

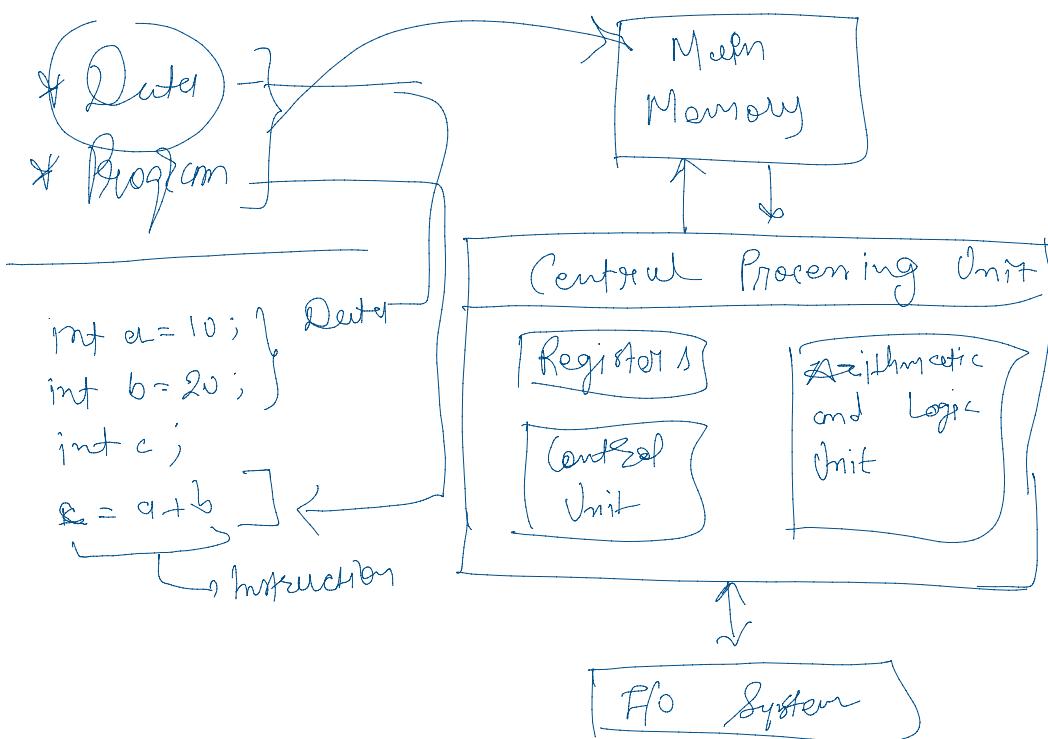
→ Computer Organization & Architecture
 How to abstract (Blueprint) → what to

→ What are Required things

- ① Memory, RAM, Registers, ALU, CV, etc..
 Cache, Secondary memory

→ I/O Interface

* Von Neumann Architecture (Stored Memory Program)



* Data & Instruction stored in main memory.

* CPU (operations)

- ALU
 - + - * / And, Or, Shift

* Registers

- Fastest memory (flip flop)
- Smaller size
- Temporary storage
- 8 bit, 16 bit
- Speed (Reason if required)

* Control Unit

→ Timing Signal → Timing for instructions
 → Which part should execute first & so on

→ Control Signal

↳ to Control

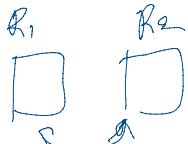
Registers

→ which register should be used by when to use etc...

* Connection between Components using BUS

Type of Instructions

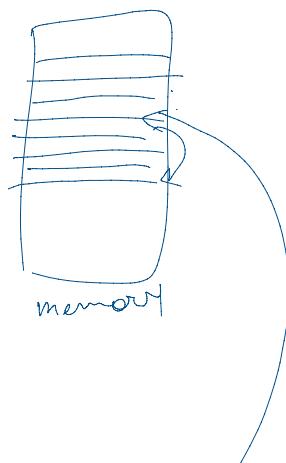
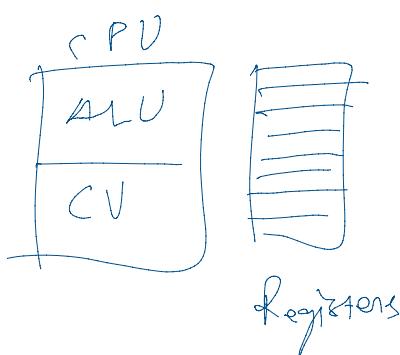
Data Transfer



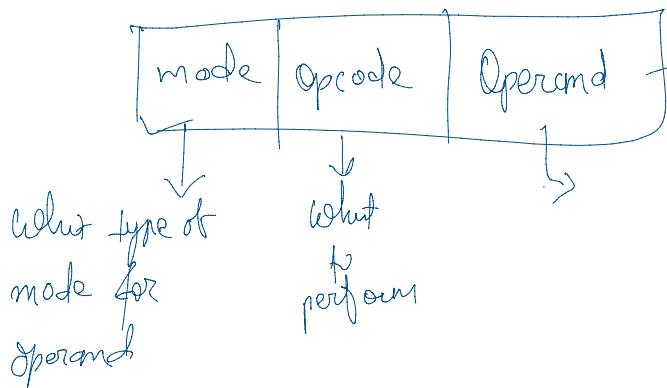
Data Manipulation

Program Control

Instruction Format

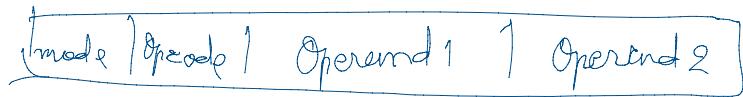
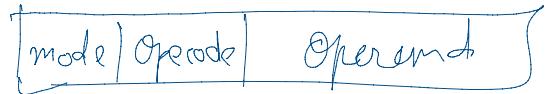


Instruction



```
main()
{
    int a = 10; } data
    b = 20;
    int c;
    c = a + b;
    pf ((*) );
}
```

→ Length of Instruction depends on Type of Computer Organization



① Data Transfer Instruction

→ data from one location to another location
without changing the binary info/content

② Data Manipulation

→ Performs Arithmetic, Logic , shift
operations

③ Program Control Instruction

→ Decision Making Capabilities &
change the path of the program
when executing the program.