COMPUTER APPLICATION

[TH-1]

1st SEM ALL BRANCH.

Under SCTE&VT, Odisha

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Unit 1

Computer organisation

Introduction to computer - Computer is an electronics machine that takes data as input, process it & gives output as information.

input → Process → output

components of computer

1. Hardware
   - Input devices
   - out put devices
   - Storage devices
   - CPU
   - UPS

Software
- Application s/w
- System s/w

Characteristic of computer

* Speed
* Accuracy
* Storage
* Quick decision
* Repeated capability
* Fun-form

* CPU - Central Processing unit
* RAM - Random access Memory
* ROM - Read only Memory
* CPU - Central Processing unit
* UPS - Uninterrupted Power Supply

unit I

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* Generation of computer

1st generation -
* In 1st generation of computer vaccum tube used for circuitry.
* Magnetic drum is used for memory/storage.
* It is very expensive & used more electricity

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fifth generation:- It based on Artificial intelligence, are still in develop mens
- The goal of 5th generation computing is to develop devices that respond to natural language input & are capable of learning & self organization.

* classification of computers
All Modern computers classified in to 3 categosy
* Analog * Digital * Hybrid

↳ It works on analog data such as variation in temp, Pressure, speed, voltage etc.
- They are specific to a particular area of application. It used to measure Physical quantities.

* Digital Computer:- These are general purpose coneputer, which works on digital data/binary data.

→ speed and accuracy is very high.

* Hybrid coneputer — It having features which are common to both analog & digital computers.
such computer control entire proces.

→ Analog feature measure physical quantities like temp, pressure, voltage & convert them to digital data by digital Prossing capability.

Classification of computers

- By technology
  - Analog
  - Digital
  - Hybrid
- By size
  - Mini
  - Micro
  - Mainframe
  - super
- By purpose
  - General
  - special

Analog computer

- The analog computer works on a continuous segment
- Analog computer slower in speed.
- It provides with less accuracy as compared to digital computer
- Analog computer is difficult to use

Digital Computer

- It works on discrete segment
- It is so fast
- 100 % accuracy
- It is not so difficult to use.

By size

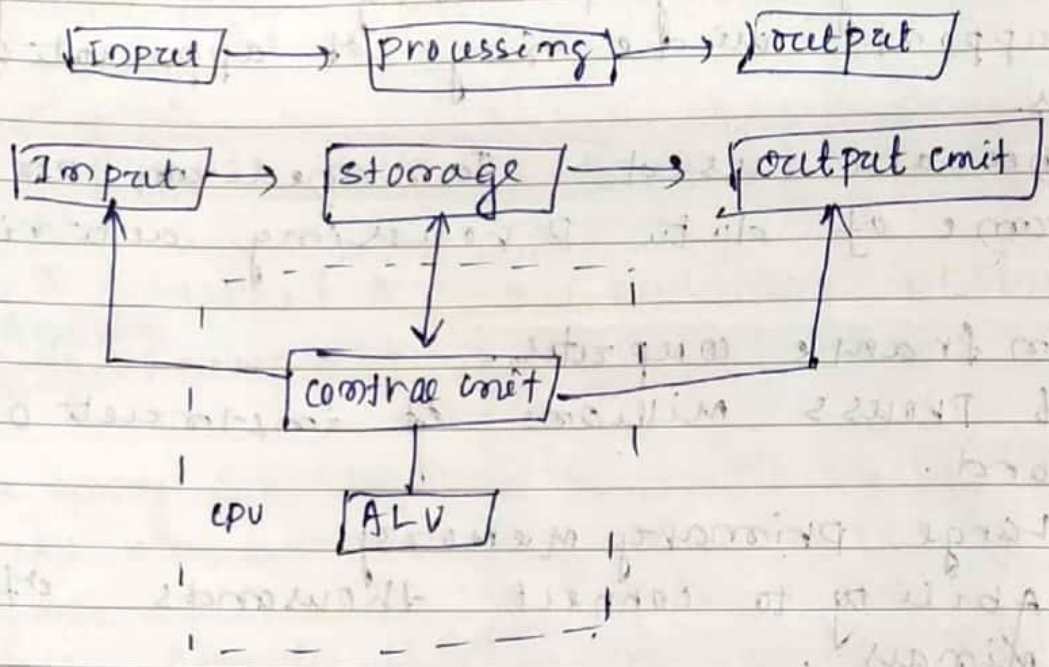
① Micro/ Personal computer

- The smallest & less expensive computer are micro/ PC.
- These are portable
- They require minimum power
- Processing power & memory capacity are sufficient for handling most of task.
- Ease of use & support various types of o.s & s/w.

* ibes are used for medium or large volume of data processing activity.
* tools for manufacturing & testing product
Main frame computer.
* It Proess Millions of instruction per second.
* Large primary Memory.
* Ability to connect thousands of terminals.

super computer → It is most powerful computer.
It is designed to maximize the processing of floting point instructions.
ibis is possible because of parallel processing technique which implements multiple processor to work in Parallel Manner.
The speed of processing of super computer are measured in "FLOPS - (Giga floating

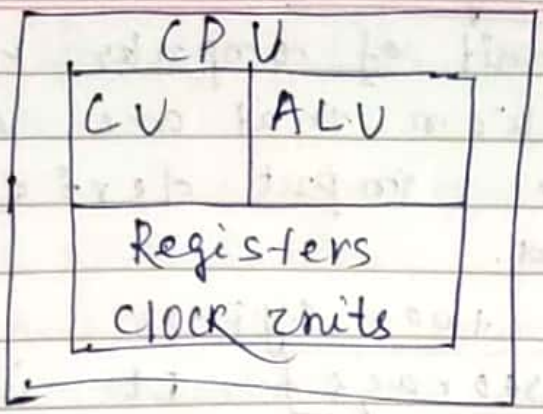
① Basic organization of computer (functional block diagram)

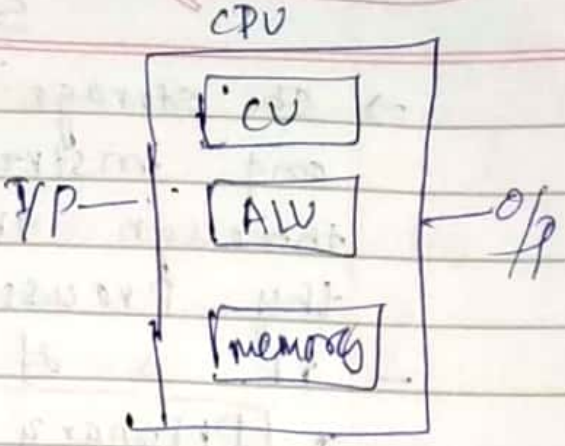


① Input unit * CPU * Memory unit
* output unit

① Input unit:-
computer need to receive data as input in order to solve any problem so we need input device to feed data to computer
- mostly commonly used i/p device is keyboard, others are Mouse, Punch card reader magnetic tape reader

*CPU:- The main unit of computer called CPU i.e the brain of computer.
* It performs all calculations
* It takes all decisions.
* It controls all units of computer





CU control unit - It is responsible for co-ordinating all the activities like transfer of data, instruction b.t/ various sub units.
It issues control signal to various units to carry out the co-ordination job.

ALU - Here actual calculation take place. It is responsible for performing all arithmatic & logical operation that take

Storage unit

→ The storage unit of computer holds data and instruction that are entered through the input device, before they processed.

- It is of two types.

* **Primary storage** - it is also called main memory of computer.

- It is temporary or volatile memory used by the computer while processing data.
- This memory is generally used to hold the program being currently executed in the comp. The data is lost when the computer switched off.

→ In order to store data permanently the data has to be transferred to the secondary memory.

- The cost of primary storage is more than secondary storage.

* It is of two type i.e. RAM & ROM

RAM	ROM
- Random Access memory	→ Read only memory
- It is volatile in nature.	- It is non volatile in nature
- It is read, write memory.	- It is only read type memory

Secondary storage: It is Permanent memory of a computer.

- The pages that you run on the computer are first transferred to the primary memory before it is actually run.
- When the result are saved, again they stored in the secondary memory.

Primary Memory	Vs	Secondary memory
- It store instruction when computer is being used.		- It stores information for longer period of time - Data are stay protected even if the Computer switch off
- Data in Primary memory is lost when computer is switched off		

* Input device - Input devices are required to feed data to computer to get required information.

* Key board - The key board is a way to input letters or numbers in to different appln or pgm.
- It contains four types of keys like numeric, Alphabets, special symbols, function key, control key (shift, alt, del, ctrl)

* Mouse - It is a pointing device is easily interact with graphical user interface system.
- It controls movement of cursor on the screen & Make selection from screen.

* OMR - Optical Mark Reader is a i/p device which is used to

* Magnetic Ink Character Recognition
It is enables special characters printed in magnetic ink to be read and input rapidly to a computer.
- MICR is mainly used by banking systems & other organizations for identification purpose.
* Microphone - It is used to record sound. then it saved as sound file.
* Joy stick - It is used to moves cursor from place to place
- It is used to for computer game.
* touch screen - A screen that we can enter data by touching.
ex - ATM Machine, smartboard etc.

*Output device - An output device converts machine readable information in to people readable form.
→ Soft copy output device is monitor or VDU & hard copy output device is printer.

Monitor -
- The monitor also called VDU (visual display unit)
- There are different types of monitors like CRT, LCD & LED.
CRT - cathode ray - tube.
→ it less expensive then LCD & LED
→ It has not much clear picture then LCD & LED.
→ Now it is not used

LCD- Liquid crystal display

It is more expensive than CRTs.

less than LED

It is expensive than CRT

It has clear picture than CRT

LED- light emitting diode.

It is more costly.

It has more clear Picture than all.

Printer -

A printer is an output device that produce a hard copy of data.

The resolution of printer output is expressed as DPI.

There are different printers like,

Serial printer- also called a characters printer.

characters at a time.

Ink Jet Printer:- The ink jet Printer is a non impact page Printer which prints page by page. The print head contains tiny nozzles through which differently coloured inks can be sprayed on to the paper to form the character or graphics images.

Advantages of this printer is to print variety of colours printing at a relatively low cost. It prints 2 to 6 page per minute (PPM)

Laser printer:- It is a printer uses the electro photographic method used in a copy machine.

contact between Print head and paper while printing.
ex - Dot Matrix printer, Daisy wheel printer etc

* Non impact printers - Non impact printer are those printer which does not have a Physical contact between the print head & paper during printing.
- It has no hammer & not to hit.
ex - Inkjet Printer, laser printer etc.

* Bit mapped printer - images are formed from group of dots & can be placed any where on the page.

* Character based printer - Printer prints character 1 to 10 lines & column of a page.

* Dot Matrix printer - Dot matrix printer write characters & form graphic images using one or two column of tiny dots on a print head.
- The dot hammer moving serially across the paper strikes an inked-ribbon and creates images on paper.
- DMP is not suitable for printing graphics & images.
- The cost of DMP is quality is low but quality is not as good as many impact printers.

* Daisy wheel Printer - Daisy wheel Printer operate same as type writer.
- A hammer strikes a wheel with petal, each petal containing a letter form at its tip.
- The letter form strikes a ribbon of ink, depositing the ink on the page & thus printing a character.

- The plotter is a graphics printer for making 3D it is adopted in applications requiring high quality o/p.
There are two types of plotters like
* Drum plotter - This is a plotter that has a drum. A paper wraps the drums that rotate to produce plots. pens in a drum plotter moves across the paper while the drum is turning.
- A drum plotter is capable of plotting on a drawing sheet & used in commercial applications.

* Flat bed plotter - This is a Plotter that has a bed. This is called also table plotter.
- The plotter draws graphics on the paper

had frequently
or data from main memory.
during the execution process.
When the processor need to read from
or write to a location in main
memory, it first checks whether
a copy of that data is in the
cache. If so, the processor imm
diately reads from or writes
to the cache, which is much fast

There are two types of memory RAM & ROM
- The RAM is volatile memory i.e Random Access memory i.e when the power goes off the data store in RAM is automatically erased.
- The memory used for both read & write options.
- There are two types of RAM i.e ~~Static~~ RAM & dynamic RAM.
- The ROM is mainly used to store small system pgm permanently. This is non volatile is nature, that means stored data in ROM remains even after the power goes off.
- There are different ROM like PROM, EPROM UVEPROM, EEPROM etc.
- EPROM - The erasable programmable ROM
EPROM - Electrically erasable programmable ROM.

Hard disk - It is the most common form of secondary storage, which is permanently installed in the computer. A hard disc is flat, circular oxide coated disc. which rotates continuously.

CD - It is very widely used auxiliary memory. It is based optical mechanism for storing data. It consist of a plastic disk coated with a plastic reflected material. Bits are recorded on pits & Lands on this surface, by focusing a high power Laser beam on the surface.

Floppy disk - It is the first auxiliary storage device to be fitted to a computer. It is a magnetic storage medium mainly used for laptop & computers. Floppy drive is the