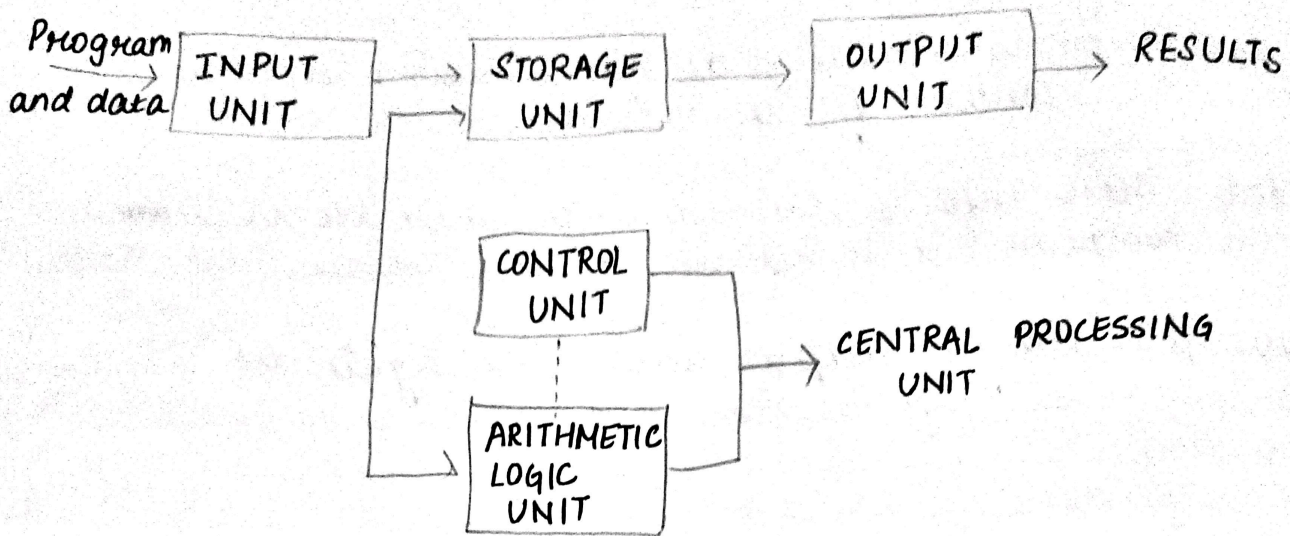* Functional units of a computer system

- A comp organization describes the functions and designs of the various units of a digital system.

- A general-purpose comp syst. is this best known example of a digital syst. Other examples include telephone switching exchanges, digital voltmeters, digital counters, electronic calculators and digital displays

- comp architecture deals with the specification of the instruction set and the hardware units that implement the instructions.

- Comp hardware consists of electronic circuits, displays, magnetic and optic storage media and also the communication facilities.

1. **Input Unit** is used by the comp to read the data. Most commonly used input devices are keyboards, mouse, joysticks, trackballs, microphones etc.

2. **Central Processing Unit** commonly known as CPU can be referred as an electronic circuitry within a comp that carries out the instructions given by a computer program by performing the basic arithmetic, logical, control and I/O operations specified by the instructions.

3. **Memory Unit** can be referred to as the storage unit area in which programs are kept which are running, and that contains data needed by the running programs. It can be categorized in 2 ways: primary & secondary.

4. **Arithmetic Logic Unit** Most of all the arithmetic and logical operations of a comp are executed in ALU of the processor. It performs arithmetic operations like addition, substraction or etc and also the logical operations like AND, OR, NOT operations
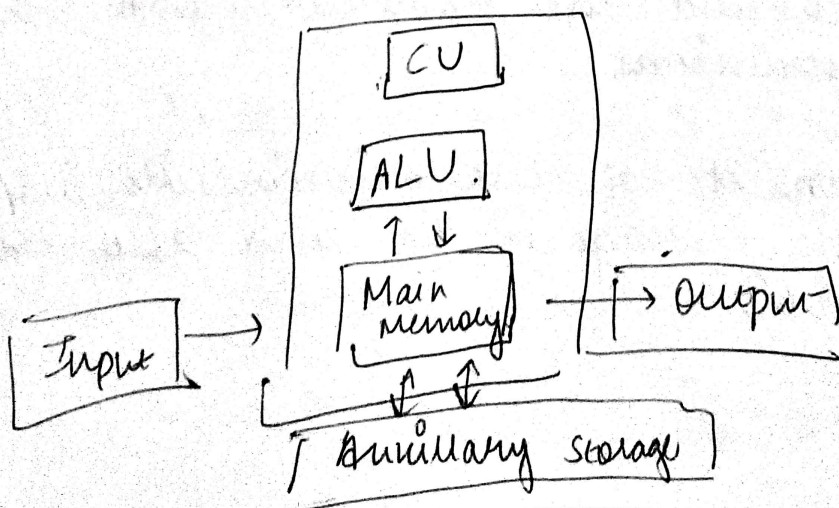
Teacher's Signature : —————

```
Program      ┌─────────┐      ┌─────────┐      ┌─────────┐
────────→    │ INPUT   │ ───→ │ STORAGE │ ───→ │ OUTPUT  │ ───→  RESULTS
and data     │ UNIT    │      │ UNIT    │      │ UNIT    │
             └─────────┘      └─────────┘      └─────────┘

                        ┌─────────┐
                        │ CONTROL │
                        │ UNIT    │──────┐
                        └─────────┘      │
                             ┊           ├───→  CENTRAL  PROCESSING
                        ┌──────────┐     │            UNIT
                        │ARITHMETIC│     │
                        │ LOGIC    │─────┘
                        │ UNIT     │
                        └──────────┘
```

⑤ <u>Control Unit</u> is a component of a comp's CPU that coordinates the operations of the processor. It tells the comp's memory, ALU and I/O devices how to respond to a program's instructions. It is known as the nerve center of a comp system.

⑥ <u>Output Unit</u> The primary func^n of the output unit is to send the processor results to the user. output devices display info in a way that the user can understand. The most common example is a monitor.

```
        ┌───────────────────────┐
        │      ┌─────┐          │
        │      │ CU  │          │
        │      └─────┘          │
        │      ┌─────┐          │
        │      │ ALU.│          │
        │      └─────┘          │
        │       ↑  ↓            │
        │   ┌─────────┐     ┌──────────┐
┌──────┐│   │ Main    │ ──→ │→ Output  │
│Input │→   │ memory  │     └──────────┘
└──────┘│   └─────────┘
        │       ↓  ↑
        └───────────────────────┘
            ┌──────────────────┐
            │ Auxiliary Storage│
            └──────────────────┘
```

- Functional units are the parts of CPU that performs the operations and calculations called for by the comp. program.

- Functional units of a comp syst are parts of the CPU that perform the operations

- A comp consists of 5 main components.