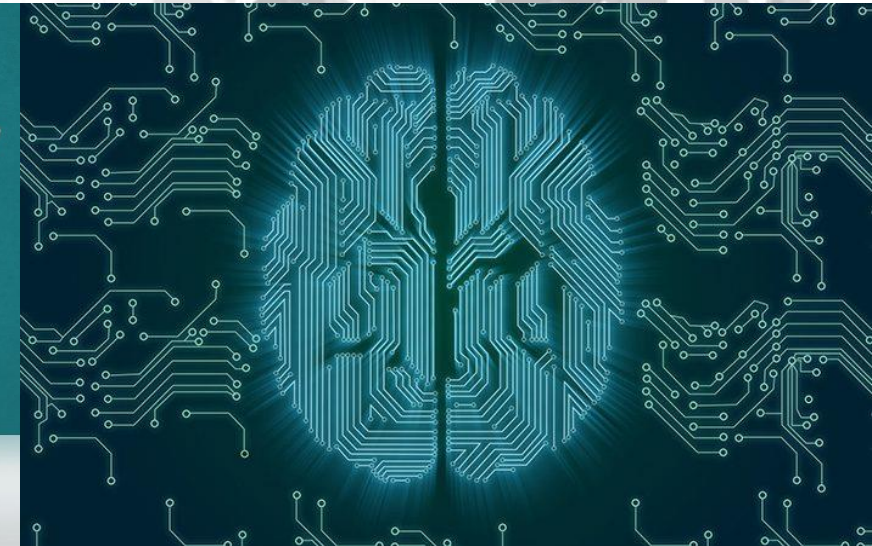




COMPUTER KNOWLEDGE

Special compilation for EPFO Exam



Course By – Dikshant Sharma

LECTURE 1 - Scope

I. Brief history

II. Generations of Computers

III. Definition & Working

IV. Types of computers

- By Type
- By Size
- By Purpose

V. Components

- Hardware – Motherboard, CPU, Input & Output Devices & Memory

Brief History of Computers



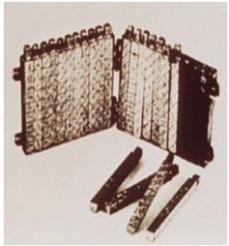
☐ 4000 Years ago – Chinese invented ABACUS

- Known to be the first mechanical calculating device used to perform addition & subtraction



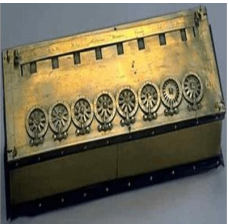
☐ Napier's Bones

- Manually-operated calculating device which was invented by John Napier (1550-1617) – It could perform multiplication & division



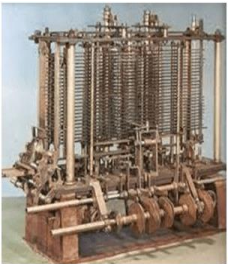
☐ Pascal Calculator or Pascaline

- Arithmetic Machine invented between 1642 and 1644 by a French mathematician-philosopher Blaise Pascal.
- Pascaline was the first calculating device with a capability to perform additions and subtractions on whole numbers



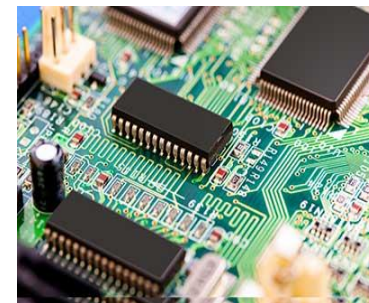
☐ Analytical Engine

- Developed by Charles Babbage in 1830.
- It was capable of solving any mathematical problem and storing information as a permanent memory



Generation of Computers

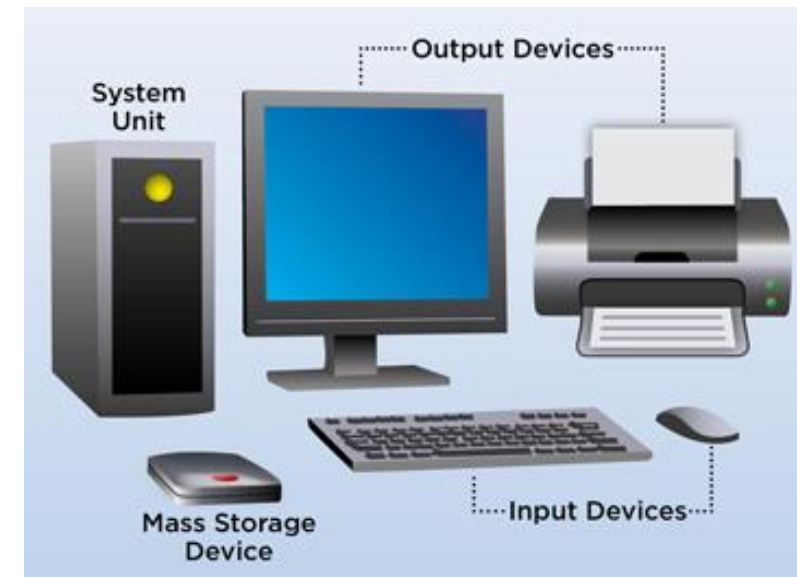
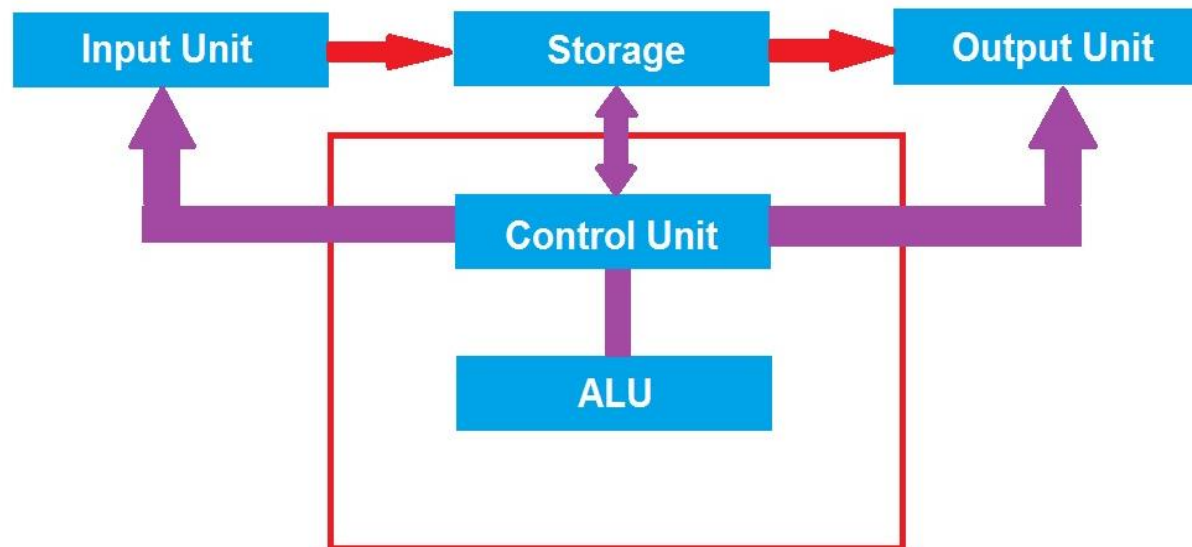
Subject	1st generation	2nd generation	3rd generation	4th generation	5th generation
Period	1940-1956	1956-1963	1964-1971	1971-present	present & beyond
Circuitry	Vacuum tube	Transistor	Integrated chips (IC)	Microprocessor (VLSI)	ULSI (Ultra Large Scale Integration) technology
Memory Capacity	20 KB	128KB	1MB	Magnetic core memory, LSI and VLSI. High Capacity	ULSI
Processing Speed	300 IPS instructions Per sec.	300 IPS	1MIPS (1 million inst. Per sec.)	Faster than 3rd generation	Very fast
Programming Language	Machine, Language	Assembly language & early high-level languages(FORTRAN, COBOL, ALGOL)	C,C++	Higher level languages,C,C++,Java	All the Higher level languages,,Neural networks,
Example of computers	UNIVAC, EDVAC	IBM 1401, IBM 7094, CDC 3600,D UNIVAC 1108	IBM 360 series, 1900 series	Pentium series,Multimedia,	Artificial Intelligence, Robotics



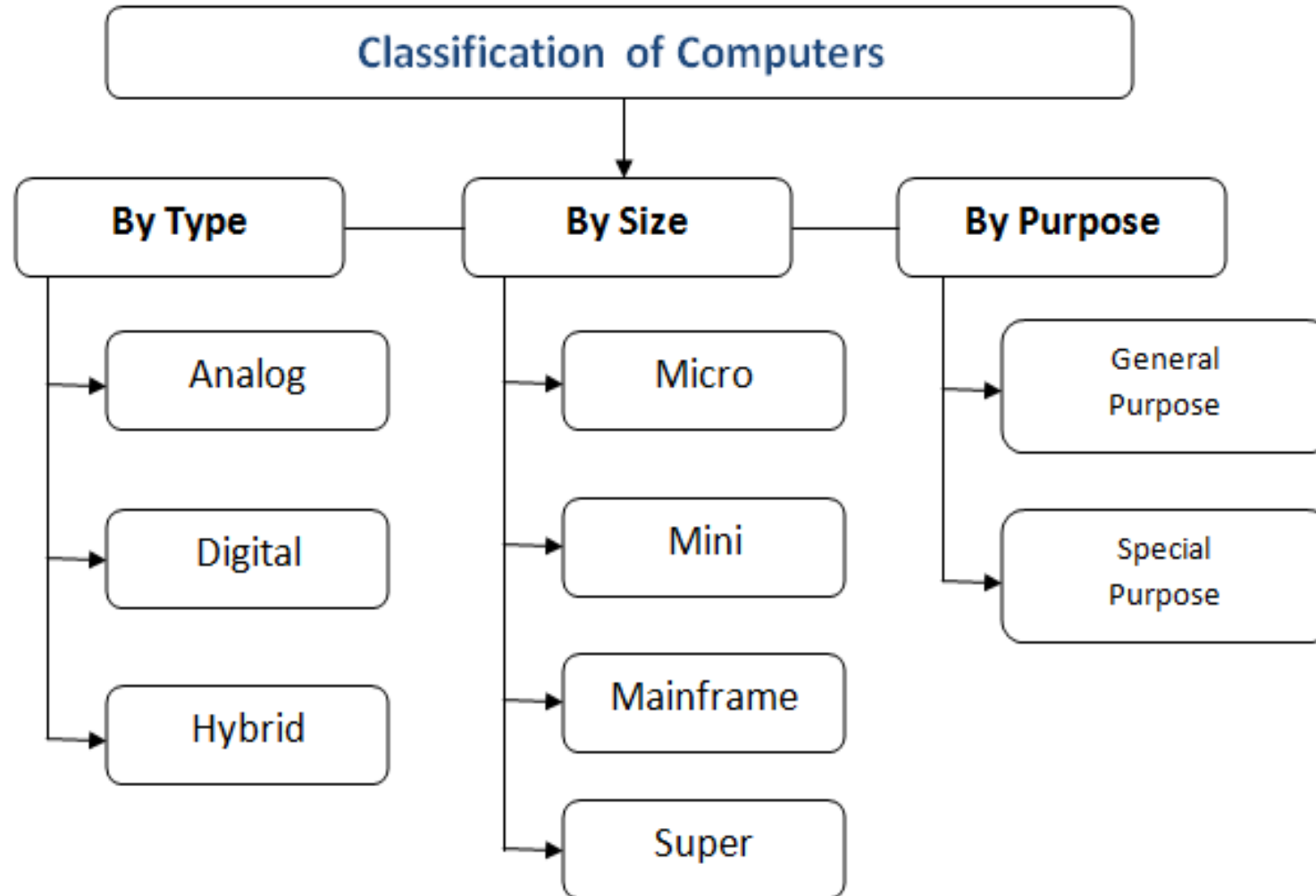
What is a Computer?

DEFINITION –

It is an electronic programmable device for storing and processing data, typically in binary form, according to instructions given to it in a variable program.



Types of Computers



Components of Computers

❖ Hardware

- Motherboard
- CPU
- Input Devices
- Output Devices
- Memory / Storage Devices



❖ Software

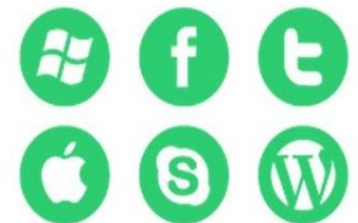
- System Software (Operating System)
- Application Software
- Utility Software

HARDWARE



VS

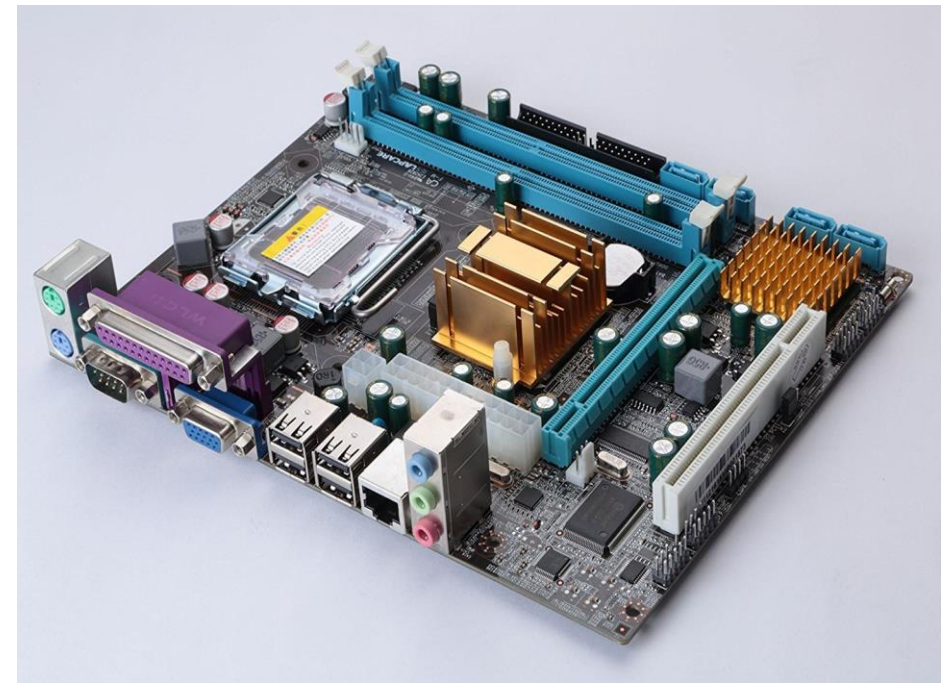
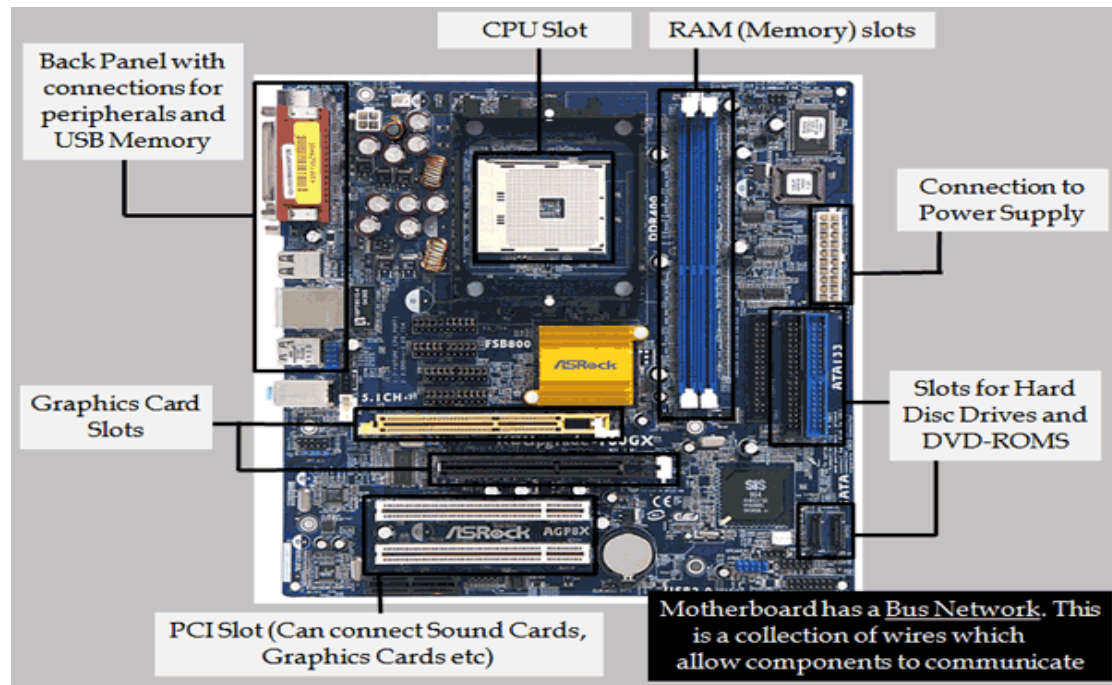
SOFTWARE



Computer Hardware

MOTHERBOARD

- Also known as system board
- All the other boards are connected to this board
- It contains – CPU chip, Memory Chip, RAM/ROM, Input Output controller etc.

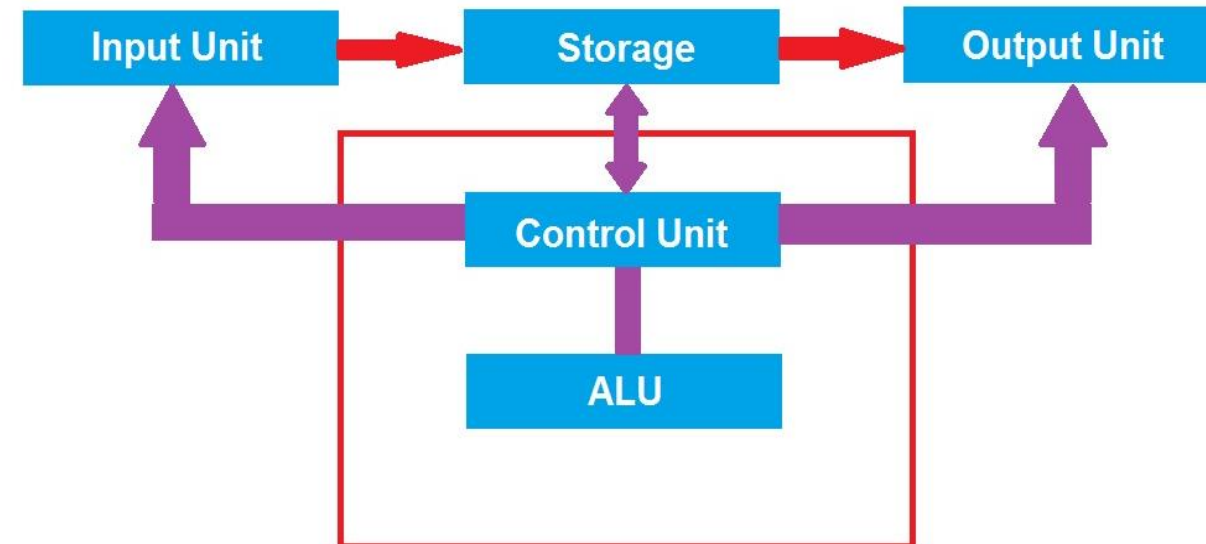
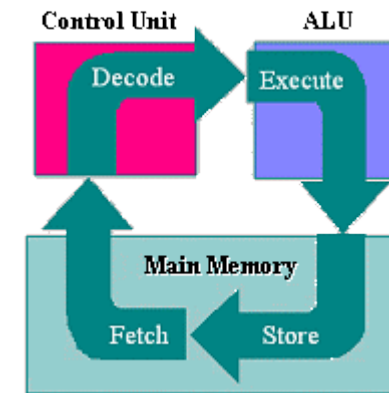


Computer Hardware



CENTRAL PROCESSING UNIT

- The part of a computer in which operations are controlled and executed.
- Also called a central processor or main processor
- **Control Unit**
 - Controls the machine cycle
- **Arithmetic logic unit**
 - Executes the computers commands
 - Can do either arithmetic operations or logical operations



Computer Hardware



INPUT DEVICES

- Provides man to machine communication
- Input can be in any form such as – Mechanical, Graphical, Audio, Visual
- **Important Input Devices –**
 - MICR
 - OMR
 - Bar Code Reader



Computer Hardware



OUTPUT DEVICES

- Used to produce data and information generated by a computer
- Converts electronic signals from machine to human understandable form
- **Important Output Devices –**
 - Monitors
 - Printers (Impact & Non-impact Printers)
 - Projectors

SPEAKER



MONITOR



HEADPHONE



Output Devices of Computer

PLOTTER



PROJECTOR



PRINTER



Computer Hardware



INPUT / OUTPUT DEVICES

- **MODEM** – Modulator – Demodulator
First converts from analog to digital & then digital to analog
Enables transmission through telephone lines
- **TOUCHSCREEN** – Simultaneous input-output



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PREVIOUS YEAR QUESTIONS

1. Which one of the following is not a basic function of a computer?

- A. Accept & Process Data
- B. Store Data
- C. Scan Text
- D. Accept Input

2. Which one of the following is hardware?

- A. Power Point
- B. Control Unit
- C. Pointer Driver
- D. Operating System

3. The devices that work with computer systems as soon as they are connected are also described as –

- A. Hot Swapping
- B. Bay Swap
- C. Plug-N-Play
- D. USB Swapping

PREVIOUS YEAR QUESTIONS

4. Which of the following are components of Central Processing Unit (CPU) ?

- | | |
|---|--|
| A. Arithmetic logic unit, Mouse | B. Arithmetic Logic Unit, Control Unit |
| C. Arithmetic Unit, Integrated Circuits | D. Control Unit, Monitor |

5. Which among following first generation of computers had ?

- | | |
|-----------------------------------|------------------------|
| A. Vacuum Tubes and Magnetic Drum | B. Integrated Circuits |
| C. Magnetic Tape & Transistors | D. All of the above |

6. What is the name of first super computer of India ?

- | | |
|-------------|---------------|
| A. SAGA 220 | B. PARAM 8000 |
| C. ENIAC | D. PARAM 6000 |