

Introduction of Computer

The word computer is comes on the word compute this means calculate.

Computer is normally considered to be calculation device which can perform the arithmetic and logical operations very smoothly / speedily.

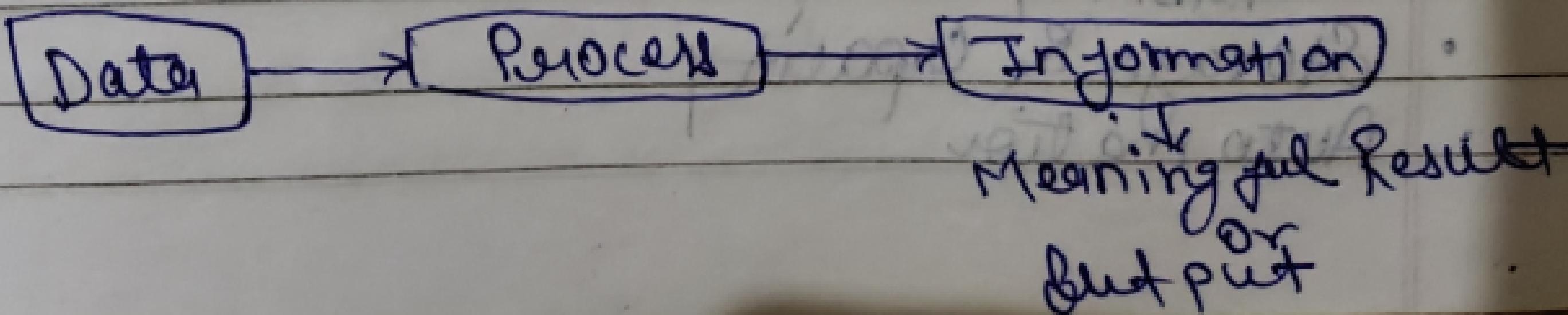
Computer may be defined as device which operates upon the data.

Data can be informed by numbers (0 to 9), letters (a to z), symbols and it come varies shape and size depending on a type of different application.

A computer can store, process and retrieve data as and when we desired

The fact that computer process data is so fundamental that many people have started to calling as data processor.

A computer first it gets the data, does process on it and then produce information.



What is Computer

Definition of the Computer

A computer is an electronic device which takes input from the User, processes it and gives quick output as per user requirement.

A computer is an

Characteristics of Computer

Commonly

Operative

machines

Particularly

Used for

Technological

Education

Research.

→ Stand form of Computer

- Speed
- Accuracy
- Deligence
- Reliability
- Storage & Capacity
- Automation
- Variability.

(1) Speed

Computer is very fast device it can perform the amount of work in few seconds for which human can takes entire days or years.

While talking about the Computer Speed we not talk in terms of seconds ~~as~~ milliseconds but in microseconds.

- A powerful computer is capable of performing several billions simple arithmetic operations per second.

(2) Accuracy

The accuracy of computing is very high.

- The degree of accuracy of particular computer depends upon its design.
- Errors can occur by computer but these are due to human weakness.

(3) Deligence

⑥ Versatility

it can perform the multiple task simultaneously ease with great ease

③ Diligence Computer being a machine did sudden harm to human health. Sudden shock and break of lenses from computer (laptop) screen. Unlike human being, a computer is free from memory (loving), it does not need concentration.

it can constantly work for hours without creating any humor and without stumbling.

if you give the millions of calculation if you perform the exactly same

④ Resource Sharing it make the sharing costely resources like printer in apart from device sharing. Data and information also be shared among group of computer does creating a large information and knowledge base.

⑤ Reliability Reliability is the performance of the computer which is measured from the determinism error.

⑥ Storage Capacity - The main of the computer is Relatively small and it can hold

only certain amount of information. Heir for the data is stored on the secondary storage device such as magnetic tape, disk.

① No thinking ability, ② Lack of decision making ability.

③ No I & O bind view. ④ Lack of cannot handle ambiguity, Ambiguity

⑤ Dependent on User
⑥ Dependent on Power supply
⑦ Cannot implement logic level logic without help
⑧ Cannot express thoughts & ideas using logic help

Generations of Computer

1. First Generation Computer (1942 - 1956)

- First Generation Computer were Vacuum tube based machine these computers used vacuum tube for memory and magnetic drum for memory.
- magnetic drum is a metal cylinder coated with magnetic iron oxide in which data and programs can be stored.
- Input was based punch card and paper tape and output was in the form of printout.
- Example - ENIAC → (Electronic Numerical Integrator and Calculator)

2. Second Generation Computer (1956 - 1963)

- Use Transistor instead of Vacuum Tube and Small in size and compare to first generation and it number of processing speed was more than 100 times than first generation.
- More consumption of electricity as compare to first generation computer.
- A C required to support Assembly language.
- Languages → IBM - 1620
- CDC - 1604

Characteristics of First Generation Computer

1. These computer were based on Vacuum tube technology.
2. These was the fastest computation device of their time.
3. These computer was very large and required a lot of space or installation.

Transferring to next

These for Non portable and very slow equipment.

- ⑤ Produce large amount of heat so AC is required for that.
- ⑥ Machine language is used as a programming language.
- ⑦ This is very expensive.

3. Third Generation (1964 to 1971)

- Use Integrated Circuit that combine many transistors on a single chip much faster.
- More Reliable larger and faster memory system supported more advance high level languages of IBM = 360
- $T_{DC} = 316$

fourth Generation (1971 to 1985)

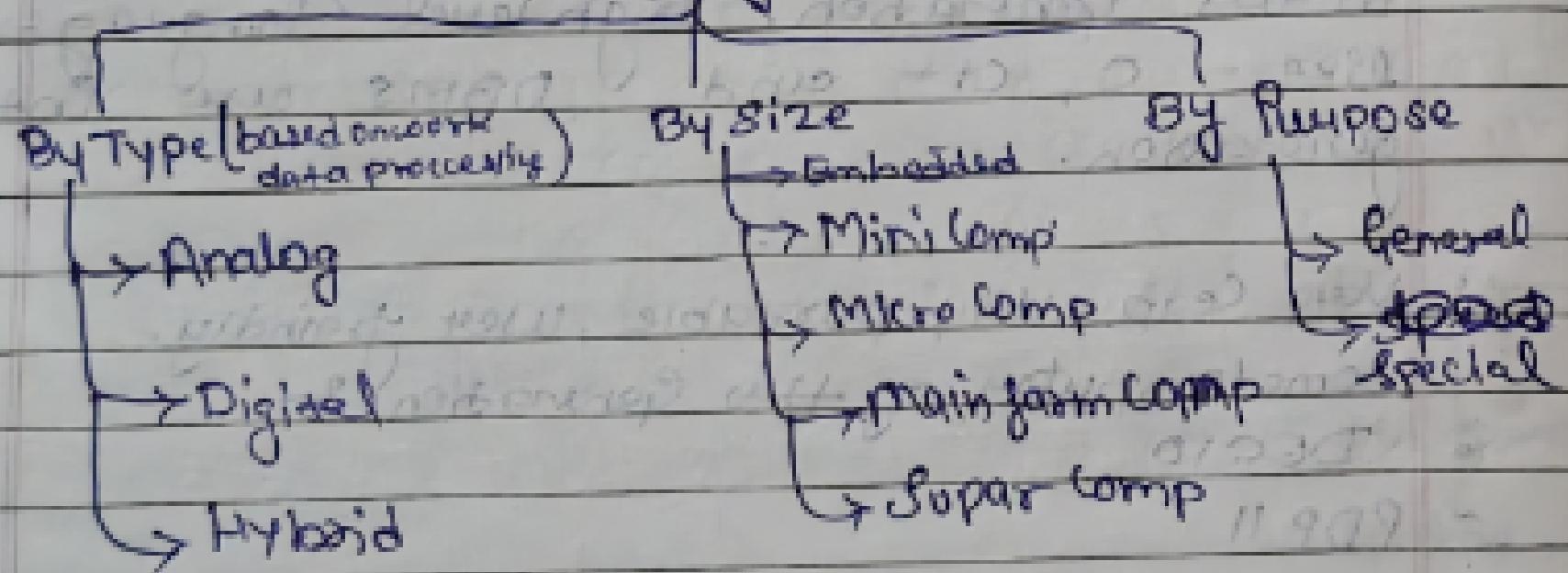
- Use of micro processors that integrate thousands of IC's into a single chips • LSIs or VLSI are two element both are core element of this generation.
- VLSI = Very large scale integration
- LSI = Large scale integrated Circuits
- micro computers or personal computers are developed in this Generation. high level languages like - C, C++ and DBMS use in this generation.
- Very cheap, very portable, user friendly. some computer of this Generation :-
 - DEC 10
 - PDP 11
 - CRAY-1
 - CRAY-X-MP
- Semiconductor was used for primary storage.

MATERIALS TO LEARN

Fifth Generation (1985 - till)

Focus on Artificial Intelligence and Parallel Processing Computers able to design to learn, reason, understand natural languages and solve complex problems used in research and development in AI. RAM and ROM are used for primary storage and Hardisk is used for secondary all high level programming language like - C, C++, Java, Python and .NET - VLSI - Ultra Large Scale Integration.

Classification of Computers :-



1. Analog - Process continuous analog data result in a form of ~~some~~ graph. Voltage, temp, pressure are measured using analog devices. like - Voltage in voltmeter, temp in thermometer, etc. ~~mag~~ at ~~freq~~.
2. Digital - Process Discrete Binary Data and provide process more accurate results. A Digital Computer is design to perform a Calculations and logical operations at high speed it takes raw Data as a input in the form of digits or binary numbers (0,1) and process the data using program stored with memory to generate the desired output ex. laptop, Desktop, Smartphones.
3. Hybrid - A hybrid computer combines the features of both analog and digital computers. it is as fast as an analog computer offering a memory, and accuracy by a digital computer.
 - it can process both continuous data like analog signals and digital data (digital signal)
 - Hybrid computers accept analog input signals and convert them into digital form before processing.

General Purpose

- Design to perform a range of task
- Ability to store numerous program
- Used for various common Application by any user eg word processing, playing music or video games etc.
- ~~Versatile~~
- ① Versatile but let into speed and efficiency

② Special Purpose

Design to perform Specific task a set of instruction inbuilt into the machine for the specific task cannot be use for other application but in versatility but can provide results very quickly and efficiently
eg satellite tracking, air traffic control.

