SANDY BAY PARK RESIDENTS ASSOCIATION (SBPRA)

COMPUTER BASICS 3

Primary Components - What's in your Computer?

Input devices
Central processing unit (CPU)
Storage devices
Output devices

Kelvin Dimond

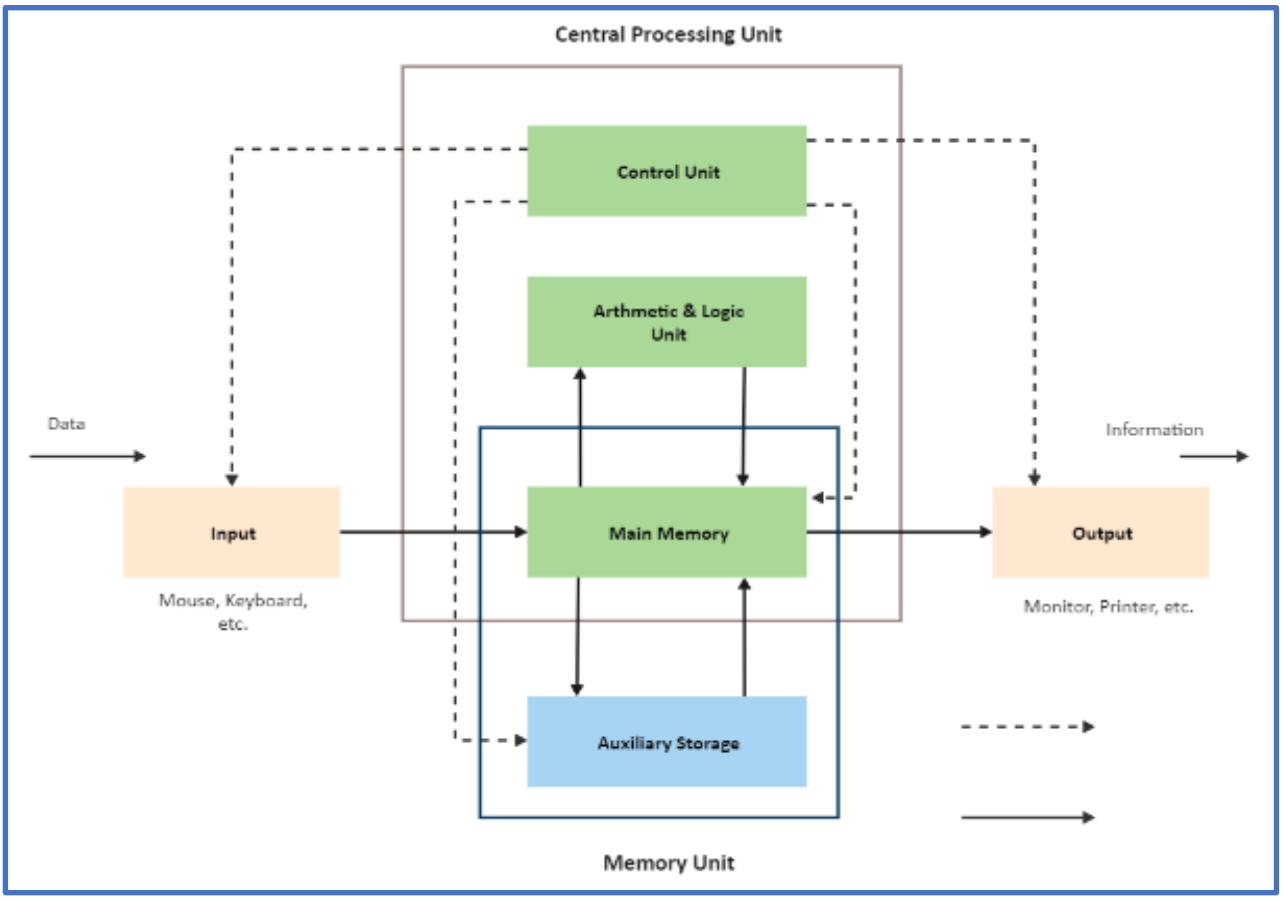
Computer Basics – Primary Components

What makes up the primary components of your laptop or desktop personal computer?

The diagram below illustrates the primary components of the computer system. The basic definition of the computer system is that it takes some data, and then processes and produces an output. That output could be:-

- Display a letter in a document,
- Open a folder,
- Print a document,
- Perform a calculation in a spreadsheet.

The diagram shows the flow of data through the computer, from input to output.



Input Devices

The input device is from where the raw data is passed into the computer system. The input can be in any form.
For example, the mouse-clicked input, button-input, keyboard-input, etc. All the input data is passed from the input device to the computer's storage unit.

Common Input Devices

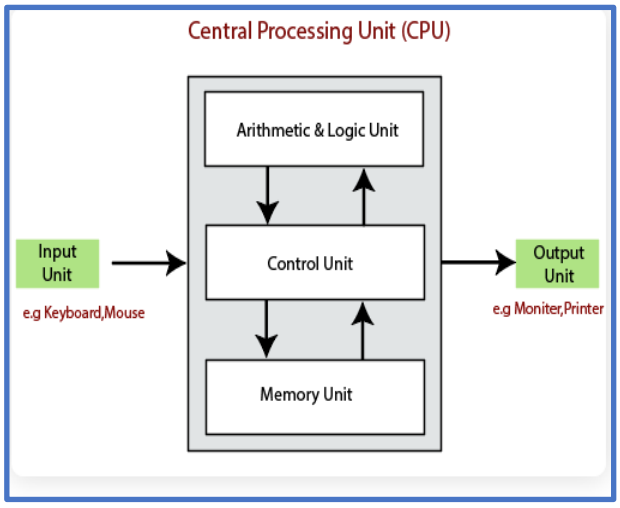
Central Processing Unit

The CPU is the primary component that processes the input passed into the computer.
It is also called the heart or brain of the computer; without the CPU you just have a box of useless components!
The CPU has two components:-

- Arithmetic Logical Unit (ALU),
- Control Unit (CU).

CPU Motherboard

Central Processing Unit Diagram



Arithmetic Logical Unit (ALU)

Covered in Computer Basics 1, we should all know that a computer understands the language of the binary number system, that is 0 and the 1.
The Arithmetic Logical Unit (ALU) is the digital circuit that takes these 0s and 1s, and performs the necessary arithmetic operations on them, releasing the results as the output *asynchronously (*helps make the computer perform faster).

Control Unit (CU)

The Control Unit (CU) controls the instructions flowing in and out of the CPU.
The CU is smart enough to sense that when the CPU's central processor needs data and when not.
If the data is required, then it retrieves it from the Storage Unit and transfers it into the CPU.
The CU converts the data into signals and passes it into the central processor.

Storage Unit – Primary and Secondary Units

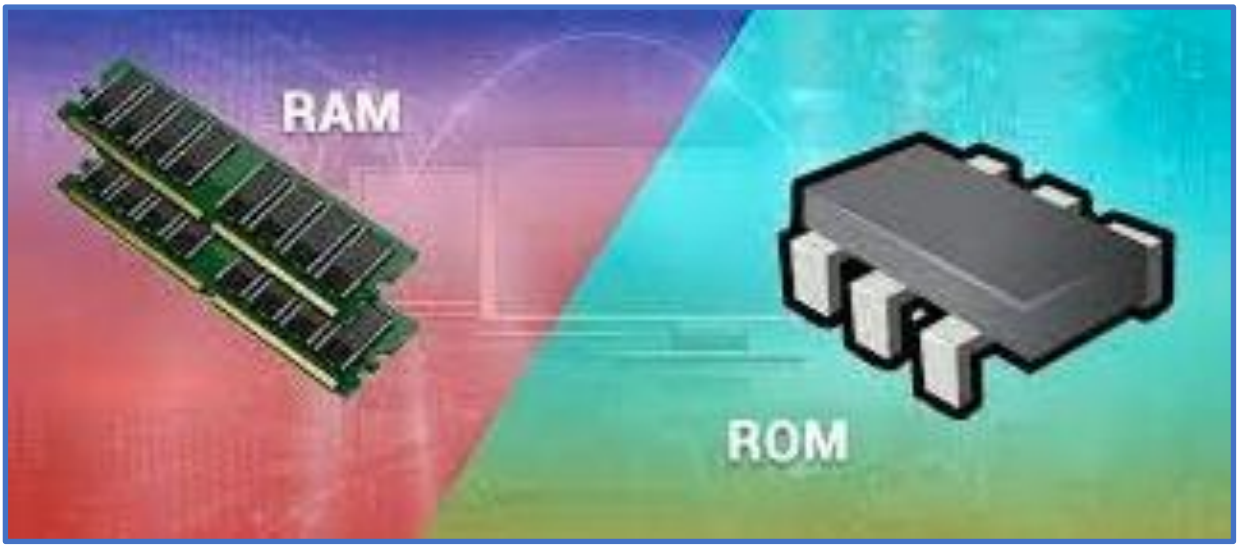
The raw data from the Input device is saved in the Storage Unit. It is the place where the data that is to be processed and processed data is stored.
The Storage Unit is further classified into two parts:-

- Primary Storage,
- Secondary Storage

Primary Storage

This storage is also known as the main memory of the computer system.
This part of the storage unit holds the data, programs, and instructions that are currently in use.
This storage resides on the motherboard and contains the Read Only Memory (ROM) and Random Access Memory (RAM) of the computer system.
The ROM capacity of a computer is usually fixed; however, it is possible on some computers to increase the RAM capacity by fitting plug-in RAM circuit boards to the motherboard.

Plug-in RAM Circuit Boards **Soldered in ROM Integrated circuit**



Secondary Storage

It is a *non-volatile and permanent data storage device. It is the place where the data is stored for a short or a long time. The secondary storage supports the primary storage.
Until recently this device was known as the hard disc drive (HDD) of the computer as it consists of physical spinning disks and movable read–write heads.
Newer computers are increasingly being fitted with solid-state drives (SSD). These use integrated circuits to store data. Even though they lack physical moving parts, you may see them referred to as solid-state disks.
Secondary storage is primarily used as a backup device.
(*Non-volatile is a type of memory device that can retain stored information even after the power is removed.)

Comparison of an HDD and SSD

Output Devices

The output unit is the device where the computer system outputs the data.
The output device is always hardware such as:-

- The computer screen,
- Speakers,
- Printer, etc.

Users get their processed data from these devices.

Common Output Devices

Acknowledgement to edrawsoft