## Introduction

> The era of 20<sup>th</sup> and 21<sup>st</sup> century has witnessed rapid developments in science and technology influencing every aspect of human life. One of the greatest things that man has ever created is, perhaps, 'the Computer'. The computer is truly an amazing machine. Computer is being used in areas of administration, medicine, education, sports, defence, shops, home, markets and many more. Computer and Information Technology (IT), in recent years, has become an integral part of our life. We can see it almost everywhere.

> A computer is an electronic machine that helps to process data. It is used to solve problems relating to almost all fields such as education, home, medicine, science and technology, research, designing, publishing, communication etc.

> A computer is an information-processing and information-accessing tool. This means that a computer accepts some information or data from the outside world. It processes it to produce a new information.

> Information processing is the essence of computing.

> Meaning of Computer : The word computer has derived from an English word 'Compute', which means 'to calculate'.

> Computer is an electronic device which processes the input informations according to the given set of instructions, called program.

> Blaise Pascal had developed the first mechanical calculator in 1642 AD, which is called 'Pascalene'.

> British scientist Charles Babbage was the first person to conceive an automatic calculator or a computer in 1833. He is called the 'Father of modern computer'.

> The credit of developing first computer program goes to Lady Ada Augusta, a student of Babbage.

> Herman Holorith prepared an electronic tabulating machine in 1880, which was automatically functional with the help of Punch Card. This Punch Card is used in computer even today.

> Howard Ekin developed the first Mechanical Computer 'Mark - I' in 1937.

> J.P. Ekart and John Moschley invented world's first electronic computer 'ENIAC-I' in 1946 and paved the way for first revolution in the field of calculating machine or computer. Electronic Valve or Vaccum Tube was used as a switch in the computer.

> John Van Newman invented EDVAC (Electronic Descrete Variable Computer) in 1951, in which he used Stored Program. The credit of using Binary System in computers also goes to him. Indeed Mr. Newman contributed most in the development of computer and thus gave a right direction to the Computer Revolution (Second Revolution).

## Five Generations of Computer

| Generation | Period | Main Electronic components | Main Computers |
|---|---|---|---|
| I | 1940 - 52 | Electronic Valve Vaccum Tube | EDSAC, EDVAC, UNIVAC |
| II | 1952 - 64 | Transistor | IBM–700, IBM–1401, IBM–1620, CDC–1604, CDC–3600, ATLAS, ICL–1901 |
| III | 1964 - 71 | Integrated Circuit | IBM–360, IBM–370, NCR–395, CDC–1700, ICL–2903 |
| IV | 1971 - | Largely Integrated Circuit | APPLE, DCM |
| V | — | Optical Fibre | |

**Types of Computer :** According to size and capacity these are following types of Computer —

1. **Micro Computer :** These computers are used by individual, thus also called PC or Personal Computer. These days P.Cs are largely used for domestic and official purposes etc.
2. **Mini Computer :** This type of computer is comparatively larger than that of micro computer. This is 5 to 50 times more powerful than that of a Micro Computer.
3. **Main Frame Computer :** These are large sized computers. By Time Sharing and Multi Tasking techniques many people rather more than 100 people can work at a time on different terminals of this computer.
4. **Super Computer :** These are very powerful computers and have more storage capacity. These are the most expensive and the fastest computers, able to process most complex jobs with a very high speed.
5. **Quantum Computer :** The development of this type is in final stage. Probably Quantum Computers will be more advanced than that of human brain. In Quantum Computers Q -Bit will be used in lieu of Binary Bits.

## Programming Languages of different generations

| Generation | Languages |
|---|---|
| 1st Generation (1940-52) | FORTRAN- i |
| 2nd Generation (1952-64) | FORTRAN-ii, ALGOL - 60, COBOL, LISP |
| 3rd Generation (1964-71) | PL / I, ALGOL - W, ALGOL - 68, Pascal, SIMULA - 67, APL, SNOBOL, 4 BASIC, C |
| 4th Generation (1971-—) | CLUE, ALFARD, UCLID, Reformed Pascal, MODULA, EDA, ORACLE |
| 5th Generation (For future) | Artificial Intelligence Languages. |

### Some Important Facts related to Computers

➢ December 2 is observed as Computer Literacy Day.
➢ India has announced New Computer Policy in 1984.

- First computer (made in India) is 'Siddharth', which was manufactured by Electronics Corporation of India.
- First computer in India was installed in the *Main Post Office of Bangalore* on August 16, 1986.
- First Pollution Free Computerized Petrol Pump of India is in Mumbai.
- First Computer University (in Private Sector) in India is Rajeev Gandhi Computer University.
- Bangalore (now Bangaluru) is also known as the Silicon Valley of India.
- First Indian News Paper to be available on Internet is 'The Hindu'.
- First Indian magazine to be available on Internet is 'India Today'.
- First Indian political party which has created its website on internet is 'Bhartiya Janata Party (BJP)'.
- Mainly there are three types of Computer, Digital, Analog and Hybrid.

**Super Computers developed in the World**

| Name | Manufacturer |
| --- | --- |
| CRAY KIS | CRAY K Research Co., USA |
| Deep Blue | IBM Co., USA |
| Blue Gene | IBM Co., USA |
| COSMOS | Cambridge University, UK. |

**Super Computers developed in India**

| Name | Manufacturer |
| --- | --- |
| FLO SOLVER | NAL, Bangalore |
| PACE | DRDO |
| PARAM-10000 | C - DAC, Pune |
| CHIPP - 16 | C-Dot, Bangalore |
| MULTIMICRO | IIS, Bangalore |
| MACH | IIT, Bombay |

- First Super Computer of the world is CRAY K-1-S, developed by Cray K Company of U.S.A.
- 'Deep Blue' is a Super Computer which had defeated World Chess Champion Garry Kasparov. This Super Computer is able to do the work equivalent to the work of 32 computers and can think 20 crore steps of chess in 1 second.
- First Electronic Digital Computer of the world is 'ENIAC'.
- Most popular Operating System in the world is WINDOWS.
- USENET is a link to connect all the universities.
- First book on Personal Computer was written by Ted Nelson.
- The book of Ted Nelson 'Soul of New Machine', won Pulitzer Prize.
- First magazine on Computer is 'Computer and Automotion'.
- First home Computer is Comodor VIC / 20.
- First Practical Digital computer is UNIVAC.
- FORTRAN is the first Programming Language.
- PROLOG is the language of the fifth generation of computer.
- J.S. Kilbi developed the IC chips.
- A computer error is known as Bug.
- C -DAC (Centre for Development and Advanced Computing) was established in Pune in 1988.
- Super computer PARAM - 10000, having the capacity of 1 billion calculations per second, was made by the scientists of C - DAC of

Pune on March 28, 1998. The main credit for the development of the PARAM-10000 goes to Dr. Vijay P. Bhaskar, Executive Director of C-DAC, Pune.

➤ National Aeronautics Laboratories, Bangalore was the first in India to develop a Super Computer named FLO SOLVER.

➤ Laser Printers are the fastest printers.

➤ IBM (International Business Machine) is an American computer company.

➤ Computer virus is a man made digital parasite, which corrupts (infects) the file and known as 'File corrupter'.

➤ Modem is a device which connects the computers and works based on telephone lines.

➤ Y-2 K was a technical problem, associated with the calendar (Date, Month and Year) known as 'Millenium Bug'.

➤ The development of computer started in India since 1955.

➤ Indian Institute of Science, Bangalore has developed 'Simputer', which is a small palm sized touch screen computer.

➤ First computerarium in India is in Bangaluru (Karnataka).

➤ Vellanad of Thiruvananthpuram district in Kerala has been declared the first fully computerised village of India.

➤ PC, Home computer, Electronic notebook etc. are the examples of micro computer.

➤ Some Operating Systems, used in micro computers are — CP / M, Mac OS (Apple), DOS, Pro DOS, MS DOS / PC DOS, XENIX, WINDOWS, LINUX etc.

➤ *Linus Benedict Torvalds*, creator and coordinator of the Unix like Operating System. Linus was born in Helsinki, Finland on December 28, 1969.

➤ On Sept. 17, 1991 Linus completed the first version of Linux. He made the wisest decision in Operating System history by releasing Linux under General Public Licence, thereby making it open and free to all.

➤ He is one of the pioneers who advocated the idea of free software and thereby changed the software market.

➤ A computer may be used to control purely mechanical action. It has two main parts : (i) Hardware and (ii) Software.

### Hardware

Computer performs some operations to solve problems. For this the various units of a computer system must perform and co-ordinate all operations.

➤ A computer has three main units : 1. Input unit, 2. Processing unit and 3. Output unit. These are the physical units of a computer system. These units constitute the hardware of a computer.

➤ The computer has its own internal 'language'.

➤ The computer is essentially made of electronic components. All these components are capable of generating any one of the two states, either a low (or a 0 volt) or a high (say 5 volts).

➤ It is difficult to talk always in terms of currents and voltages to represent information. Therefore, computer scientists use a special convention. A high is symbolically represented by a '1' and a low is represented by a '0'. The 1s and 0s are known as binary digits, or in short 'bits,' (the term 'binary' refers to something that has two parts).

➤ Computers always work with bits. They do not understand any other form.

➤ Computer scientists use combination of 8 bits taken together to represent various symbols.

➤ Because every bit can take one of 2 possible values, the total number of combinations possible, using 8 bits, the computer can represent 256 different symbols.

➤ This is enough to cover our entire range of alphabets, numbers and other special characters like $, @, +, ₹ etc. Such a combination of 8 bits is called a byte.

➤ To build complex information like paragraphs and mathematical equations, we would need a larger number of bytes or characters. Thus we have the kilobyte, megabyte and gigabyte.

➤ 1 kilobyte = 1024 bytes.

➤ In computers information is represented using multiples of 8 ($2^3$) bits, since 8 bits are the smallest unit of information. Therefore, higher units are expressible in multiples of $2^3$.

➤ The power of two closest to a kilo (1000) is $2^{10} = 1024$.

➤ Megabytes is used in a more conventional sense and is equal to 1 million bytes or 1000 kilobytes.

➤ 1 MB = 1000 KB

➤ A gigabyte refers to 1000 megabytes or 1 million kilobytes.

➤ 1 GB = 1000 MB

➤ The earliest computers were designed so that there components could work with 8 bits at a time.

➤ While the earliest machine were 8-bit machines, contemporary computers can work with 16, 32 and even 64 bits. This is called the data width of the computer.

➤ The basic elements of computers that can signal a 1 or a 0 are called flip-flops. It is a simple electrical device and can either be a '0' or a '1', which means that the flow of current is either inward or outward.

➤ Modern computers use a very tiny set of flip-flops known as a register. The most important characteristic of these registers is that the binary digits can be stored in them using certain voltages.

➤ The entire independent circuits can be designed on a small piece of a semi conductor material like silicon.

➤ Silicon is obtained from sand and is a poor conductor of electricity. But, by chemical processes, the surface and the enterior of a silicon 'chip' are modified to give it electronic capabilities. Such miniature circuits are called Integrated Circuits (IC).

- By 1971, engineers were able to put a few component switches necessary to build a complete computer on a single chip of silicon. This tiny silicon chip was called the microprocessor.

- Because the computer is a binary machine, it performs mathematical operations using the binary number system.

- The binary number system is similar to the decimal system where we use ten digits, 0, 1, 2, 3.... 8, 9 to represent all numerical values. The only difference is in the number of digits used.

- The computer converts all decimal numbers into binary numbers or combinations of bits. Then by acting upon individual bits, it can perform the required mathematical operation addition, subtraction, etc.

- The internal circuits that can perform mathematical operations on bits are usually made of two or more logic gates. Logic gates are components that generate a 1 or a 0 depending on the input.

- The three basic logic gates are AND, OR and NOT.

- A computer is organized into three basic units :

  (i) the Central Processing Unit (CPU)

  (ii) the Memory Unit (MU) and

  (iii) the Input / Output Unit

(i) **Central Processing Unit (CPU)**

The CPU is the part of a computer that performs the main function of information processing. The memory unit stores data. The computer supplies processed information back to the users using special output devices.

- The Central Processing Unit or CPU, is the most important part of the computer. It is called the brain of the computer. It makes all the required calculations and processes data.

- The CPU can be divided into three main components : (a) ALU (b) CU and (c) Registers.

  (a) *The Arithmetic and Logic Unit (ALU)* : ALU performs all the mathematical and logical operations on the information supplied to the CPU.

  (b) *Control Unit (CU)* : This unit directs the working of the CPU. It fetches instructions (Programs) from the memory and according to the instructions, controls the flow of data between the ALU and other parts of the computer.

  (c) *Registers* : Registers are storage locations that hold instructions or data while the CPU is using them. The registers consist of flip-flops and the registers used by the CPU are the fastest memory elements in the computer. In contrast, the memory unit holds instructions and data before or after the CPU processes these.

**Main attributes of CPU**

  (a) *Data Width* : It refers to the number of bits of data that can be manipulated within the CPU at one given time.

- The data width of a computer is also called its word size.

- Computers have data widths ranging from 8 to 64 bits.
- A higher data width means the CPU is capable of processing data faster. A CPU with a higher data width is more powerful.
  - (b) *Address Range* : Address range refers to the amount of memory that can be directly read or written by the CPU.
  - (c) *Clock Speed* : The speed of CPU is known as Clock Speed. The computer is essentially composed of tiny devices that can be put on or off to indicate 1 or 0.
- At any moment several thousand such devices change their state. To synchronize the change of all these components the CPU uses an internal clock.
- With every tick of this clock all switches that need to change their position do so in perfect harmony.
- The larger the number of ticks per second the faster is the speed of the CPU.
- The ticks per second of the internal clock are measured in megahertz and gigahertz.
- Hertz is a unit of frequency .
- 1 MHz = 1million 'ticks' per second, 1 GHz = 1000 MHz
- Higher the clock-speed, faster the computer.

(ii) Memory Unit (MU)
The memory unit stores all instructions and data for the CPU. Memory Unit is an important part of the computer system. The storage device of a computer system is known as memory. Memory Unit can receive data, hold it and deliver according to the instructions from the control unit.

- Memory is of two kinds : (a) Primary and (b) Secondary.
  - (a) *Primary Memory* : It is often referred to as the working memory or the main memory of a computer system. It is capable of sending and receiving data at a very high speed. It is temporary in nature i.e. Data stored in primary memory are lost when the computer is switched off. So it is also called volatile memory. Example of primary memory is RAM.
- Primary memory is directly accessible to the CPU. It must be able to provide data very quickly.
- The two basic kinds of primary memory are the Random Access Memory (RAM) and the Read Only Memory (ROM).
- The RAM is a read/write memory.
- The CPU can change the contents of the RAM at any time. In addition, RAM is volatile.
- The RAM capacity greatly influences the computing ability of the computer. Capacity is usually measured in kilobytes and megabytes.
- The ROM can not be altered.
- Informations is stored on the ROM at the time of its manufacture. The

information might be in the form of crucial instructions that govern the working of the computer.

➤ The ROM is non-volatile and retains its information even after the power is turned off.

➤ The PROM (Programmable Read Only Memory), however, has the option of being programmed, i.e. the manufacturer of the computer may choose to load a program designed by his company into this PROM, and then the computer would use this PROM like any other ROM.

(b) *Secondary Memory* : It is used to store data for a long term. It operates at a much slower rate than primary memory. Secondary memory is permanent in nature, so it is also called non-volatile. It is also cheaper than primary memory. Examples of secondary memory are floppy disks, hard disks, magnetic tapes etc.

➤ Primary memory is fast but expensive. To reduce storage costs, computers also use secondary memory.

➤ It is not directly accessible to the CPU. Information is moved from the secondary memory to the primary memory first and then to the CPU.

➤ Common examples of secondary memory are floppy diskettes, hard (fixed) discs and magnetic tapes.

➤ A floppy diskette is a plastic disk coated with magnetic material.

➤ Special devices known as disk drives are capable of reading from and writing to floppies using special magnetic 'head'.

➤ Any piece of information stored on a floppy diskette can be directly accessed.

➤ Magnetic tapes are long plastic tapes coated with magnetic material.

➤ Magnetic tapes can store far larger amounts of data than the floppy diskette. But a problem with magnetic tapes is that information can not be accessed directly as in the case of floppy diskettes.

➤ The third type of medium, called fixed or hard disks, are more or less similar to the floppy diskette. But one hard disk drive contains several discs of a hard material.

➤ Another popular storage medium is the compact disk (CD). Unlike the media described above, CDs are an 'optical' medium.

➤ An optical medium is one where the properties of light is used for the medium to perform its basic functions.

➤ Conventional CDs are made of a special kind of plastic.

➤ The CD is read using a laser beam .

➤ Secondary memory is much slower, but it is non-volatile and can be used to store information for long periods of time.

(iii) Input/Output

➤ There has to be a physical channel that permits users to supply informations to the computer.

➤ Devices that permit users to supply information to the computer are called 'input' devices.

- Input unit enables us to enter (or "Input") data into a computer. The common input devices are keyboard and mouse.

- Similarly, a physical channel that permits a computer to convey the processed information to the outside world. Devices that permit such a function are called 'output' devices.

- Output unit enables the computer to show us the result and the information that we want. The common output devices are monitor, printer and speakers.

- Input and output devices are indispensable, but are not a part of the CPU. They are also called peripheral devices, suggesting that they lie on the periphery of the CPU.

- These devices are also called an interface, because they translate informations for man and machine.

- The most popular input device used in contemporary computers is the keyboard.

- Another way to input information into a computer is to use an Optical Mark Reader (OMR). Optical Mark Readers are capable of reading specially prepared forms. These forms have a provision for black marks to be made using a pen or a pencil in a specific position.

- Most competitive examinations that deal with a large number of students usually use this system.

- Banks use another input device called a Magnetic Ink Character Reader (MICR).

- Special numbers are written on bank cheques using magnetic ink and in a particular style to write different numbers. The MICR passes over the words or characters, examines the shape of the magnetic field created by the character, and is thus able to recognize it.

- Bar codes are often imprinted on products in merchandise stores. A bar code consists of several parallel vertical lines of different thickness that represent the binary digits.

- The bits form a code that can be used to identify the object on which the bar code is imprinted. A bar code reader is used to read the bar codes by detecting the bars by using light.

- The bar code can represent information like the price of the product or its date of expiry etc.

- Menu-driven programs, where the user sees the host of on-screen choices, sometimes use another input devices called the mouse.

- The mouse is a pointing device. It can be gripped in the palm of the hand and moved over a horizontal surface. The motion of the mouse can be monitored by the computer in different ways.

- The movement is measured and transmitted to the computer. This generates a corresponding movement of an on-screen marker called a cursor from one option to another.

- To select an option, the user presses one of the mouse's buttons.

- Another, input device is a digital camera. A digital camera has a circuit that is sensitive to light.

- The two most common devices are the Visual Display Unit (VDU) and the printer.
- A Visual Display Unit (VDU) uses a cathode ray tube to display informations.
- To represent any character, VDU illuminates a particular pattern of these dots. These dots are also known as pixels, a short form for picture - elements.
- Printers print characters on paper or other similar medium.
- Printers come in three popular versions : dot matrix printers, ink-jet printers and laser printers.
- Dot matrix printers print characters in the form of combinations of very tiny dots. The printing head aligns its 'pins' to match a particular pattern of dots.
- Ink-jet printers spray jets of ink on to the paper to print any character. The characters are absolutely smooth as ink is sprayed in a continuous flow.
- Laser printer, uses a laser beam to actually 'burn' the characters on to the paper.
- We need to issue the computer a detailed sequence of instructions that it needs to follow to operate upon any data. Such a sequence is called a program.
- A program may directly be written to the RAM or may be stored in some form of secondary memory.
- It may be transferred from the secondary memory to the RAM as and when required.
- Execution of a program means that data is moved around in the CPU according to a well-detailed sequence by the programme.
- Computer programs are written using special languages called programming languages.
- There are several programming languages. Each language has its own 'grammar' called its syntax.

## Types of Programming Languages

- Machine language and the assembly language are examples of low-level languages.
- A special program called Assembler converts all instructions into the binary format.
- Because all such instructions must finally be converted to the binary form, all high - level languages have their own translation programs called compilers or interpreters.
- Examples of popular high - level languages are C, C++, JAVA, Pascal, Fortran etc.

## Software

- Software relates to set of programs. The software controls the computer hardware parts and make them operational. In other words, it governs the operations of a computer system.

- Software is a general term used for all computer programs. This distinguishes programs from the physical components of the computer, which are collectively called the hardware.
- Software is generally divided into two kinds of programs : Application programs and System's programs.
- Applications programs are programs that permit the computer to be used as a tool for some specific tasks.
- A common term used for special text editors is word processors.
- Another popular type of application programs is the Data Base Management Systems (DBMS).
- The most important system's program is an operating system.
- Operating systems help users interact with the computer.
- Unix, MS-DOS, Linux, Windows, Mac OS are some of the most popular operating systems used by contemporary computers.

## Glossary

**Active Cell** : The cell in MS Excel with dark boundary is called the active cell.

**ALU** : It stands for Arithmetic Logic Unit. All calculations in computer are done here.

**Application Software** : It is designed to perform some specific applications such as payroll, word processing, graphics etc.

**Batch Processing** : Data are processed in a batch.

**BIOS** : It stands for Basic Input Output System. This program is stored in ROM.

**Bit** : It is the short form of Binary Digit.

**Boot Loader** : It reads the main portion of the operating system from secondary memory.

**Byte** : One byte is a collection of 8 bits.

**Cell** : Cells are boxes created by the interaction of rows and columns.

**Cell Pointer** : The boundary of active cell is called cell pointer.

**Copyright** : It means the material and information are the personal property of the owner or producer.

**Counter feiting** : It is a process of making and distributing illegal copies of software packages.

**Cracker** : A cracker is a person who breaks into a computer system to steal the information as programs for unauthorized use.

**CU** : It stands for Control Unit. It controls the computer system.

**Data** : Data are raw facts and figures.

**Database** : It is a collection of files. Data remains in an organized form in a database.

**Data Capture** : It is a process of collecting or capturing data from a site or a source.

**Data Manipulation** : Captured data are manipulated to produce information.

**Data processing** : It is the process to get meaningful information from data.

**DBMS** : It stands for Database Management System. It is a software package to manage database.

**DHTML** : It stands for Dynamic Hyper Text Markup Language. It is used to create dynamic content on web pages.

**Dial Up Networking** : It is the method by which a computer is connected to the Internet using telephone.

**DOS** : It stands for Disk Operating System. It is an operating system.

**Ethics** : Ethics are rules and beliefs.

**Fields** : A field in database is a collection of bytes that contain data about an item.

**File** : A file is a collection of related records.

**GML** : It stands for General Mark-up Language.

**Hacker** : A hacker is a person who breaks into a computer system to get access the information stored there.

**HTML** : It stands for Hyper Text Markup Language. It is used to create web-pages.

**IAB** : It stands for Internet Activities Board which was formed in 1983. It is now called as Internet Architectural Board.

**IAS** : It stands for Internet Application Software also known as Browsers.

**IETF** : It stands for Internet Engineer Task Force.

**IRTF** : It stands for Internet Research Task Force.

**ISP** : It stands for Internet Service Provider.

**Internet Society** : It was formed in 1992 to promote the use of Internet.

**Input Unit** : It is a part of computer system and used to enter data.

**Linux** : It is a Unix like Operating System with graphical user interface.

**MAC OS** : It is an Operating System used in Macintosh Computer, developed by Apple.

**Modem** : It is a device to connect different computer systems to the internet using telephone or cable lines.

**MU** : It stands for Memory Unit. It is used to store data.

**Online Processing** : It is used when data are coming continuously without delay.

**Operating Unit** : It is used to take output from the computer.

**Operating System** : It is an interface between the human user and the computer hardware.

**Piracy** : It is the illegal reproduction and distribution of software application.

**Primary Key** : It is a field with unique value for each record.

**Primary Memory** : It is the main memory of a computer system.

**Query** : It is used to extract information from a database.

**Range of Cells** : It is group of neighbouring cells that touch each other.

**RDBMS** : It stands for Relational Database Management System.

**Record** : It is the collection of related fields.

Secondary Memory : It is the permanent memory of the computer.

Software : It relates to sets of programs.

SOLARIS : It is a Unix like Operating System developed by Sun Microsystems.

Sorting : It is arranging of data in order.

System Software : It performs the basic functions that are necessary to operate a computer system.

Tag : It is part of HTML. It determines the way, the browser displays text in a Web Page.

Unix : It is a powerful multiuser operating system. It uses command line user interface.

Virus : It is a harmful computer program.

## Some Memorable Facts

- A computer is a data processing machine.
- It has two main parts: hardware and software.
- Hardware comprises of the physical units of a computer system.
- Software is a set of programs.
- Both hardware and software together make a computer system functional.
- Data are raw facts and figures.
- An operating system is an interface between the user and the computer hardware.
- An operating system manages computer resources.
- An operating system performs different functions.
- An operating system is responsible for process management, file management, etc.
- There are many kinds of operating system.
- Some popular operating systems are DOS, UNIX, Windows, LINUX, Mac OS, etc.
- The Windows Explorer program is more efficient for viewing folders in Windows.
- Windows Explorer is divided vertically into two parts or two panes.
- The left side pane displays disk drives and folders in a hierarchical order.
- The right pane displays the contents of the folder/ drive that is selected on left side pane.
- The process of linking text values in a series within a formula is called 'concatenation'.
- The computer is a data processing machine.
- Data processing involves some activities like data comptuing data manipulation and information management.
- A database is a collection of interrelated data.
- Computers are very useful for maintaining databases.
- A relational database is a collection of data items organized as a set of formally described tables from which data can be accessed or reassembled in many different ways without having to reorganize the database tables.

➤ MS Access is a powerful program to create and manage our databases.
➤ A table is a collection of data about a specific topic.
➤ A form is a graphical representation of a table.
➤ A report is a presentation of data in a printed format.
➤ We can create mailing labels for your database using MS Access.
➤ Internet is the network of computer networks with millions of computer attached to it.
➤ Websites are files in servers, which are powerful computers.
➤ Websites contain pages called Web Pages.
➤ The collection of all websites is called World Wide Web or WWW.
➤ Hyper text was first coined by Ted Nelson in 1960s.
➤ HTML is a markup language. It is used to create Web Pages. It uses commands called Tags.
➤ Text editors are used to compose HTML documents. HTML documents are viewed in Web browsers.
➤ In the Photoshop toolbox, the tools are grouped by type.
➤ Some of the tool icons have a tiny black triangle in the lower - right corner of their icons. This means that there are more tools of the same general kind available on a pop-up menu.

## Abbreviations associated with Computer

| | |
|---|---|
| CDAC | Centre for Development of Advanced Parallel Computing |
| C-DOT | Centre for Development of Telematrics |
| HTTP | Hyper Text Transfer Protocol |
| ROM | Read Only Memory |
| RAM | Random Access Memory |
| BIOS | Basic Input-Output System |
| MODEM | Modulation-Demodulation |
| CAD | Computer Aided Design |
| PSTN | Public Switched Telephone Network |
| PSPDN | Pocket Switched Public Data Network |
| RABMN | Remote Area Business Message Network |
| LAN | Local Area Network |
| WAN | Wide Area Network |
| MAN | Metropolitan Area Network |
| CDMA | Code Division Multiple Access |
| GAIS | Gateway Internet Access Service |
| E-Mail | Electronic Mail |
| CD | Compact Disc |
| LDU | Liquid Display Unit |
| CPU | Central Processing Unit |
| CAM | Computer Aided Manufacturing |
| CATScan | Computerised Axial Tomography Scan |
| COBOL | Common Business Oriented Language |

| | |
|---|---|
| COMAL | Common Algorithmic Language |
| DOS | Disc Operating System |
| DTS | Desk Top System |
| DTP | Desk Top Publishing |
| E-Commerce | Electronic Commerce |
| ENIAC | Electronic Numerical Integrator And Calculator |
| FAX | Fascimile Automated Xerox |
| FLOPS | Floating Operations Per Second |
| FORTRAN | Formula Translation |
| HLL | High Level Language |
| HTML | Hyper Text Markup Language |
| IBM | International Business Machine |
| IC | Integrated Circuit |
| ISH | International Super Highway |
| LISP | List Processing |
| LLL | Low Level Language |
| MICR | Magnetic Ink Character Recognition/Reader |
| MIPS | Millions of Instructions Per Second |
| MOPS | Millions of Operations Per Second |
| MPU | Micro Processor Unit |
| NICNET | National Informatics Centre Network |
| OMR | Optical Mark Reader/Recognition |
| PC-DOT | Personal Computer Disk Operation System |
| PROM | Programmable Read Only Memory |
| SNOBOL | String Oriented Symbolic Language |
| UPS | Uninterruptable Power Supply |
| VDU | Visual Display Unit |
| VLSI | Very Large Scale Integrated |
| WWW | World Wide Web |

## Abbreviations

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|---|---|
| A.V.E.S. | Acute Viral Encephalitic Syndrome |
| B.C.T.T. | Bank Cash Transaction Tax |
| B.C.S.B.I. | Banking Codes and Standard Board of India |
| C.I.C. | Central Information Commission |
| C.S.T.O. | Collective Security Treaty Organization |
| CNLU | Chanakya National Law University |
| D.I.I. | Domestic Institutional Investor |
| DTH | Direct to Home |
| E.C.G.C. | Export Credit Guarantee Corporation |
| F.D.I. | Foreign Direct Investment |

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|---|---|
| F.I.I. | Foreign Institutional Investor |
| GANDHI | Green Action for National Dandi Heritage Initiative |
| GUAM | Georgia, Ukraine, Azerbaijan and Moldova |
| GAGAN | GPS Aided Geo-Augmented Navigation |
| H.P.A.I. | Highly Pathogenic Avian Influenza |
| IAEA | International Atomic Energy Agency |
| IITF | India International Trade Fair |
| I.M.O. | Instant Money Order |
| IBSA. | India, Brazil, South Africa |
| IRDA | Insurance Regulatory Authority |
| KYC | Know Your Customer |
| M.R.O. | Mars Recconnaissance Orbiter |
| N.A.D.T. | National Authority on Drugs and Therapeutics |
| N.C.C.E | National Council for Clinical Establishments |
| N.C.H. | National Consumer Helpline |
| N.E.I.A. | National Export Insurance Account |
| N.M.D.P. | National Maritime Development Programme |
| M.N.R.E.G.A. | Mahatma Gandhi National Rural Employment Guarantee Act |
| N.J.C. | National Judicial Council |
| NOTE | National Organization for Tobacco Eradication |
| O.C.I. | Overseas Citizen of India |
| PETA | Peoples for Ethical Treatment of Animal |
| PURA | Providing Urban Amenities in Rural Areas |
| P.H.F.I. | Public Health Foundation of India |
| QIB | Qualified Institutional Buyer |
| QIP | Qualified Institutional Placement |
| R.L.D.A | Railway Land Development Authority |
| RTA | Railway Territorial Army |
| RTC | Round Table Conference |
| RTG | Radio-isotope Thermo-electric Generator |
| SCRAMJET | Supersonic Combustion Ramjet |
| SIM | Subscriber Identification Module |
| SWIFT | Society for World-Wide International Financial Transactions |
| SWOT | Strengths, Weaknesses, Opportunities, Threats |
| SYL | Sutlej-Yamuna Link (canal) |
| YWCA | Young Women's Christian Association |
| UID | Unique Identity Number |
| UIDAI | Unique Identification Authority of India |
| VAT | Value Added Tax |
| ZSI | Zoological Survey of India |
| ZUPO | Zimbabwe United People's Organization |

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