S.P.M College,Udantpuri

Bachelor Of Computer Application (BCA)

Part -1 – Hira Kumar

Computer Fundamentals

Generation Of Computer

After the second world war, On the basis of hardware technology used, computers were divided into five parts, which we called Generation of Computers. Which are as follows –

Thus 5 Generations of Computers :-

Generations	Time-Period	Technology Used
1st Generation	1940 – 1956	Vacuum Tube Based
2nd Generation	1956 – 1963	Transistor Based
3rd Generation	1964 – 1971	Integrated Circuit Based
4th Generation	1971 – Present	Microprocessor Based
5th Generation	Present – Future	Artificial Intelligence Based

1. 1st Generation (प्रथम पीढ़ी)

Years	**1940 – 1956**
Switching Devices	Vacuum tubes
Storage Devices	Magnetic drums
Speed	milli seconds
Programming Language	Machine language (Binary numbers 0's and 1's)
Operating Systems	Batch processing
Feature / Characteristics	Limited Storage, Slow I/O, large space for installation, Generate large amount of heat, More Power Consumption,Need AC
Use/Application	Used for scientific calculations/purpose.
Input/Output Devices	Paper tape and punched cards.
Example	IBM 650, IBM 701, ENIAC, UNIVAC1, MARK-1

Vacuum tubes

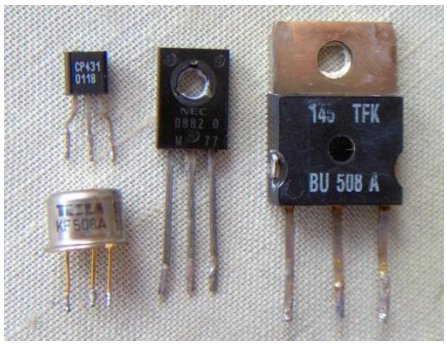
Magnetic drums

IBM 650

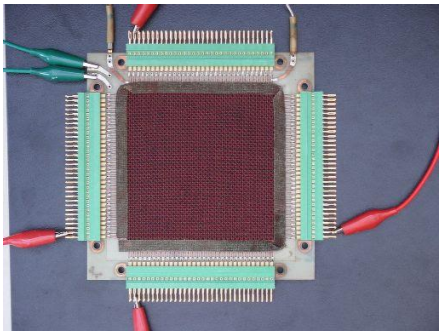
2. 2nd Generation (दूसरी पीढ़ी)

Years	**1956 – 1963**
Switching Devices	Transistors (Made up of semiconductors)
Storage Devices	Magnetic core
Speed	micro seconds
Programming Language	Assembly language, Early high level language
Operating Systems	Time sharing OS, Multitasking OS

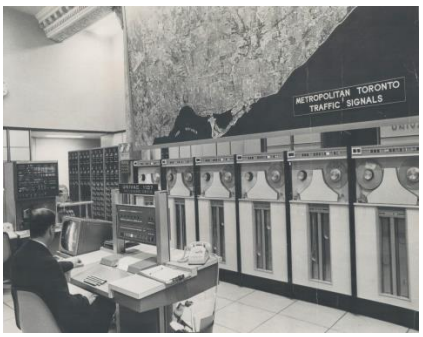
Feature / Characteristics	Faster & Smaller than the first generation computers, Generated less amount of heat, Higher capacity of internal storage
Use/Application	Used for commercial use, Engineering Fields/application
Input/Output Devices	Magnetic tape and punched cards.
Example	PDP-8, IBM1400 series, IBM 7090 and 7094, UNIVAC 1107, CDC 3600



Transistors



Magnetic core

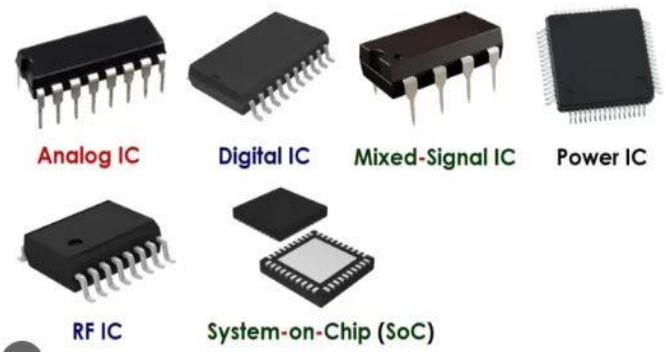


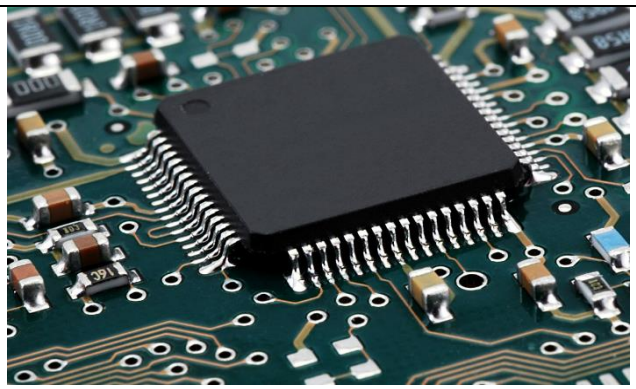
UNIVAC 1107

3. 3rd Generation (तीसरी पीढ़ी)

Years	**1964 - 1971**
Switching Devices	Integrated Circuits (ICs) - Made up of silicon
Storage Devices	Large magnetic core, magnetic tape/disk.
Speed	Nano seconds
Programming Language	High level language (FORTRAN, COBOL, ALGOL)
Operating Systems	Real-time system
Feature / Characteristics	High processing speed, use of operating system,Smaller,faster, more relible
Use/Application	Database management system, Online System
Input/Output Devices	Magnetic tape, monitor, keyboard, printer, etc.

Example	IBM 360, IBM 370, PDP-11, NCR 395, B6500, UNIVAC 1108





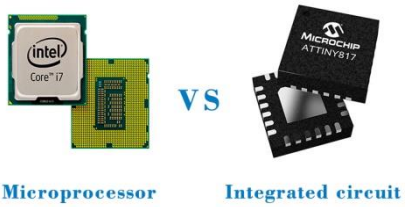
Integrated Circuits (ICs) - Made up of silicon

Large Magnetic Core **Magnetic Tap/Disk**

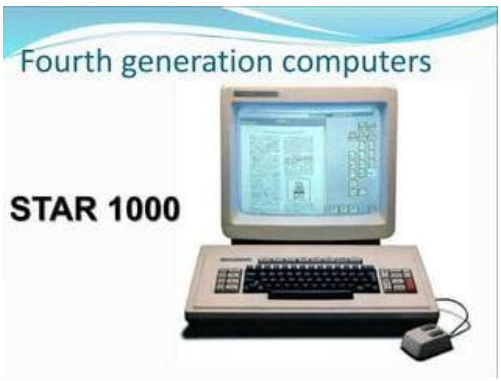
IBM - 360

4. 4th Generation (चौथी पीढ़ी)

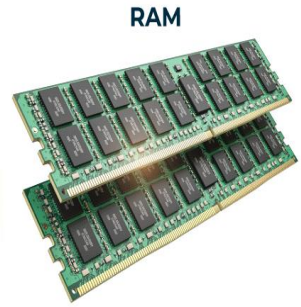
Years	**1971 - Present**
Switching Devices	Large Scale Integrated (LSI) circuit /VLSI, microprocessor/CPU
Storage Devices	Semiconductor memory, Winchester disc/Hard Disk
Speed	pico seconds
Programming Language	PASCAL, ADA, COBOL-74, FORTRAN IV
Operating System	Time sharing OS
Feature / Characteristics	Very fast, Very low heat generation, Smaller in size, Very reliable
Use/Application	Electronic fund transfer, Commerical Uses, Personal Uses/pc,ATM,Banking,….
Input/Output Devices	pointing devices, optical scanning, keyboard, monitor, printer, etc.
Example	IBM PC, STAR 1000, APPLE II, Apple Macintosh, Alter 8800, INTEL 4004 etc.



IBM PC



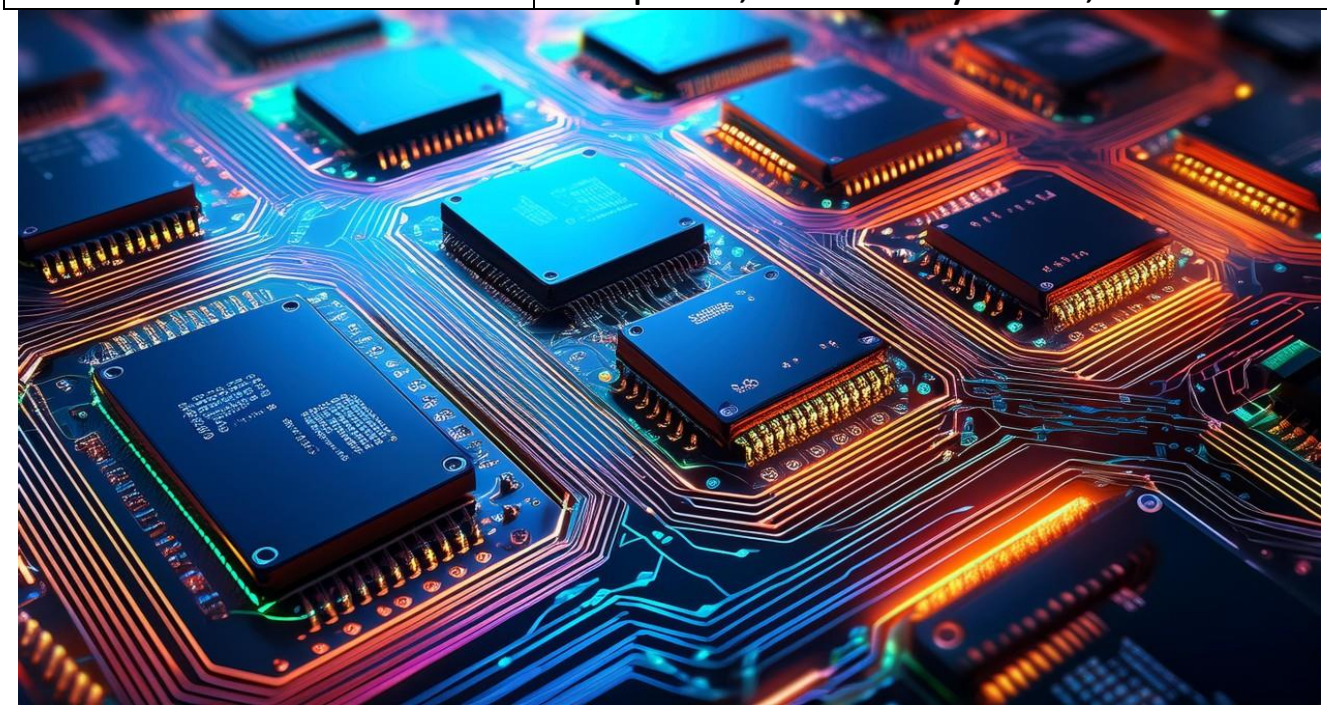
STAR 1000

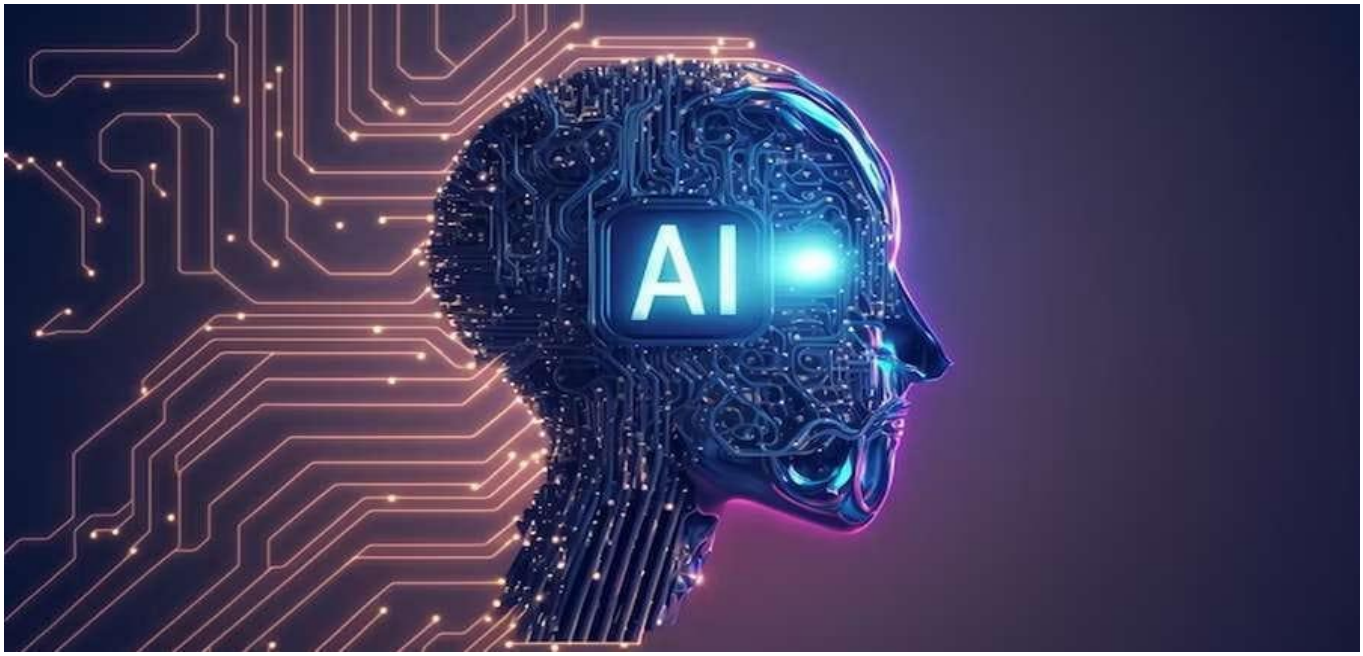


Semi conductor memory

5. 5th Generation (पांचवी पीढ़ी)

Years	**Present – Future**
Switching Devices	Super Large Scale Integrated (SLSI) chips/ULSI (ultra)
Storage Devices	Optical disc
Main Technology	**AI -** Artificial Intelligence
Features	**Human like decision making, robotics, parallel processing,natural language processing,…….**
Example	Robotics,neural network,quantum computer,AI based systems,…..





==========HIRA KUMAR ==========