CPU Organization

Central processing unit (CPU) is the electronic circuitry within a computer that carries out the instructions of a computer program by performing the basic arithmetic, logical, control and input/output (I/O) operations specified by the instructions.

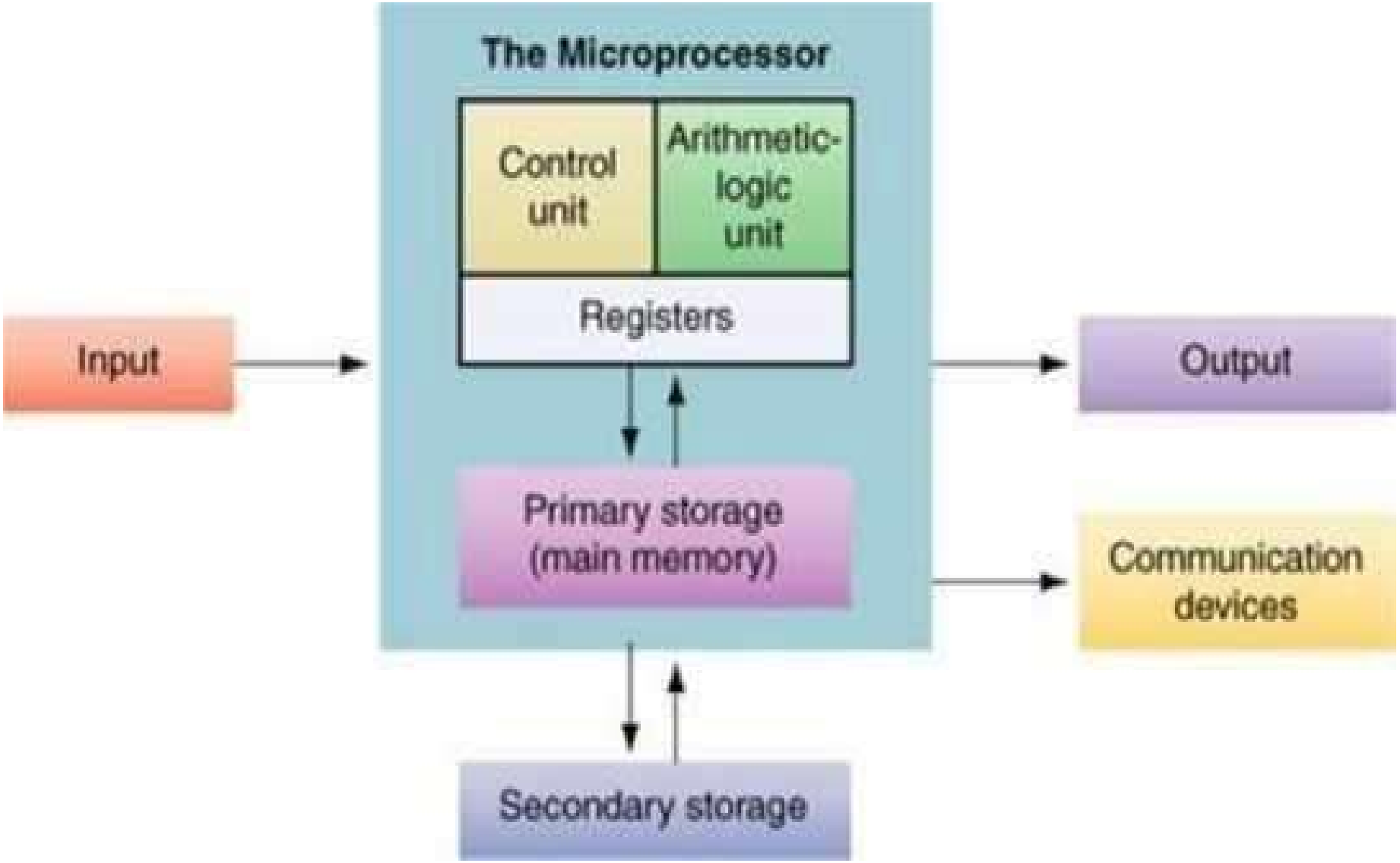
CPU Organization

- In the computer all the all the major components are connected with the help of the **system bus**.

•**Data bus** is used to shuffle data between the various components in a computer system.

- When the software wants to access some particular memory location or I/O device it places the corresponding address on the **address bus**.
- The **control bus** is an eclectic collection of signals that control how the processor communicates with the rest of the system. The **read** and **write** control lines control the direction of data on the data bus.

CPU Organization



CPU Organization

- The register section, as its name implies, includes a set of registers
and a bus or other communication mechanism.

- The register in a processor's instruction set architecture are found in the section of the CPU.

- The system address and data buses interact with this section of CPU. The register section also contains other registers that are not directly accessible by the programmer.

CPU Organization

•The fetch portion of the instruction cycle, the processor first outputs the address of the instruction onto the address bus. The processor has a register called the **program counter**.

•At the end of the instruction fetch, the CPU reads the
instruction code from the system data bus.

•It stores this value in an internal register, usually called the **instruction register".**

CPU Organization

- The **arithmetic / logic unit (or) ALU** performs most arithmetic

and logic operations such as adding and ANDing values.

- CPU controls the computer, the **control unit** controls the CPU. The control unit receives some data values from the register unit, which it used to generate the control signals.

•The **control unit** also generates the signals for the system control bus such as READ, WRITE, IO/ signals