen**

**view🡺arrange all🡺select a option**

**SPLIT:-to split the current window into two parts**

**view🡺split**

**MACRO:-to create a macro**

**Type a text🡺macro🡺record macro🡺ctrl+a🡺change the formatting🡺macro🡺stop recording**

**To run the macro**

**Take a new window or document🡺view🡺macro🡺view macro🡺select the macro name🡺run**

**HOME**

**BOTTOM BORDER:-customize the border of the selected cells**

**Select a cell🡺fonts🡺bottom border🡺select a border**

**ORIENTATION:-to change the text orientation**

**home🡺alignment🡺orientation🡺format cell alignment🡺change the orientation**

**MERGE CELL:-to merge two or more cell at a time**

**select two or more cell🡺home🡺alignment🡺orientation🡺format cell alignment🡺merge cell🡺ok**

**SH RINK TO FIT:-to condensed a text**

**type a text in a cell🡺 home🡺alignment🡺orientation🡺format cell alignment🡺shrink to fit🡺ok**

**WRAP TEXT:-to wrap a text**

**type a text in a cell🡺 home🡺alignment🡺orientation🡺format cell alignment🡺wrap text🡺ok**

**MERGE &CENTER:-this is use often to create label that’s span multiple columns**

**select some cell 🡺home🡺alignment🡺merge & center🡺select a merge**

**CONDITIONAL FORMATTING**

**.:-highlight interesting cells, emphasize unusual values and visualize data using data bars, color cells and icon sets based on criteria**

**select some data🡺home🡺conditional formatting 🡺select a formatting 🡺fill up the formatting 🡺ok.**

**FORMAT AS TABLE:- quickly format a range of cell and convert it to a table by choosing a pre-defined table style**

**select some cell 🡺home🡺style🡺format as table🡺select a table format**

**CELL STYLES:-quickly format a cell by choosing from pre-defined style**

**select some cell 🡺 home🡺style🡺cell styles🡺select a style**

**INSERT**

**PIVOT TABLE:-pivot tables make it easy to arrange and summarize complicated data and drill down on details**

**insert🡺pivot table🡺select pivot table or pivot chart🡺select some data or click to use an external data source🡺 choose connection 🡺select a file 🡺open**

**CHART:- charts are used to compare values across categories**

**select**

**some data🡺insert🡺chart🡺select a chart type**

**FORMULA**

**1)to calculate total:-**

**=sum(1st cell add :last cell add)**

**2)to calculate average:-**

**=average(1st cell add :last cell add)**

**3)to calculate additional:-**

**=if(addi cell add>34,addi cell add-34+total cell add, totalcealladd)**

**4)to calculate grade**

**=if(average cell add>90,”a+”,if(average cell add>80,”a”,if(average cell add>60,”b”,if(average cell add>40,”c”,”fail”))))**

**5)to calculate power**

**=power(cell add,number)**

**6)to concate two or more cell value**

**=concatenate(1st cell add,2nd cell add)**

**7)to calculate maximum no**

**=max(cell range)**

**8)to calculate minimum no**

**=min(cell range)**

**9)to calculate factorial no**

**=fact(cell add)**

**10)to calculate squre root**

**=sqrt (celladd)**

**11)to count blank cell**

**=countblank(cell range)**

**12)to count char length**

**=len(celladd)**

**13)to calculate ascii value**

**=char(celladd)**

**14)to count no of component**

**=count(cellrange)**

**15)To calculate mod**

**=mod(cell add/divisor)**

**16)to change lower to upper**

**=upper(cell add)**

**17)to change upper to lower**

**=lower(cell add)**

**18)to calculate integer value**

**=int(cell add)**

**19)to use vlookup**

**At first type some data in sheet 1🡪copy some data in sheet 2🡪formula🡪lookup and reference🡪vlookup🡪select the first cell add for lookup value🡪select the sheet 1 total data for table array 🡪type the column index no(count from 1st column as 1)🡪type 0 in range look up🡪ok**

**DATA**

**1.filter:-to view particular data from a table……**

**Select the data🡪data🡪filter**

**2.advance filter(to use condition on filter)**

**Type a criteria range (ex:salary>15000)🡪select the main data🡪data🡪advance filter🡪select criteria for criteria range🡪choose filter the list in place or copy to another location option🡪select a other location🡪ok.**

**3.validation**

**1whole no:-to use number validation in a particular cell range.**

**select some cell🡪data🡪validation🡪whole no🡪type minimum and maximum value🡪ok**

**2.list:-type some source data in other cell.**

**select some cell🡪data🡪validation🡪list🡪select the source option🡪select the source data cell range🡪ok**

**3)NOTEPAD:-to access data from notepad.**

**select some cell🡪data🡪from text🡪delimited🡪select a delimiter(like coma or tab)🡪next🡪ok.**

**View**

**1) Arrangeall:-to arrange two or more worksheet in one screen use arrange all**

**View🡪arrange all🡪select cascade or horizontal or vertical option-ok**

**2) Freezepane:-to freeze top row or first column use freeze pane.**

**Select second row or second column-view🡪freeze panes🡪 freeze pane.**

**3) Save work space:-to save the current layout of all windows as a workspace so that it can be restored later**

**View🡪save workspace🡪save.**

**4)MACRO:-to use macro in excel**

**Type some no in cell🡪view 🡪macro🡪record macro🡪type a shortcut key🡪use a formula🡪stop recording🡪take a new worksheet🡪use shortcut key.**