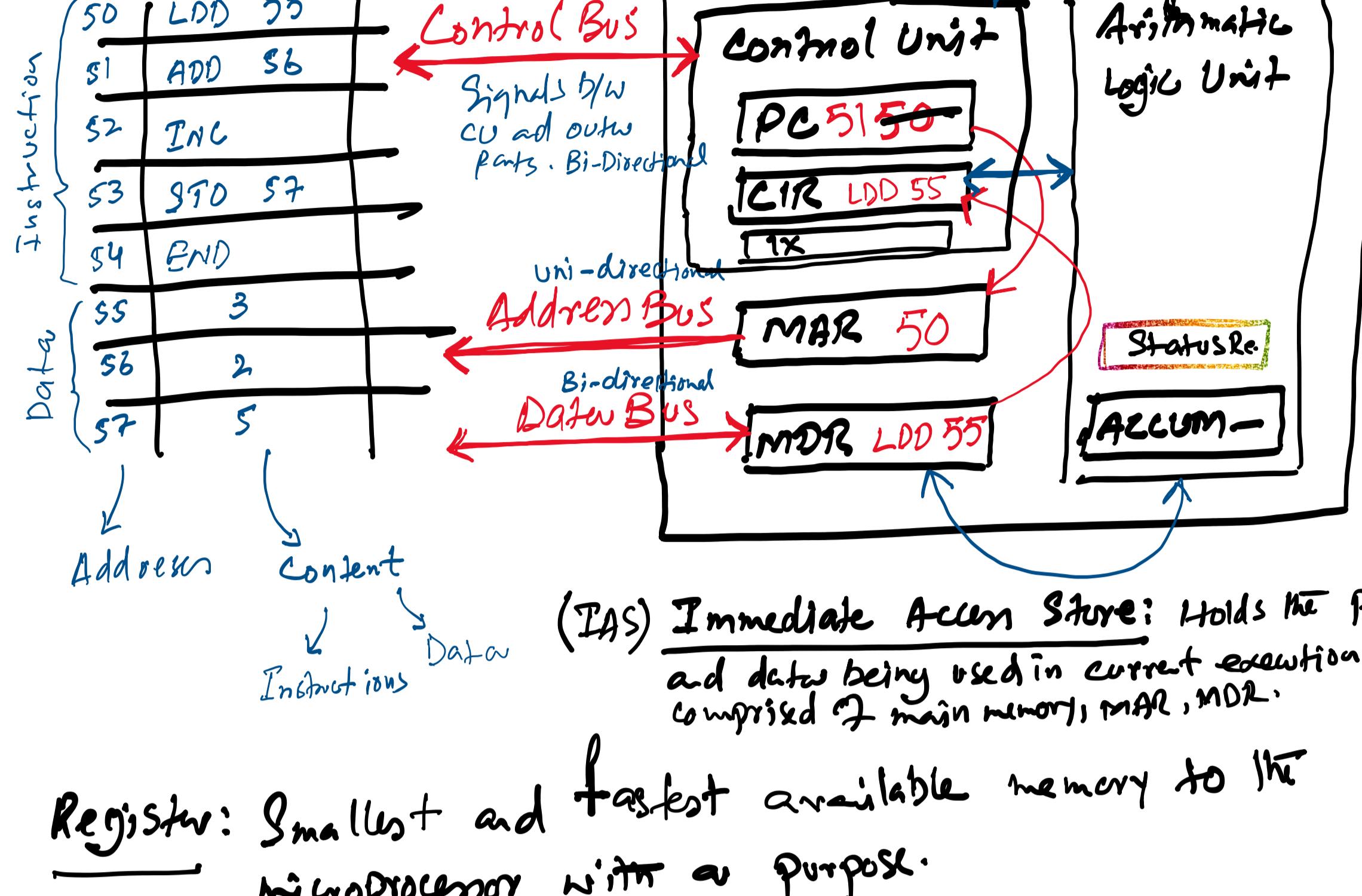
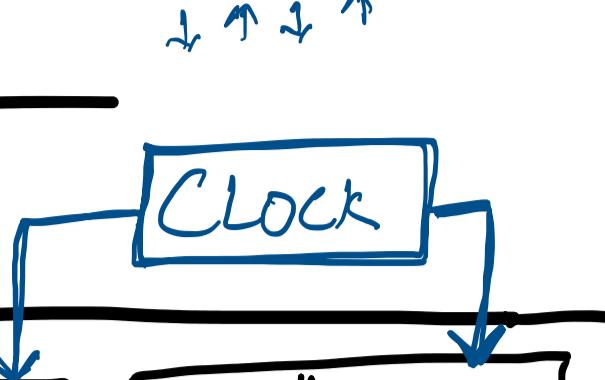


- Computer Architecture
- Architecture
- Non-Neumann Architecture
- Idea of stored Program



(IAS) Immediate Access Store: Holds the program and data being used in current execution. It is comprised of main memory, MAR, MDR.

Registers: Smallest and fastest available memory to the microprocessor with a purpose.

### SPECIAL PURPOSE REGISTERS:

Program Counter (PC): It holds the address of next inst.

Memory Address Register (MAR): It holds the address of current instruction being executed.

Memory Data Register (MDR): It holds the instruction or data whose address is saved in MAR.

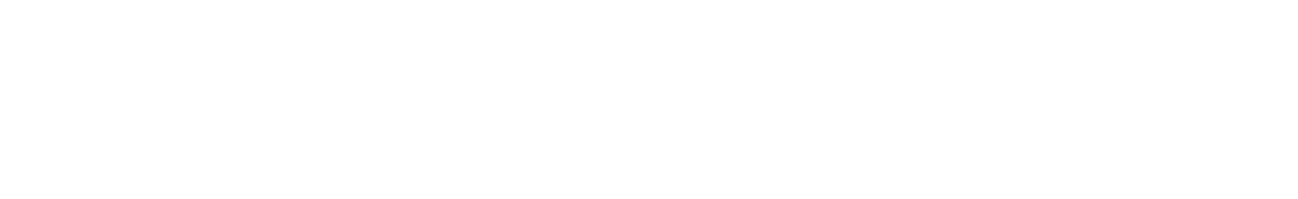
Current Inst. Register (CIR): It decodes and executes current inst.

### GENERAL PURPOSE REGISTER:

Accumulator: It holds the data being generated during the execution.

### FETCH DECODE EXECUTE CYCLE (FDEC):

- From PC address of next inst. goes to MAR.
- PC increases itself by 1.
- MDR receives the instruction whose address is placed in MAR.
- From MDR inst. goes to CIR
- CIR decodes and executes current inst.



Register Transfer Notation:

$$MAR \leftarrow [PC]$$

$$PC \leftarrow [PC] + 1$$

$$MDR \leftarrow [MAR]$$

$$CIR \leftarrow [MDR]$$

$$[CIR]$$

[ ] the content of

Q. Main memory (RAM) is said to be the part of IP, then why it is kept outside IP?

- Size
- Update.

### VNA - Definition

- \* - Both program (instruction) and data are indistinguishable in binary form and kept in same main memory.
- It is a single processor; made up of CU, ALU & MU.
- It makes use of input, output and storage devices.
- It is a sequential (serial) machine.