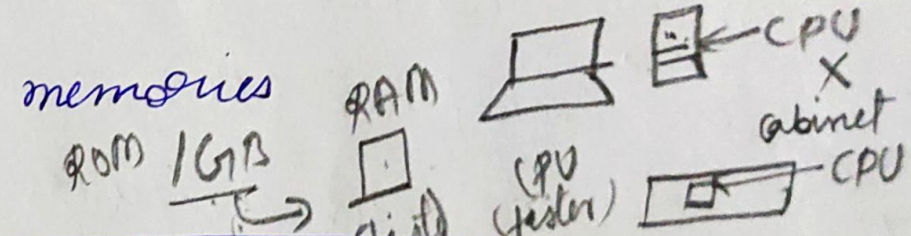
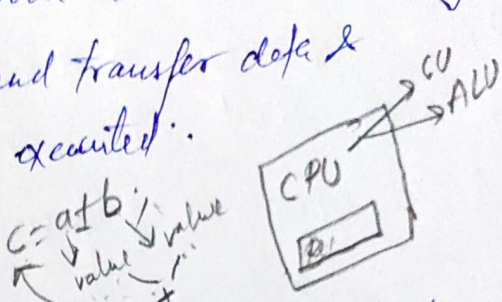
iii/- Memory – It is a storage device, which is used to store the data, programs and the instructions in binary forms.

There are generally 2 types of memories



- Memory
  - Internal memory (inside the computer) (Primary)
    - Read/Write memory (RAM)
      - Static RAM
      - Dynamic RAM
    - Read Only memory (ROM)
      - Erasable ROM
      - Permanent ROM
  - External memory (outside the computer) (secondary)
    - Sequentially accessible (Magnetic tape)
    - Randomly accessible (Floppy, CD, Pendrive)

iii)- Register array → These are the small additional memory location which are used to store and transfer data & programs that are currently being executed.



Evolution of Microprocessors - IC

→ In 1960, world's first MOS transistor was developed in Bel Laboratory, by Mohamed Atalla and Dawon Kahng.

1971 - Intel corporation USA developed first microprocessor Intel 4004. It was a 4-bit processor. IC

1972 - Intel developed first 8-bit processor Intel 8008

1976 - Intel launched the 8085 microprocessor. Motorola launched MC6809.

1978 - Intel launched first 16-bit microprocessor Intel 8086 ✓

1980 - Intel launched Intel 8080, 80186, 80188 processor for use in personal computer. ✓ → Apple Macintosh. PC

1985 - Intel launched world's first 32-bit microprocessor Intel 80386 DX ✓

1993 Intel introduced world's first 64-bit microprocessor Intel 'Pentium' microprocessor based on CMOS Technology.

1997 - Intel Pentium - II

1999 - Intel Pentium - III

2001 - Intel Pentium - IV

2006 - Intel Core 2 duo

500 MHz

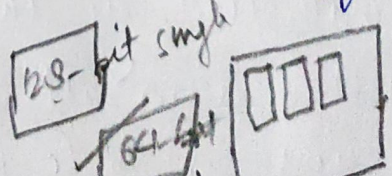
(1.4 GHz clock speed)

(multi-core processor)

IBM - 204

1000-core

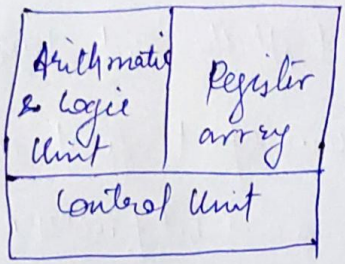
tera-core



iv) Microprocessor or CPU

→ A microprocessor is designed to perform arithmetic & logic operations that make use of small storage registers.

→ Basic operations performed by microprocessors are- adding, comparing, transfer of data etc.



The microprocessor can be divided into 3 segments as-

i)- Arithmatic / Logic Unit (ALU)

→ All the operations on a microcomputer is performed by the ALU.

→ It operates on the basis of commands given by the control unit.

→ Arithmatic operation → addition, substraction etc.
Logical operation → OR, AND, EX-OR etc.

ii)- Control Unit (CU)

→ All the operations and their execution in a computer is controlled by the control unit.

→ ALU perform all operations, but when and where an operation is to be performed is decided by the CU.

→ It provides enable signals, clock pulse to all operations.