01: MICRO PROCESSOR

→ General architecture of a comp =

A comp is an progmble electronic device that access row data as input & processes it with a set of instructions to produce the result as output.

Thus a comp consist for functionally independnt main parts -

a) input unit
b) output "
c) memory "
d) CPU

→ Input unit =
* It access an intrface for man to machine communication.
* (I) of input unit -
* access the data & instructions frm the ~~output data~~ outside.
* connect the received analog data into comp acceptable digital form.
* Supply the digital form of data & instructions to comp system for furthr processing
* eg → keyboard , mouse

→ Output unit =

It's the job is just the reverse

of that of an input unit

* (i) O. units —
  * access the result produced by the comp by binary coded form.
  * convrt the binary coded into humanly acceptable form.
  * supply the converted result into outside world.
  * eg → monitor, printrs, speakers.

⇒ <u>memory</u> =

* The data & instructions that are entered into the comp system through the input unit hve to be stored insert the comp bfre the actual processing start.
* Similarly, the results produced by the comp ~~after~~ must also be kept somewhere insert the comp system bfre being passed on to the output unit.
* The memory unit performes all above ()s.

⇒ <u>CPU</u> =   (brain of the comp)

* All major calculations & computations are made inside the cpu
* The cpu is also responsible for activating & controlling the operations of other units of comp system.
* Its components are register, CU & ALU

⟹ Registers = (1)
*   temporary
         They are the ^ Storage locations
    within the CPU where the data fetched
    from the memory can be held.
* Most comp use several types of registers,
   each designed to perform a particular task.
* eg → Accumilator, prgm counter, memory
        address register, memory buffer (r)
        instruction (r), etc.

⟹ ALU =
         ALU of a comp systems is the place
    where the actual exicution of instruction
    takesplace during the data processing
    operation.
         ALU's are designed to perform the
    4 basic Arithmetic operations + @, - , * , / &
    logical operations → <, =, >

⟹ Control Unit = (CU)

         CU acts as a nervue centre of a comp,
    bcz it Controls & coordinates the entire
    comp systems.
         CU performs follow ()s →
    * Fetches the instructions from primary
       memory at the location pointed by
       the PC (prgm counter) register.
    * Decodes the instructions in the
       instruction register.
    * Exicutes the instructions by means
       of sequencing a series of control

Signals to other components of CPU.
* Controls all the data transfer
b/2 the components [memory & I/o devices]

=> Buses =

* The diffn units of comp system are
interconnected by common parallel signal
lines → Buses.
* The 3 principal in a comp system —
a) data bus
b) Control bus
c) Address bus
3 buses together → System buses