

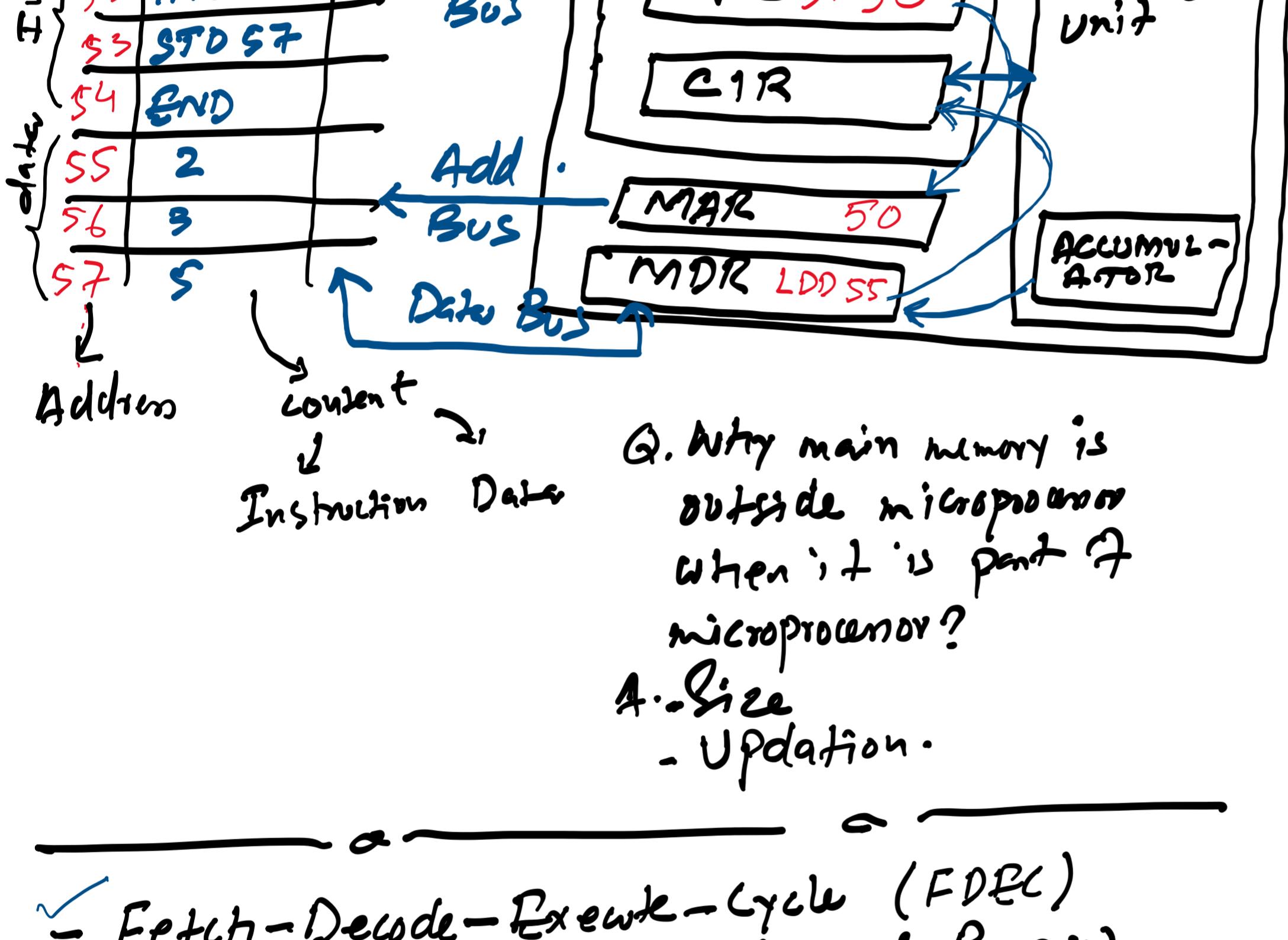
- VON-NEUMANN Architecture
- Computer Architecture
- Architecture
- Idea of stored program ✓

Program = Set of instruction.



## Definition:

- Both programs (instructions) and their data are in binary form, indistinguishable and will be kept in the same memory. (2)
- A single processor; made up of Control Unit (CU), Arithmetic and Logic Unit (ALU) and Memory Unit (MU).
- Use of input, output and storage devices. (1)
- Gets a sequential (serial) machine. (1)



- Fetch-Decode-Execute-Cycle (FDEC)
- Registers (Special purpose, General Purpose)
  - Register is the smallest and fastest memory available to microprocessor
- Buses
- Control Unit, ALU, MU, Immediate Access Store (IAS).

## SPECIAL PURPOSE REGISTERS:

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

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

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

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

## GENERAL PURPOSE REGISTER:

Accumulator: It holds the data produced during the execution of program.

## Fetch Decode Execute Cycle:

- Add. of the next inst. goes to MAR from PC.
- PC increases itself by 1.
- Inst. from the address mentioned in MAR arrives in MDR.
- Current inst. from MDR goes to CIR
- CIR decodes and executes the current inst.

