# INRODUCTION TO COMPUTERS

Computer can be defined as an electronic device that can follow instruction to accept input, process the input and then produce information

The input is defined as data.

Information refers to organized data.

A computer is made up of two major components,1. software and 2. hardware.

Software: it is the untouchable instructions that you cannot see in a computer.

Hardware it is the tangible bit of the computer e. g a monitor, a Central Processing Unit, RAM, processor, joystick, speakers, mouse, floppy drive, CD rose, hard drive and the keyboard. The hardware bit can be divided four major groups;

1. CPU and primary memory,
2. input devices,
3. output devices and
4. storage devices.

The storage devices are divided into the;

1. primary storage devices
2. secondary storage devices.

A coputer is housed in the system unit or the system cabinet. It houses RAM, drive, power supply and motherboard.

## COMPONENTS OF A COMPUTER SYSTEM

Data

Central Processing Unit (CPU)

Output units

Control Unit (CU)

Memory

RAM

ROM

Input Units

Arithmetic Logic Unit

Information /Knowledge

Auxiliary Memory

1. Components of input unit

Mouse, Keyboard

1. Central Processing Unit

Has 3 major components;

1. Control unit which focuses on coordination of all activities in a computer,
2. Arithmetic Logic Unit which is used to process mathematical functions and
3. Memory which consists of the Random Access Memory(RAM) and Read Only Memory(RAM).

The bigger the RAM, the faster the computer.RAM is used to hold an instruction temporarily.

Brown/Green is the default colour for all the motherboards.

**INPUT DEVICES**

Input devices translate from the form that humans understand to the one that computers understand. Most common are keyboard and mouse.

Other examples of input devices include: scanner, pre-storage device, optical mark recognition, microphone, joystick, point and drawing devices, trackball, touchpad, touch screen, digital cameras, magnetic stripes and smart cars e.t.c

**CENTRAL PROCESSING UNIT (CPU)**

A specific chip or the processor a CPU performance is determined by the rest of the computers circuity and chips.

The CPU performs the actual processing of data.

The speed of CPU measured by Hertz.

It consists of 3 major elements:

1. The Control Unit
2. The Arithmetic and Logic Unit(ALU).
3. Some registars.
4. The Control Unit(CU)

It determines the order in which information is processed. It coordinates all the activities of the computer. The CU transmits coordinating control signals to other computer components.

1. The memory

Enables a computer to store information temporarily or permanently.

It divided into two general parts: RAM and ROM.

1. Random Access Memory RAM

It is a primary storage that temporarily holds data and programs to use during processing.

Information stored in the RAM, is lost when the computer is turned off.

RAM is the memory that the computer uses to temporarily store the information as it is being processed.

The more the information being processed the more the RAM the computer needs.

The RAM consists of location or cells. Each cell has a unique address which distinguishes it from other cells.

1. Read Only Memory(ROM)

It is programmed during the manufacturing time of a computer, its contents cannot be changed by the user and the information is stored permanently.

It has a Basic Input Output System (BIOS)-which are the booting instruction of a computer.

1. Secondary storage

Stores data and programs permanently, it is retained after the power is turned off. Examples:

* Hard drive (hard disk)
* Floppy disk
* Optical Laser Disks
* Diskettes

Common secondary storage Media.

* 1. Diskettes

Data is represented as magnetic spots and removable plastic disks. Most common size is 3 1/2 inches, in a rigid plastic case. Disk drive holds a diskette, read or retrieves the data and writes or stored data.

* 1. Hard Drive

Data is represented magnetically as in diskettes. Normally more than one rigid platter in sealed unit. These disks are not removable. Significantly more capacity and faster operating than diskettes.

**OUTPUT DEVICES**

These are pieces of equipment that tanslate the processed information from the CPU into a form that humans can understand.

Examples include: Monitor, printers and sound blasters.

**SOFTWARE**

These are the instructions that tell the computer what to do.

It has two main divisions:

1. Application software, which helps perfom general purpose tasks, and
2. system software, which enables application software to interact with the computer.

The computer uses artificial intelligence.

There are four kinds of computers, namely: Microcomputers, minicomputers, Mainframe computers and supercomputers.

Personal Computer: A small, single single-user computer based on microprocessor.

Workstation: A powerful, single -user computer. A workstation is like a personal computer but it has: a more powerful microprocessor and in general a higher quality monitor.

Minicomputers

They are desk sized. more processing speed and storage capacity than microcomputers. General data processing needs at small companies.

Mainframe computers

Larger machines with special wiring and environmental controls. Faster processing and greater storage than minicomputers. It is a typical machine in larger companies.

Supercomputers

The most powerful of the four categories. They are mostly used by very large organizations, particularly for every math intensive types of tasks.

**Characteristics of Computers**

1. Process data and information in high accuracy level.
2. Speed in processing data information.
3. Store a large amount of data and information for a long period of time.
4. Sharing of information.

**Computer Viruses**

A computer virus a malicious program designed and written to destroy other programs.

It has the ability to:

* Link itself to other programs
* Copy itself (it looks as if it repeats itself)

Examples of viruses: Monkes, ABC, Crabs, CIH.

A Virus program:

* It is man-made.
* It can hide and reproduce.
* It can lay dormant and then activate.
* Infects programs and documents, databases etc.

Sources of Computer viruses

The primary sources: the internet via download, the diskettes, computer networks.

**Virus protection**

The software package distibuted with new PCs always includes antiviral program. The best way to cope with viruses is to recognize their existence and use an antiviral or antivirus program.