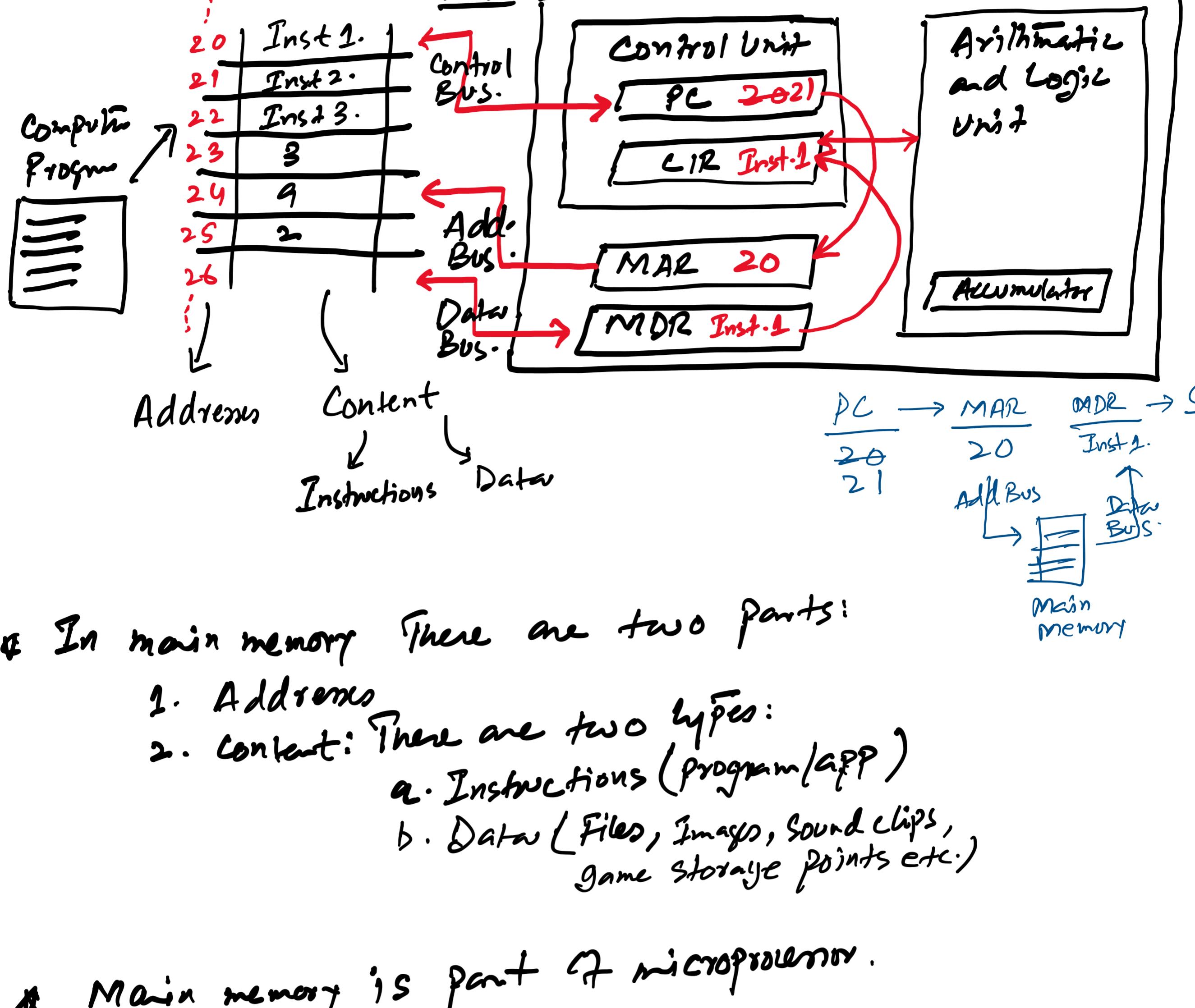


1.3.2 Computer Architecture And Fetch-Decode-Execute Cycle.

How microprocessor is made and how microprocessor operates on every single instruction given to it.



* In main memory there are two parts:

1. Addresses
2. Content: There are two types:
 - a. Instructions (program/app)
 - b. Data (files, images, sound clips, game storage points etc.)

* Main memory is part of microprocessor.

* Microprocessor:

1. Control Unit (CU)
2. Arithmetic & Logic Unit (ALU)
3. Memory Unit (MU)

* Registers:- These are smallest memories available to microprocessor.

- These are fastest memories
- These are the closest memories
- There are two types/categories:

1. Special purpose: Those registers which have a single purpose attached. Eg: PC, CIR, MAR, MDR

2. General purpose: Those which are not having any particular purpose and are generally used by the programs' instructions and programmers.

E.g: Accumulator.

* Special Purpose Registers:

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

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

c. Memory Data Register (MDR): It holds the instruction whose add. is mentioned in MAR. It holds current instruction.

d. Current Instruction Register (CIR): It decodes and executes the current instruction.

* General Purpose Register (Accumulator): It keeps the data being produced, acted upon, generated during the execution of program.

Fetch-Decode-Execute Cycle.

1. PC holds the add. of next. instruction
2. Add. in PC goes to MAR
3. PC increments itself by 1.
4. MDR receives the inst. whose add. is saved in MAR.
5. From MDR current inst. goes to CIR.
6. CIR decodes & executes the current inst.