



COMPUTER AWARENESS

EPIISODE-1

**INTRODUCTION
CLASSIFICATION
GENERATION**



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Introduction to Computers



The literal meaning of **computer** is a device that can calculate. However, modern **computers** can do a lot more than calculate.



Computer is an electronic device that receives input, stores or processes the input as per user instructions and provides output in desired format.



It has the ability to store, retrieve and process data.

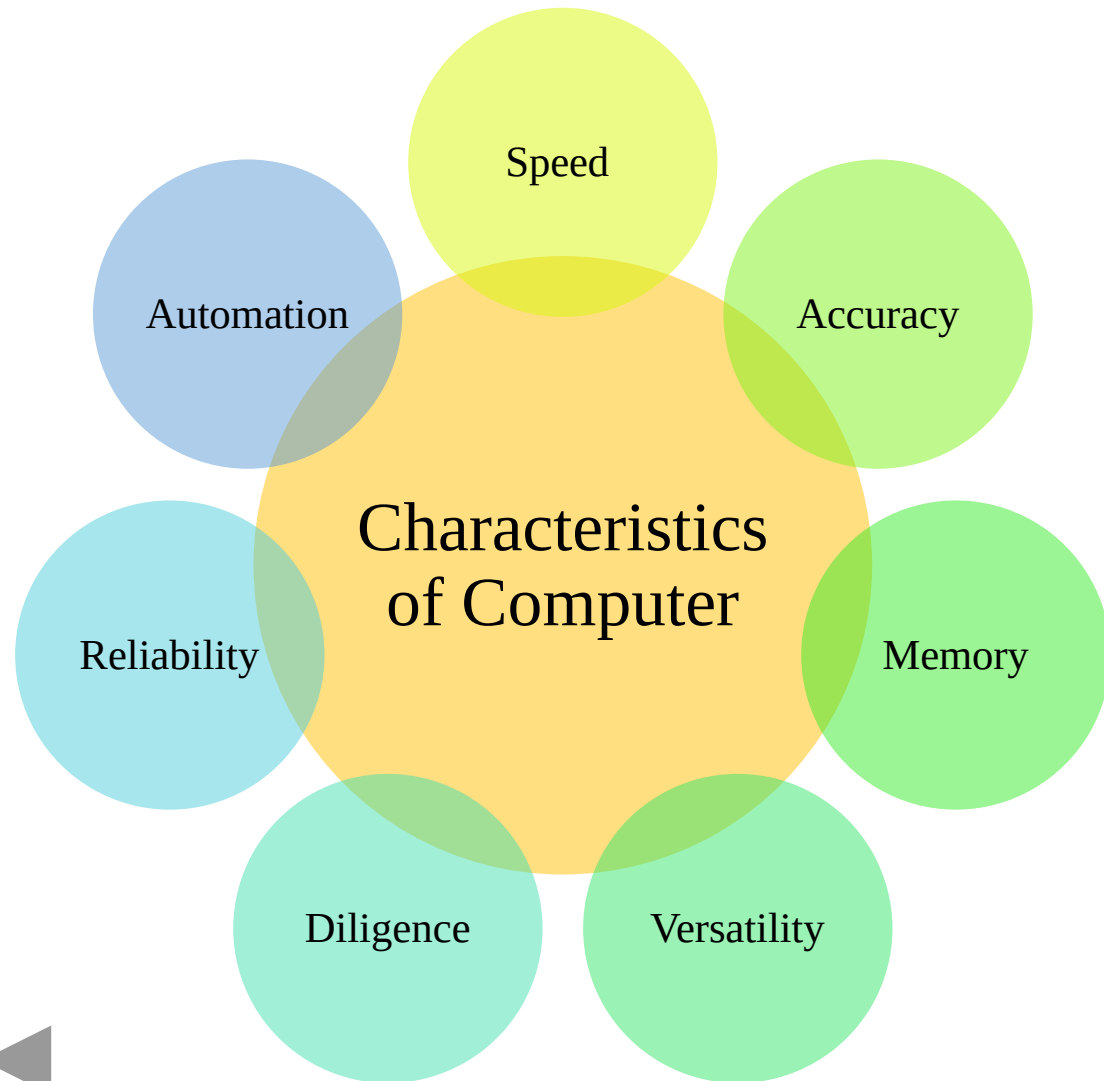


A computer is used to type documents, send E-mails and browse the internet. It is also used to handle accounting, database management, presentations, games and so on.





Features of Computers



Speed

The computer can process data very fast at the rate of millions of instructions per second

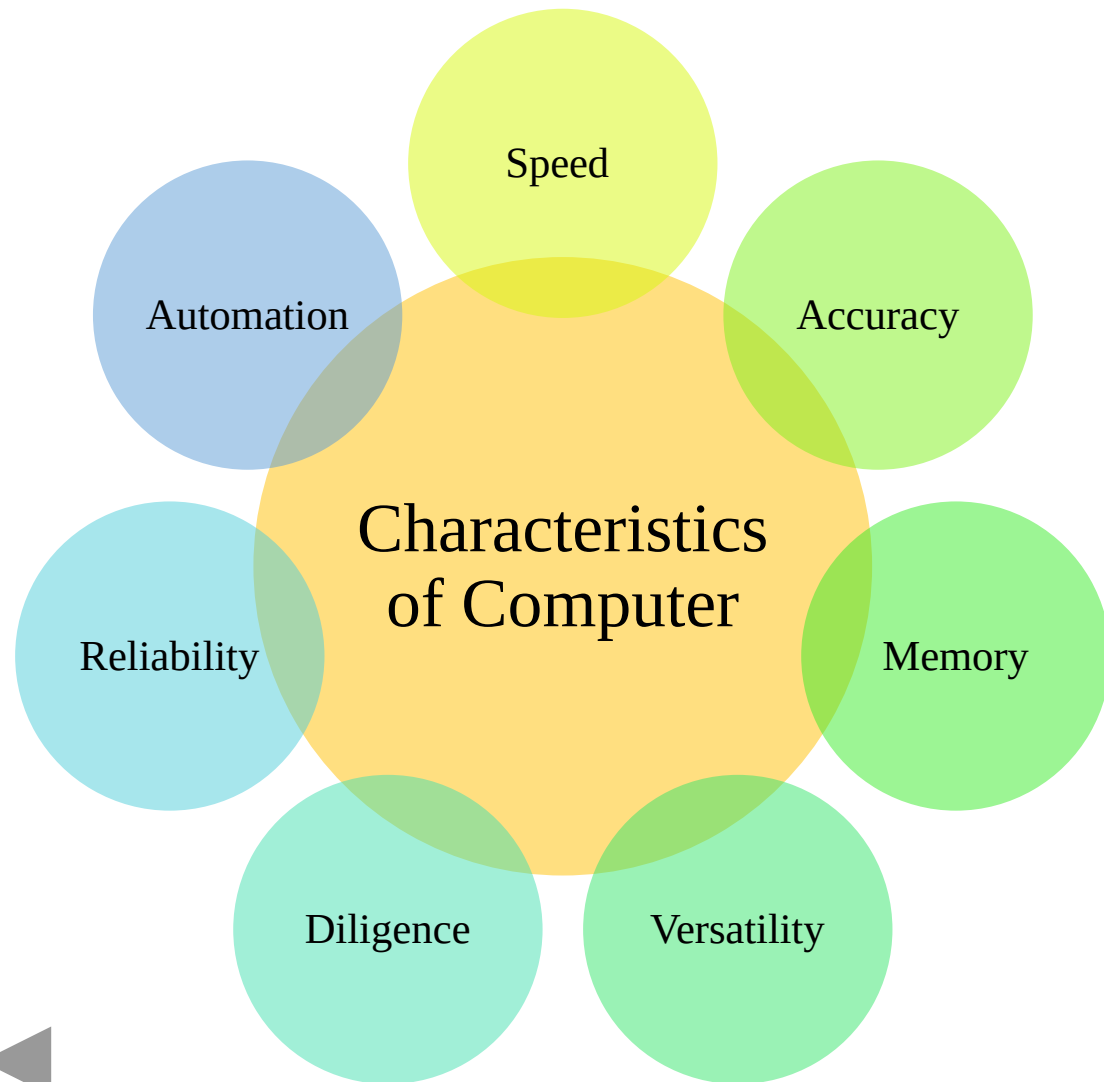
Accuracy

Computers provide a high degree of accuracy. They respond to the user as per the input instructions.

Memory

Computers are capable to store huge amount of data which depends on the capacity of hard disk.

Features of Computers



Versatility

Computers can do different types of work simultaneously. They can perform multiple tasks at a same time.

Diligence

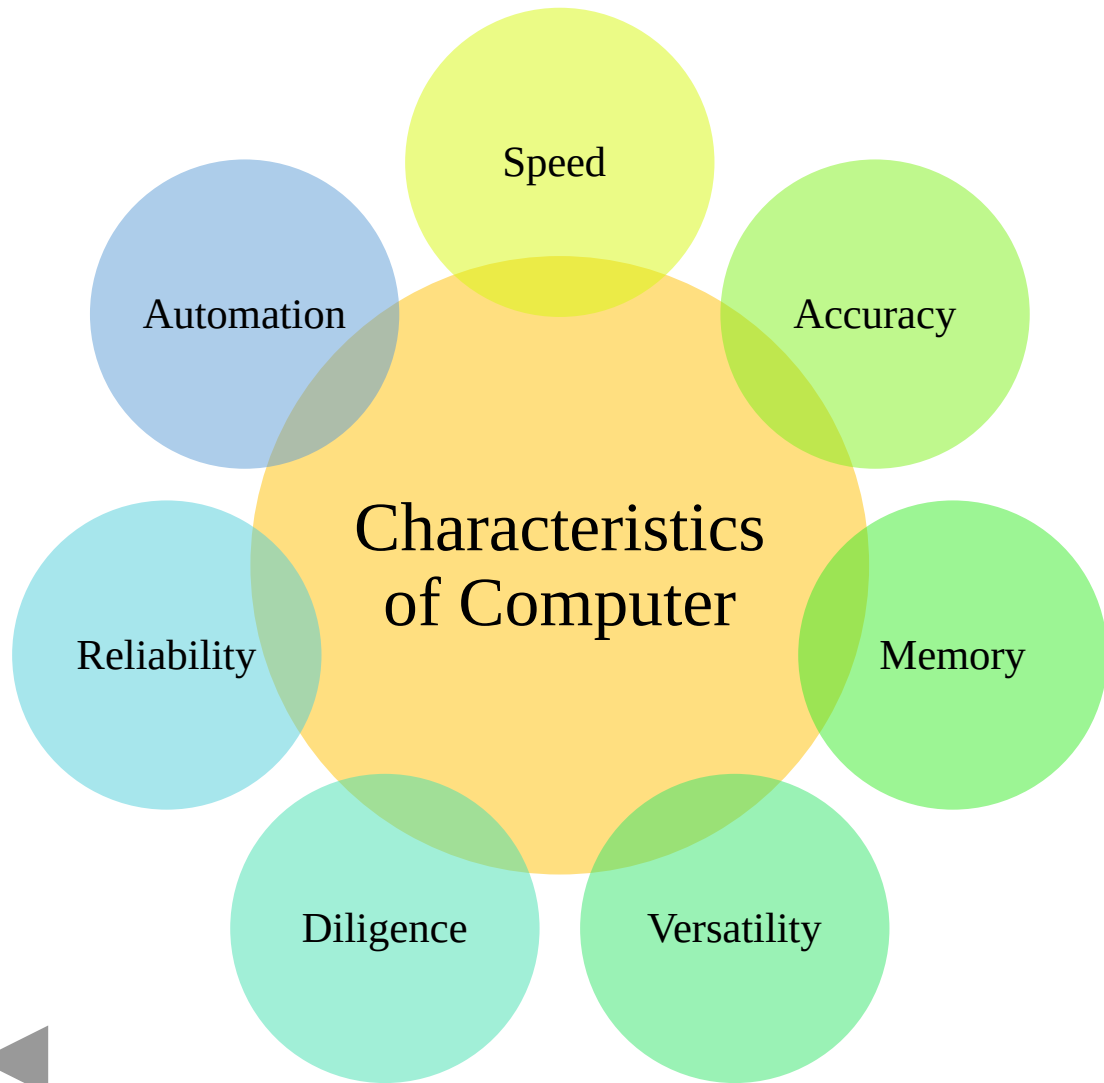
Unlike human beings a computer is free from monotony, tiredness, lack of concentration, etc and can work for hours without creating any errors.

Reliability

Computers are more reliable than human beings. Computers always produce exact results. The possibility of errors occur only if the input is wrong.



Features of Computers



Automation

Once the instruction to do any work is given to the computer, the computer does its work automatically by itself.





FUNCTIONING OF A COMPUTER

INPUT

Information or data that is entered into a computer is called input. It sends data and instructions to the central processing unit (CPU).

PROCESSING

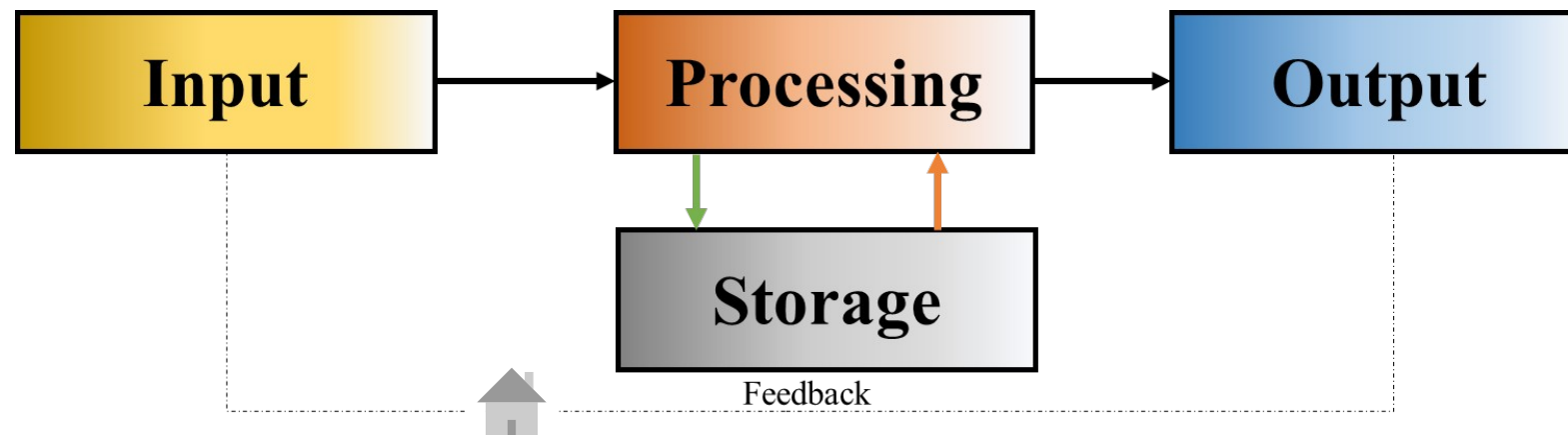
It is the sequence of actions taken on data to convert it into information which is meaningful to the user. It can be calculations, comparisons, or decisions taken by the computer.

OUTPUT

It makes processed data available to the user. It mainly used to display the desired result to the user as per input instructions.

STORAGE

It stores data and programs permanently. It is used to store information during the time of program execution and possible to get any type of information from it.



HISTORY OF COMPUTER



ABACUS (1602)

First mechanical calculating device.

Used for addition and subtraction operations.

Invented by china.



1600

1700

1800

2000

2100



HISTORY OF COMPUTER



NAPIER'S BONES (1617)



Three dimensional structure

Holding numbers from 0 to 9 only.

Represent graphical structure of calculating result.

Used for multiplication on numbers.

Invented by John Napier (Scotland) .

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HISTORY OF COMPUTER



PASCALINE (1642)



It is first mechanical **adding machine**.

Perform addition and subtraction of two numbers.

Invented by Blaise Pascal (France).

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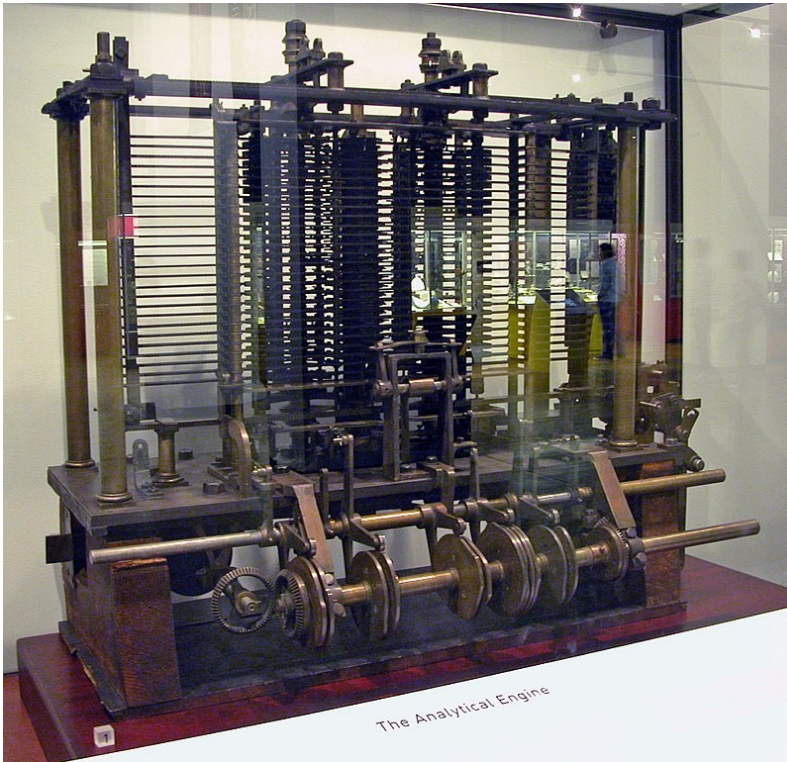
2100



HISTORY OF COMPUTER



ANALYTICAL ENGINE (1837)



First general purpose computer.

Stored program in the form of pegs also called barrels.

It was a decimal machine used sign and magnitude for representation of a number.

Invented by **Charles Babbage** from London (**Father of computer**)

1600

1700

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1900

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HISTORY OF COMPUTER



TABULATING MACHINE (1890)



It was the first electromechanical machine.

Read one card at a time.

Invented by Herman Hollerith (America).

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HISTORY OF COMPUTER



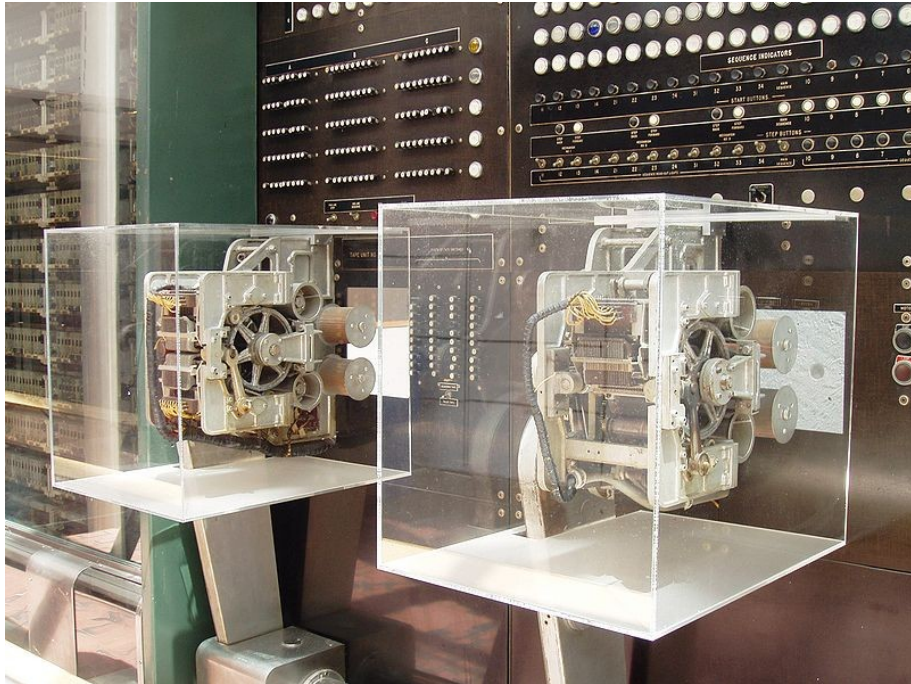
MARK – 1 (1944)

It consists of interlocking panels of small glass, counters, switches, and control circuits.

In this computer data can be entered manually.

Magnetic drums are used for storage

Invented by Howard Aiken (America).



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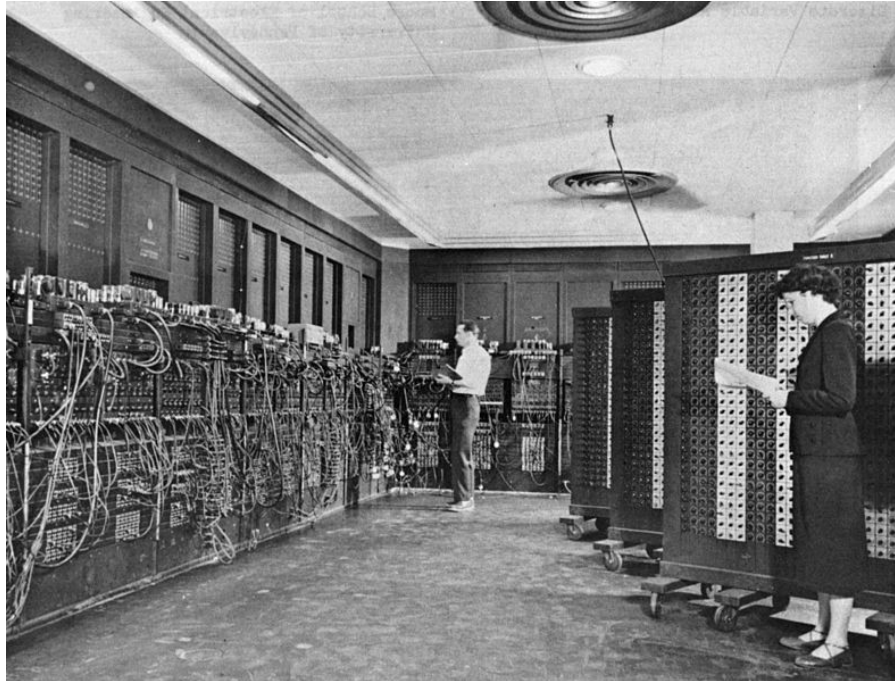
2000





HISTORY OF COMPUTER

ENIAC (1946)



It was first **electronic digital computer**.

It is a combination of twenty accumulators.

Used for weather prediction, atomic energy calculation and scientific users.

Invented by JP Eckert and JW Mauchly (America).



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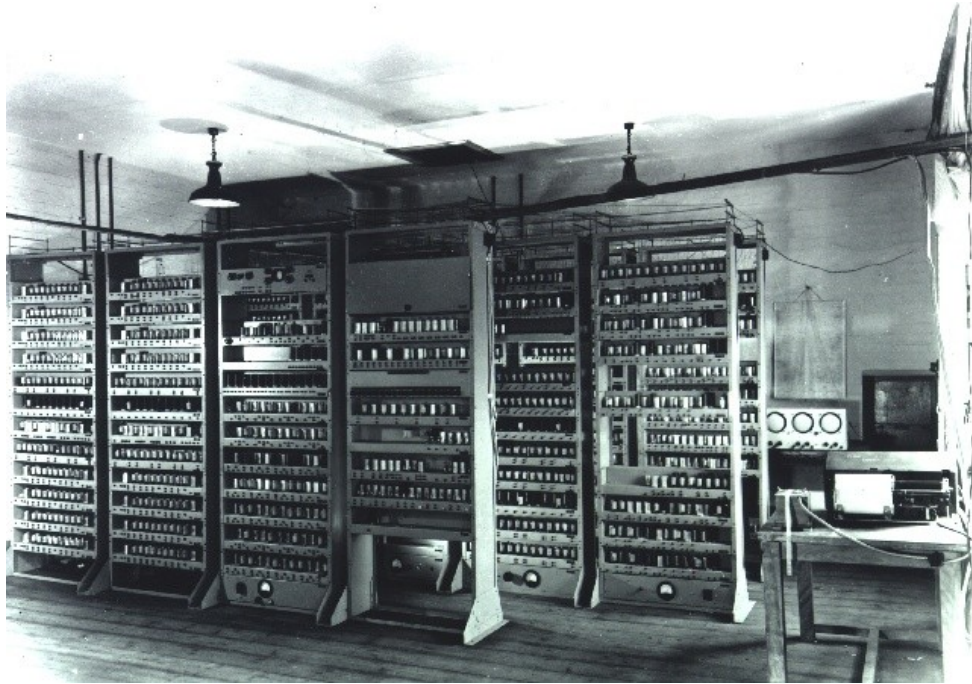
2000



HISTORY OF COMPUTER



EDSAC (1949)



It was first computer which provided storage capacity.

This is the first computer program was run on machine.

Invented by John Von Neumann (America).

1600

1700

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2000





HISTORY OF COMPUTER

UNIVAC (1951)



This is the first general purpose electronic computer with large amount of input and output.

Used magnetic tapes as input and output.

Invented by JP Eckert and JW Mauchly (America).

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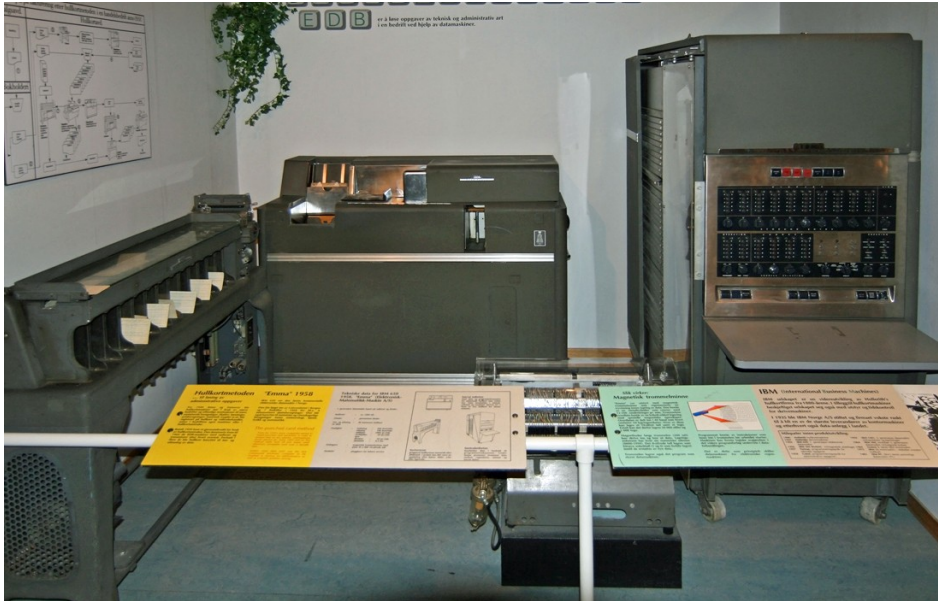
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HISTORY OF COMPUTER

IBM-650



It provided input or output units converting alphabetical and special characters to two digit decimal code.

Invented by IBM company

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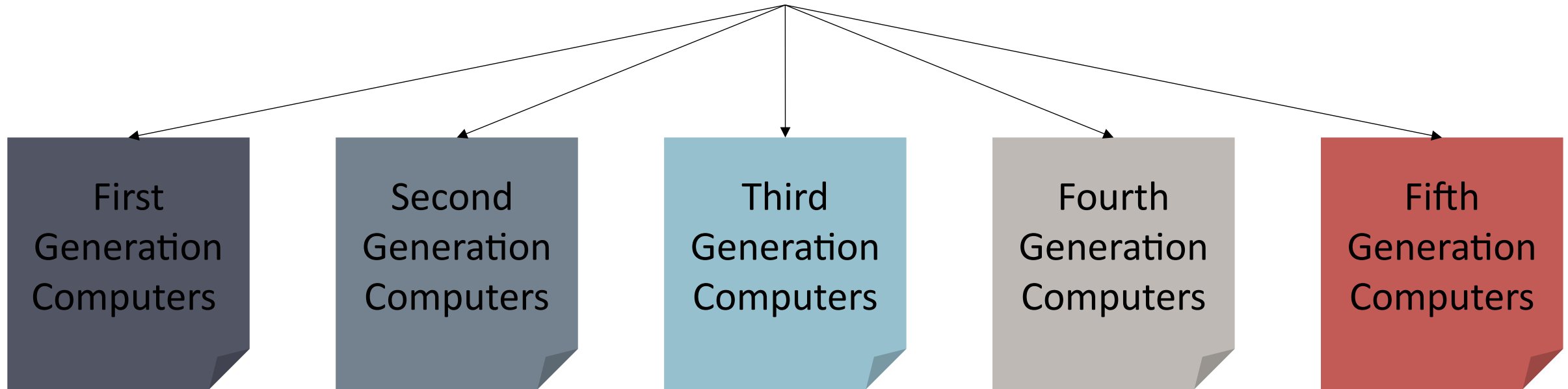
1900

2000





Generations of Computers






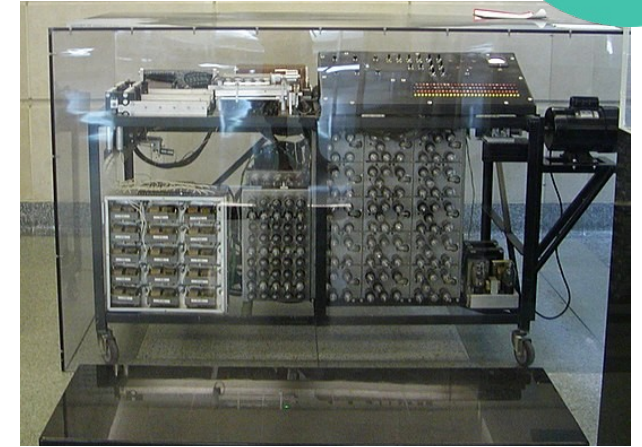
First Generation Computers



Switching Device ↔ Vaccum Tubes

Applications

-  ENIAC
-  UNIVAC
-  MARK-1 (scientific purpose)



1940 – 1956

Back to
Generation Of Computers



Second Generation Computers

Made up of semiconductor



Switching Device  Transistor

Applications

 PDP-8

 IBM-1401



1956-1963

**Back to
Generation Of Computers**





Third Generation Computers

Made up of silicon

Switching Device ↔ Integrated Circuits (ICs)

Applications

- 👉 NCR – 395
- 👉 B6500 (Database management system)



1964- 1971

**Back to
Generation Of Computers**



Fourth Generation Computers

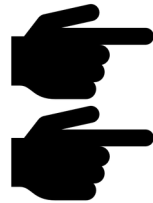


Switching Device



Large scale integrated circuit (LSI) microprocessor

Applications



Intel 4004 chip

macintosh (Distributed systems)



1971 – present

Back to Generation Of Computers



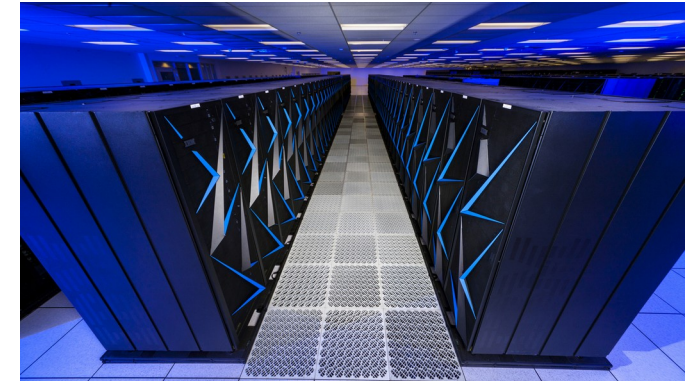
Fifth Generation Computers



Switching Device ↔ Super large scale integrated chip (SLSI)

Applications

☞ Robotics (Artificial Intelligence).



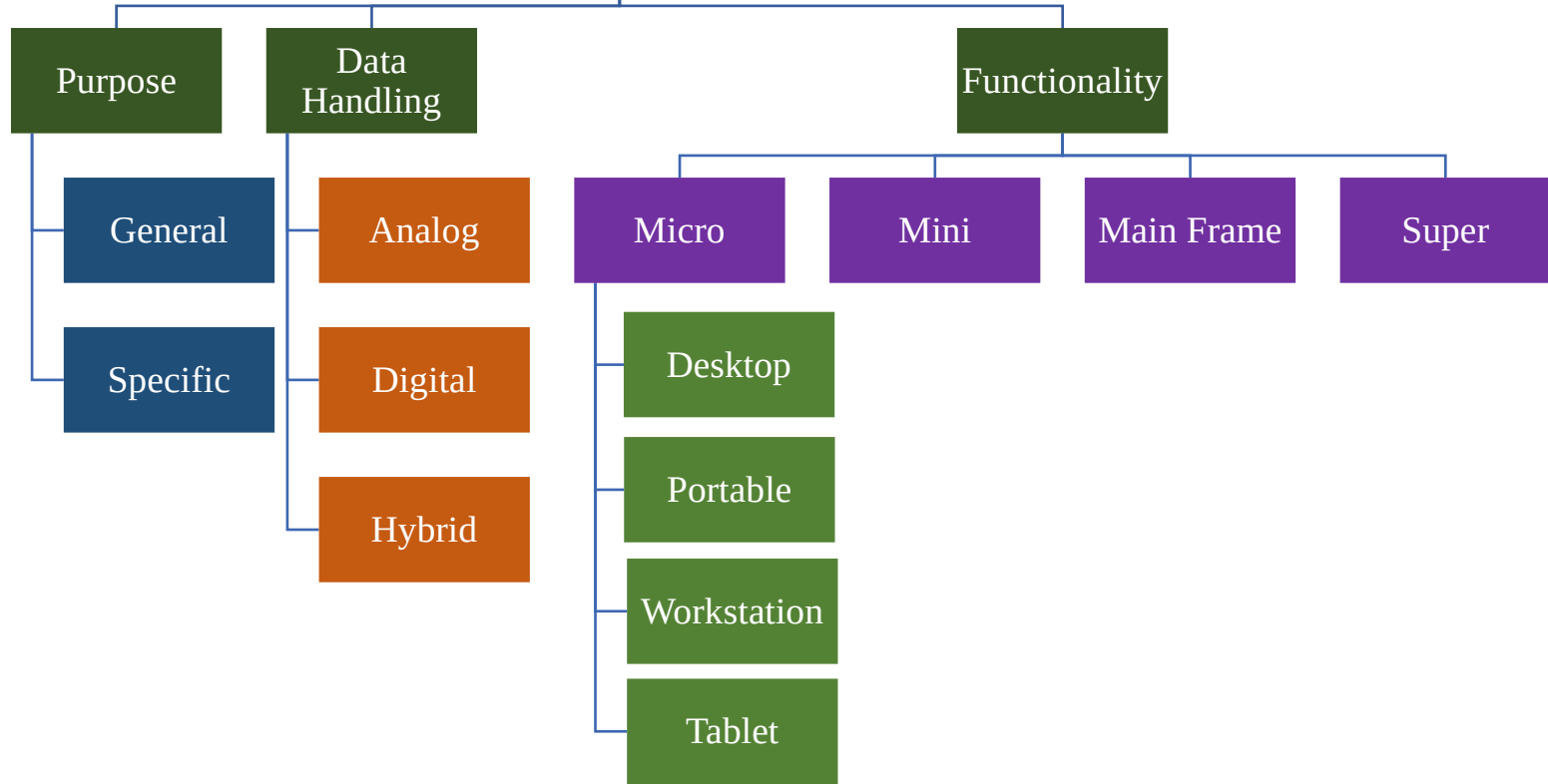
Present

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Classification of Computers





Classifications of Computer

BASED ON PURPOSE

General purpose computer

- Which are used to solve variety of problems by changing the program or instructions.
- To make small database, accounting, calculations etc.

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Classifications of Computer

BASED ON PURPOSE

Special purpose computer

- **Special-Purpose Computer** are designed to be task specific and most of the times their job is to solve one particular problem.
- They are also known as dedicated computers, because they are dedicated to perform a single task over and over again
E.g. Automatic aircraft handling, multimedia computer, weather forecast etc.

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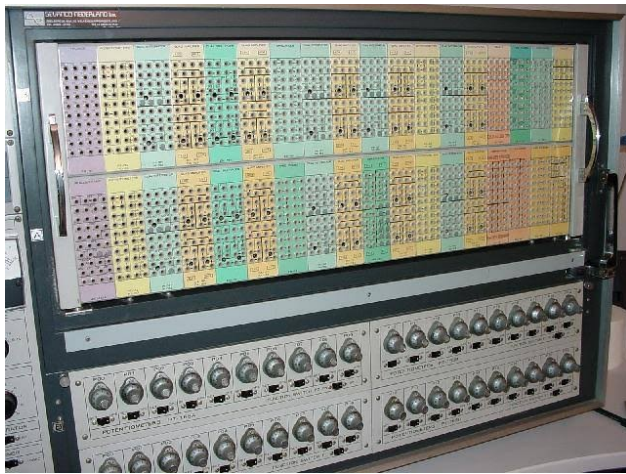




Classifications of Computer

BASED ON DATA HANDLING OR WORK

Analog Computer



- These computers carry out arithmetic and logical operations by manipulating and processing of data e. g. Speedometers, telephone lines etc.
- Analog computer can perform several mathematical operations simultaneously.
- It uses continuous variables for mathematical operations and utilizes mechanical or electrical energy.

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Classifications of Computer

BASED ON DATA HANDLING OR WORK

Digital Computer



- These do work by calculating the binary digits, a digital computer, not only performs mathematical calculations, but also combines the bytes to produce desired graphics, sounds e.g. Desktop(PC)

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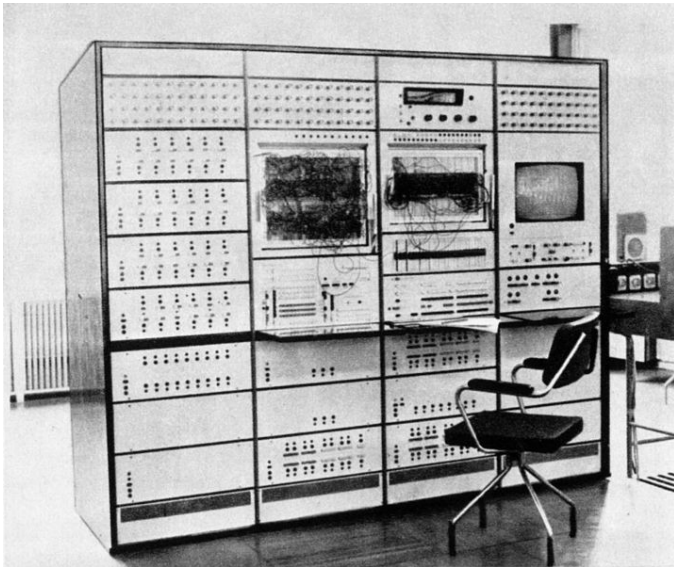




Classifications of Computer

BASED ON DATA HANDLING OR WORK

Hybrid computers



- Hybrid computers are computers that exhibit features of analog computers and digital computers.
- The digital component normally serves as the controller and provides logical and numerical operations, while the analog component often serves as a solver of differential equations and other mathematically complex equations.
- These computers used in hospitals like ECG and DIALYSIS.

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Classifications of Computer



BASED ON FUNCTIONALITY

Microcomputer



- A microcomputer is a small, relatively inexpensive computer with a microprocessor as its central processing unit (CPU).
- It includes a microprocessor, memory and minimal input/output (I/O) circuitry mounted on a single printed circuit board (PCB).

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Classifications of Computer

TYPES OF MICROCOMPUTER :

Desktop Or Personal Computer



- These are small, relatively economical computers.
- These are based on the microprocessor technology.

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Classifications of Computer

TYPES OF MICROCOMPUTER :

Laptop



- These computers are also known as ultra book Or notebook.
- These are portable and light weighted.
- They include rechargeable battery, so these can work anywhere.

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Classifications of Computer

TYPES OF MICROCOMPUTER :

Workstation Computer



- A workstation is a special computer designed for technical or scientific applications.
- Intended primarily to be used by one person at a time, they are commonly connected to a local area network and run multi-user operating systems.

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Classifications of Computer

TYPES OF MICROCOMPUTER :

Tablet Computer



- A tablet computer, commonly shortened to tablet, is a mobile device, typically with a mobile operating system and touchscreen display processing circuitry, and a rechargeable battery in a single, thin and flat package.
- Tablets, being computers, do what other personal computers do, but lack some input/output (I/O) abilities that others have.

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Classifications of Computer

BASED ON FUNCTIONALITY AND SIZE

Minicomputer



- These are smaller in size, faster, and cost lower than mainframe computers.
- Initially, the minicomputer was designed to carry out some specific tasks, like engineering and CAD calculations.
- Minicomputers are IBM-17, DECFDP-11, HP-9000, etc.

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Classifications of Computer

BASED ON FUNCTIONALITY AND SIZE

Mainframe Computer



- These types of computers having large internal memory storage and comprehensive range of software.
- Mainframe computer serves as a backbone for the entire business world.
- It is considered as the heart of a network of computers or terminals that allow a large number of people to work at the same time.
- Mainframe computers are IBM-370, IBM-S/390, UNIVAC-1110, etc.

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Classifications of Computer

BASED ON FUNCTIONALITY AND SIZE

Supercomputer



- A supercomputer is a computer with a high level of performance as compared to a general-purpose computer.
- The performance of a supercomputer is commonly measured in floating-point operations per second (FLOPS) instead of million instructions per second (MIPS).
- Supercomputers play an important role in the field of computational science, and are used for a wide range of computationally intensive tasks in various fields, including quantum mechanics, weather forecasting, climate research, oil and gas exploration, molecular modeling etc.

World's first super computer : CRAY - 1

India's first super computer : PARAM

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'Hurrah!'

We completed this section.



Next Section
Coming
Soon...

