Definition a Computer

A computer is an electronic device capable of performing arithmetic and logical operations at a high speed.lt sorts and executes a set of instructions called 'Program' – which enables it to perform a series of predetermined operations without manual intervention.

1. Speed
   A computer is a very fast device.lt can perform in a view seconds the amount of work that a human being can do in an entire year – if he worked day and night and did nothing else. To put it in a different manner, a computer does in one minute what would take a man his entire lifetime. A powerful computer is capable of performing about 3 tp 4 million simple arithmetic operations per second.
2. Accuracy
   The accuracy of a computer is consistently high and the degree of accuracy of a particular computer depends upon its design. But for a particular computer, each and every calculation is performed with the same accuracy.
3. Diligence
   Unlike human beings, a computer is free from monotony, tiredness, lack of concentration, etc, and hence can work for hours together without creating any error and without grumbling. A computer will perform the ten millionth calculations with exactly the same accuracy and speed as the first one.
4. Versatility
   Versatility is one of the most wonderful things about the computer. One moment, it is preparing the results of particular examination, the next moment it is busy preparing an electricity bills, and in between it may be helping an office secretary to trace an important letter in seconds.
5. Power of Remembering
   As a human being acquires new knowledge, the brain subconsciously selects what it feels to be important and worth retaining in its memory, and relegates unimportant details to the back of the back of the mind or just forgets them. A computer forgets or looses certain information only when it

is asked to do so. So it is entirely upto the user to make a computer retain or forget particular information.

CENTRAL PROCESSING UNIT

The control unit and the arithmetic logic unit of a computer system are jointly known as the central processing unit[CPU]. The CPU is the brain of any computer system .In a human body, the brain and the other parts of body fiction as directed by the brain take all major decisions**.**

So the following three characteristics are key to a system.

- A system has more than one element.
- All the elements of a system Are logically related
- All the elements of a system are controlled in such a way that system goal is achieved.

It is called the brain of the computer. The actual processing is done in the part. Millions of calculations can be done per second. It has mainly 3 parts, namely ALU, control unit and main memory. All the arithmetic calculations and logical operations are done in ALU. The control unit regulates and manages the functions of the whole system. Any information, data, records or files get stored in the main memory.

Main Frame

It is a large and powerful computer. Mainframes are mostly used in large organization like banks, insurance companies,government offices. The size and the speed of a mainframe are very much greater than that of a mini computer.

UPS [Uninterruptible Power Supply]

It is a backup power supply. It includes a battery so that in case there is a power failure, it is possible to continue operations for a short time so that you can save your information.

MOUSE

A mouse is a hand – held device that allows you to select and move items on your screen. It is a small plastic box with buttons on top and a ball underneath. When the ball is moved over a mouse pad, the ball rolls and a marker appears on the visual display unit. A mouse comes in various shapes, colors and sizes.

KEYBOARD

The main PC keyboard sold today includes I05 keys. It features I2 function keys arranged at the top of the keyboard, and a larger backspace key, a numeric keypad, a cursor movement keypad, toggle lights and better placed Ctrl keys.

PRINTER

A printer is an output device. It produces printed copies of text or graphics of paper or on a similar medium. Letters, invoices, newsletters, reports, labels, transparencies, packing slips and much more can be produced using a printer.

TYPE OF PRINTER

1. DOT – MATRIX PRINTER

It is an impact printer that produces printed images when tiny wire pins on a print head mechanism strike an inked ribbon. When the ribbon presses against the paper, it creates dots that form characters and graphics.

The speed ranges from 50 to 700 characters per second, depending on the desired print quality**.**

2. INK – JET PRINTER

It is a non – impact printer that creates characters and graphics. Ink – jet printers work by spraying very small, fine and magnetically controlled jets of quick – drying ink onto paper. Of the colour printers available – ink – jet printers are the cheapest kind. They are most suitable to a page are to be added. Most ink –jet printer print from I to 8 pages per minute.

3. LASER PRINTER

A laser printer is also a non – impact printer that uses a laser or other light source to print characters on a page. A laser printer is a high – speed, high quality printer that is ieal for business, personal documents and for proofing professional graphics work.Laser printers print text at speeds of 4 to 30 pages per minute [ppm]

4. Solid Ink Printer

A solid ink printer prints high – quality colour images at a relatively low price. Solid ink printers are ideal for producing crisp colour images on regular paper and transparencies.

5. Thermal – Wax Printer

A thermal – wax printer uses heated dot – matrix wires to print output on specially treated paper. Thermal – wax printers are, however, ideal for use in small devices such as adding machines.

6. Dye Sublimation Printer

A dye sublimation printer fuses a gaseous form of coloured ink onto special paper. The quality of output equals that of photographs.

REFRESH RATE

To ‘refresh’ is to update the display on a television or visual display unit. This is done many times in one second. If the screen is not refreshed, it will fade or flicker. If the screen, s refresh rate is higher, it will be easier on the eyes.

VGA [Video Graphics Array]

It is video display standard. It is for colour monitor. VGA monitors display I6 colours at a resolution of 60 640 480 pixels. This is the lest standard for computer systems. VGA is not suggested for multimedia applications.

SVGA [Super Video Graphics Array]

It is graphic display standard which provides higher resolutions than video graphics array [VGA] , SVGA screens have resolutions of either 800 600 or I024 768 pixels.

VIDEO CARD MEMORY

Your video card must have enough memory to generate the resolution and number of colours you want to display.

DRAM [Dynamic Random Access Memory]

It is the ordinary kind of memory chip. It is used for the computer's main memory. All information stored in DRAMA is not permanent. In case of a power failure, all information is lost. The most cost – effective way to improve the performance of a computer is the addition of DRAMA. DRAMA is also known as RAM**.**

VRAM[Video Random Access Memory]

It is a kind of memory. It is used in video adaptors for producing images on the screen. VRAM is used by high – end applications like desktop publishing and photo – retouching. DRAM is used by low-end general purpose video adaptors.

MODEM

Modem is a devise by which computers exchange information over telephone I.ines.

Modem is used for exchanging e-mail, joining a bulletin board system, on-line service like CompuServe and forsurfing the Internet. There are desktop modern's portable moderns and internal moderns.

Expansion Card

It is a circuit board can be fixed in the computer for adding a new feature. For adding a new feature. For instance, CD-quality sound or a modern can be added by an expansion card.

TYPES OF EXPANSION CARDS

1. Video Card

A video card is an expansion card. The images shown on the screen are controlled by it.

2. Modern Card

A modern card lets computers exchange information over telephone lines.

3. Sound Card

A sound card is a special card. Your computer's bleeps and lurps are turned into thundering and loud noises.

4. Networking Card

A networking is a group of two or more computers that are linked together by cables or wires, for the purpose of sharing files, programs and peripherals such as a printer.

BYTE

It is a unit of measure of computer memory. 8 bits make 1 byte. Most computers have millions of bytes of memory. Each byte is stored in a cell at a particular address. I byte is equal to I character.

An operating system is the essential part of any computer. Every general - purpose computer must have an operatingsystem to run other programs, and provide the base upon application programs can be written.

Functions of an operating system

1. Input / Output

Input / Output [l/O] is essential to the operation of any computer. I/O allows the computer to interact with peripheral devices such as keyboard, mouse, terminals, discs or tapes, printer etc. every operating system provides some form of I/O.

2. Command Interpreter

The command interpreter reads the commands a user types in at a terminal, interprets them, and translates them into a detailed set of instructions that the computer hardware can understand.

3. Data Management

Data Management allows users to organize their data into logical groupings called files. Thankfully, most of the modern day operating systems do provide some form of data management features.

4. Program Development Tools

Program Development Tools assist users in writing and maintaining programs. Compilers, assemblers, debuggers, and software maintenance system fall into this category.

5. .Time-sharing

Time – sharing is a way of allowing several people to run programs on different terminals, but on the same computer system, at the same time**.**

6. Security

The security feature protects one user from another and the operating system as a whole, from all users. Its main function is to make sure that only authorized users gain access to the computer and its data, and that users only do things they are authorized to do.

7. Communication

It refers to the ability of one computer to communicate with other computers and terminals either on the same network, or a different network, to transfer programs and or data.

8. Accounting

Accounting keeps track of what each person has done on a computer and ascertains the extent of utilization of computer resources by the users, usually in the form of memory [disk space] allocated to the user**.**

9. Management Functions

Since an OS manages four major computer resources, viz. memory processor, I/O devices and files, it consists of four major subroutines, which perform the followingmanagement functions.

10. Memory Management

The memory management function finds all available free space in memory and allocates it to the processes.

11. Processor Management

The processor management function allocates a processor to execute a chosen process.

12. Device Management

The device management function allocates a device to a process. If finds the status of devices, channels and control units, finds answers to questions like which process, which device.

13. File Management

The file management function keeps track of all information on files. lt opens and closes files, It finds and records the following for all files: location, size, usage [attribute], status etc.

Wide – Area Networks [WAN'S]:

The computers are farther apart and are connected by telephone lines or radio waves.

PROTOCOL:

The protocol defines a common set of rules and signals that computers on the network use to communicate. One of the most popular protocols for LAN'S is called Ethernet a local-area network [LAN] protocol developed by Xerox Corporation in cooperation with DEC and Intel in I976. Ethernet uses a bus or star topology and supports data transfer rates of I0 Mbps. It is one of the most widely implemented LAN standards. Another popular LAN protocol for PC's is the IBM token-ring network.

NIC

Network Interface Card, sometimes refers to as Network Adapter. NIC is plugged into the slot of the computer and provides the physical connection between the network cable and the computer.

Network Topologies

The interconnection mentioned above follows a physical and logical layout. This layout, called a topology, governs many aspects of LANs including how they function and how easy they are to troubleshoot.

Type of Network Topologies

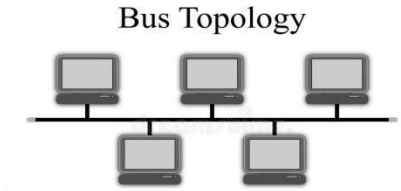
1. Point-to-Point Topology

Point-to-Point topology is the simplest of the physical layouts of network devices. Point-to-point connections mean that two devices [nodes] have a single path for data to travel between them and there.

The point-to-point topology can be seen as one of the basic building blocks of larger, more complicated topologies. All major topologies include point-to-point connections, even if there is no wire between two devices, but some other medium instead.

Point-to-point topology is not just limited to networking use. You should be aware that the direct connection of a PC to a printer follows a point-to-point topology. ln facts, any externally connected device, including moderns or hard disk drives would also fall under this classification.

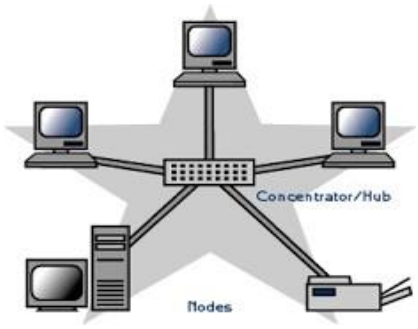
2. Bus Topology



These shared cables might be called ‘’bus wires’’, an excellent description of one of the most popular topologies for LANs – the bus topology.

Just as in the example of the electric busses, all devices share a common wire to transmit and receive data through in the bus topology. This approach is very economical as a single cable is cheaper to purchase than several individual cables for each device. Additionally, a single cable is easier to install than several cables.

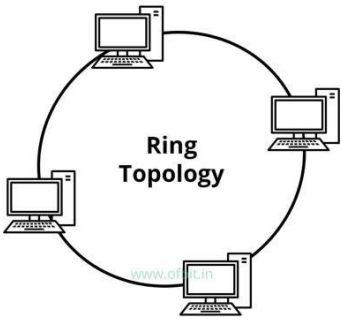
3. Star Topology



Today if you decide to install LAN, Your local LAN dealer will probably suggest you look seriously at star topology networks. At the central point we usually see a device generically called a hub.

Star topologies are not just used by local area networks. They are found in other areas of the life as well. One of the most common star topologies found in other company is the phone system, which typically radiates out from a central site. Because of this, phone system equipment and cabling are often used in setting up LANs.

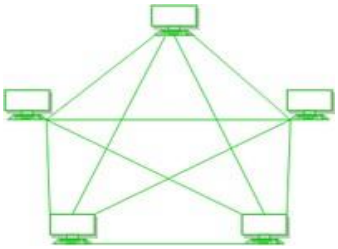
4. Ring Topology



Ring Topology describes the logical layout of token ring and FDDI networks.

In this scheme, a ring is created to which each device [workstation, sever, etc.] attaches. A special signal, called a token travels around this ring visiting each machine, letting it know that it is that machine, s turn to transmit. Since the token visits every node, everyone gets the chance to transmit, creating a very “fair’’ LAN.

5. Mesh topology



Mesh topology is uncommon today because of its sheer impracticality. ln a mesh topology system, every node is connected to every other node. The pervading thought behind this is to offer the maximum amount of reliability for data transit and fault tolerance.

SERVERS

Server is a generic term applied to any machine running a ‘’service ‘’ application. That service being performed might include access to shared files [file server] or access to shared printers [print server].

There are other types of servers besides file and print servers. Communication servers offer access to remote devices outside of a network. Another type of server is known as a database server. This unique device assists users in interacting with databases by coordinating the data sent to the local workstation.

File servers sit at the heart of just about every network. Their responsibility is to dole out files to users requesting them and to sometimes deny that access where appropriate.

WORKSTATIONS

We should be careful to delineate that the term ‘’ workstation’’ may be a little misleading depending on your particular involvement in the computer industry. In PC- based local area networking, a workstation refers to a machine that will allow users access to a LAN and its resources while providing intelligence on-board allowing local execution of applications.

PERIPHERALS

Peripherals include any device that would ordinarily be attached to a computer. LANs allow many of these devices to be shared among several workstations.

SOFTWARE

There are two main types of software utilized in the networking environment- operating systems and applications. In the NetWare environment there are at least two operating systems utilized**.**

WEB BROWSERS

The software needed to access the WWW the graphical portion of the internet is called a browser. It enables the user to view Web pages that could contain text, graphics, sound or video. Today, Microsoft internet Explorer and Netscape Navigator are the two most popular browsers.

E-MAIL

The essence of networking has always been the desire to communicate and that too in the fastest way possible. Electronic mail or e-mail is the application that achieves this with ease.

HOW DOES E- MAIL WORK?

An e-mail address is usually in the form of user@ domain. The domain can have several components-usually the names of each node on the domain tree. An example of an internet e-mail address is enmasse@vsnl.com

The extension '.com 'indicates that CHIP is a commercial establishment. Other common extensions are.gov [for government users] and. edu [for educational users].E- mail addresses in India who have their e-mail account with the ISP VSNL will have their e-mail addresses like this: user@bom3.vsnl.net.in.

HTTP [Hyper Text Transfer Protocol]

Transmits hypertext over networks. This is the protocol of the WWW

HYPERTEXT-THE MOTION OF THE WEB

The operation of the Web relies primarily on hypertext as its means ofinformation retrieval. Hypertext is a document containing words that connect to other documents.

RETRIEVING DOCUMENTS ON THE WEB

THE URL

URL stands for Uniform Resource Locater

The URL specifies the internet address of a file stored on a host computer connected to the internet. Every file on the internet, no matter what its access protocol, has a unique URL. This file is then displayed on the monitor connected to the user's local machine.

URLs are translated into numeric addresses using the internet Domain Name System [DNS].

Anatomy of a URL

This is the format of the URL: protocol://host/path/filename].

COMPONENTS OF A LAN NETWORK

The components used to establish a local area network (LAN) have a variety of functions.

Network Cards

At the most basic level, a network card is a component that allows the computer to communicate across a network. Network cards are further categorized according to whether they operate on wired or wireless networks.

Network Cables

Network cables are the physical lines used to carry information between computers in a wired LAN. The cables are labeled by their category and are commonly referred to as CatX--where X is the category number--cable.

Routers

Unlike switches and hubs, network routers are used to connect networks to one another, rather than connecting computers in a single network. Routers can connect groups of computers that are separated by a wall or by an ocean.

Network Hubs

A network hub acts as a centralized point for data transmission to computers in a LAN. When data from one computer reaches the hub it is broadcast to every computer in the network regardless of where the data is intended to go.

Network Workstations

The whole point of a LAN is to have users working together collaboratively, or at least sharing the network's resources, so all of those users need to have a way to access the

network. That's done through the individual computers, or workstations, that are connected together to make up the LAN.

Apex Language Processor

ALP (Apex Language Processor) is a multilingual wordprocessor running under MS-DOS and UNIX, this allows typing of all Indian scripts through the common INSCRIPT keyboard overlay. It has Wordstar compatible commands. Therefore it has been a favourite with those who are comfortable with Wordstar

ALP supports various Indian scripts such as Assamese, Bengali, Devanagri, Gujarati, Kannada, Malayalam, Oriya, Punjabi, Tamil, Telugu and other scripts such as Tibetan, Diacritic Roman, Bhutanese and Sinhalese.

ALP is available for MS-DOS, UNIX and Novell Netware. There is a separate version which works with the GIST Card.

Types of security features in word 2013

1. Mark as Final
2. Encrypt with Password
3. Restrict Editing
4. Restrict Access
5. Add a Digital Signature