

# COMPUTER STUDIES

## APPLICATION AREARS OF ICT

There are numerous application arears of ICT. Some of the applications arears are:

**Teleconferencing:** This can also be called teleseminar. It is the live exchange and mass articulation of information among several persons and machines remote from one another but linked by a telecommunication system. Terms such as audio conferencing and telephone conferencing are also sometimes referred to as teleconferencing.

**Video conferencing:** Audio conferencing (also known as a videoteleconferencing) is a set of interactive telecommunication technologies which allow two or more people in different locations to interact via two-way video and audio transmission simultaneously.

3. **Tele-presence:** This is the technology that offers almost exact experience as a face-to-face meeting, it allows you to hear and also see other people. Participants are invited using a calendar system for example, during the meeting, clear, echo free sound and life size image are transmitted just as if they were all together in the same room.

**Telecommunication and networking:** Telecommunication and networking uses ICT databases and many others to establish connection, control information flow, store information and so on.

**Tele-computing:** This is the use of computers for communication. They use ICT technologies such as internet or intranet for communicating with computers.

**Messaging:** A message is an object of communication using ICT. The message can be in form of e-mail, SMS, audio, video etc

**Information search and retrieval:** Internet search engine can be used to search and retrieve information from the internet. Examples is Google, Yahoo, Ask, Mamma, Bing etc.

## ICT BASED GADGETS

A gadget is a small technological object (such as a device or an appliance) that has a particular function, but is often thought of as a novelty.

*Some ICT based-gadgets are as follow:*

1. **MOBILE PHONES:** A mobile phone is an electronic handheld device used to make mobile telephone calls. Common manufacturers of mobile phones are: Motorola, Nokia, Infernix, Tecno, Samsung, Blackberry etc.

**COMPUTERS:** A computer is an electronic device for storing and processing data. Common computer types are: Personal computers, Laptops, Ipad etc.

**FAX MACHINE:** Fax stands for facsimile (ie. Make a copy). It is a device that can send or receive pictures and text over a telephone line.

**AUTOMATED TELLER MACHINE (ATM):** This is commonly called a cashpoint. It is a computerized device that provides the clients of financial-instructions access to financial-transactions in a public space without the need of a cashier, human clerk or bank teller. Customers use ATM to access their

bank accounts in order to make withdrawals, credit card advances, check their account balances as well as purchase prepaid cellphone credit etc.

**DISPENSING OR VENDING MACHINE:** This machine dispenses items such as snacks, beverages, lottery tickets etc. this dispensing machine accepts coins or a particular currency and dispenses the quantity of the product for the amount of the currency.

**POINT OF SALE MACHINE (POS MACHINE) OR AUTOMATED CASH REGISTER (ACR):** This is a machine used for payment whereby you swipe your credit card through. It can also be used to conduct retail transactions. It provides many services such as; credit card, processing, check reading and cash transactions, depending on the model.

7. **RADIO SET:** This is an electronic device that receives its input from an antenna, uses electronic filters to separate a wanted radio signals from all other signals picked by this antenna, amplifies it to a level suitable for further processing and converts through demodulation and decoding the signals into a form usable for the consumer such as sound.

**TELEVISION SET:** This is also called a T.V. It is a device that is used to view television broadcast. Modern television broadcast consists of a display, antenna or radio frequency, input and a tuner.

## **BASIC COMPUTER OPERATIONS**

Computer operation is the process by which the computer user starts the operation within the system and coordinates activities within and outside the system.

### **Booting**

Booting is the process of starting the computer and loading the operating system. This is the process where the computer prepares itself for proper operation. When the operating system is loaded, the icons on the desktop in windows are displayed.

A computer system is said to be cold if it is not running (i.e., not operating) at the time. And in this case, starting the system is referred to as **cold-booting**. You can equally restart (**reboot**) an already running computer system anytime you want with no danger done to the computer – this is called **warm-booting** the computer. Depending on the operating system installed in the computer, booting does not take time; therefore, the computer operator must wait patiently without trying to assist the computer until booting is completed. When this is done, the VDU will display the requisite background for the operator to start work – Microsoft Windows operating system for instance will display the Desktop (with START button) after booting. It is worthy of note that notwithstanding the number of available operating systems which we mentioned earlier, our focus is on the MS Windows OS which has become the most popular computer OS in use today.

### **Types of Booting**

There are two types of booting

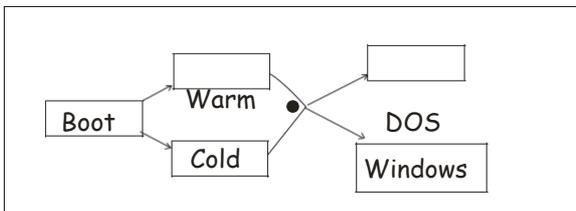
Cold booting

Warm booting

**Cold Booting:** Cold booting is the process of starting the computer from a switched off state (power button). You cold-boot a system by pressing the power button which is usually found somewhere on the system unit with a 'power' symbol on it. As soon as you press the power button, the CPU initiates the Power-On Self-Test (POST), the first phase of cold-booting process. This is when the CPU checks to see that the following critical devices are in working order: primary memory, hard disk drive, floppy/CD drive and keyboard. The entire booting process, which takes a few minutes depending on the power and health of the system ends with an indication that the system is ready for use.

**Warm Booting:** This is the process of switching the operating system without switching off the computer. It is not uncommon for a PC running under the **Microsoft** family of operating systems to *hang* – we say a computer is hanging when it is running but does not respond or obey our commands. When the system hangs, to restore it to normal operation, we must *reboot* it. You can reboot by pressing the power button (**not recommended!!!**) but the recommended and harmless approach is to issue the following command: **Ctrl + Alt + Delete**, i.e. (simultaneously) strike the three keys **Ctrl Alt Delete**; and to achieve this seamless process, the trick is to hold down 'Ctrl' and 'Alt' keys with the first and fourth finger of the left hand and then strike 'Delete' with a finger of the right hand. In response to the reboot command, the system starts a booting process in which some of the POST tests, such as memory check, carried out in cold-booting are skipped.

It is worthy of note that both cold and warm booting processes end the same way as seen in the figure below. The entire hardware comes under the general control of an operating system.



## COMPONENTS OF A WINDOWS DESKTOP



The desktop is one of the main components of windows when you start a computer. Once you switch on the computer system, windows XP (Windows experience) or vista operating system installed in it will display screen after some minutes of self-testing and complete loading. Therefore, the desktop is

the very first screen you see after windows starts. There you find the recycle bin and any shortcuts for applications and files that you have created. Representations of these applications are called an icon.

### ***The basic components of the windows desktop are:***

Icon  
Taskbar  
Background

**The icon:** An icon is a pictorial representation of an object or application. The users can initiate specific action by clicking on these icons. For example, internet explorer, recycle bin, Mozilla Firefox etc

**The taskbar:** The taskbar is the row at the bottom of the windows screen where all currently open application or files are listed. Some taskbars such as those in windows operating systems, also include icons for commonly-used utilities such as the system clock and antivirus software.

**Background:** A background is also called a desktop. It is the area where icons and windows are displayed. It is the beginning point after the operating system is fully loaded; the desktop appears for the user to issue an instruction or command. The desktop is the windows interface and your primary usage area.

### ***To change background, the following steps are followed:***

i. Right click on mouse

A submenu box mouse appears

Select properties; display properties appears showing submenu like theme, desktop screen saver, appearance, settings.

Select desktop

Click on "design of your choice".

Select position

If you are pleased, click on apply.

### **Other components of windows desktop are:**

i. **Start button:** By clicking the start button, on the corner of the screen, a vertical window will come up with the start menu.

**Menu:** Menu contains a list of commands or options called menu items from which a user can select in the currently active window. For example, if a user clicks on the all programs menu in start menu, submenus such as Adobe Reader, Microsoft office and other submenu options will show up.

**The dialogue box:** The dialog box is a type of window that prompts for additional information from the user about a task that needs to be completed.

**The recycle bin:** The recycle bin is a place where all the deleted files and folders on the system are, before they are permanently emptied from the computer.

**Running an application:** The Microsoft word (MS-word) application is a word processing package designed to make easy your use of the computer for task such as typing reports, memos, letter etc.

## LOADING MICROSOFT WORD

To load (start) Microsoft Word, take the following steps:

i. Click on the start button.

Go to All Programs (a menu pops up).

Locate Microsoft office (a submenu pops up)

Click on Microsoft Word office (wait MS Word to come up).

You can begin to type your document.

*Note that you do not press an enter key on the keyboard at the end of every line except the end of a paragraph.*

## The Screen Consist Of The Following:

a. **Title bar:** (Control menu box, window title, and minimize/maximize/close button).

b. Minimize button: takes the window off the screen and places it on the task bar.

c. **Menu bar:** (File, Home, Insert, Design, Layout, Reference, Mailing, Review, View and help)

d. **Toolbar** (Standard, formatting and other toolbars).

e. **The ruler:** (At the bottom of the toolbar, we have the ruler above the work area).

f. **Screen bar:** (One at right side of the screen, vertical scroll bar and one at the bottom, horizontal scroll bar).

g. **Status bar:** This is the bar at the bottom of the screen. It contains the operational page number, section break number and current page number versus the total number of pages of the document, position number, line number and column number.

## THE PROCESSES OF SHUTTING DOWN THE COMPUTER SYSTEM

When you complete your use of the Windows system, you must close all opened windows application packages to ensure you do not lose any data or configuration. You do not just switch it off; you **shut** it **down**. And the process goes as follows though it depends on the variant of Windows you are using:

i. Click the 'Start button' on your desktop/ or you press the Windows button on your keyboard and click on the power icon for options.

ii. Navigate to turn off computer option and click. The following shut down options are displayed:

- a. shut down b. switch user c. sign out d. sleep e. restart

iii. Select the option of your choice and wait for the system to respond.



## **WORD PROCESSING**

**Word processing** is the process of using a software to create, edit, view, store, retrieve, format and print textual documents such as letters, reports, memos, projects etc and document them in a file or folder which can be printed at any time there is the need for it. **Word processor** is a computer **software** that is used for word processing.

### **Examples of word processor are:**

- i. Microsoft Word
- Word star
- Word Perfect
- Word pro
- Corel Word Perfect
- Perfect Writer
- MultiMate Advantage
- Professional write etc

## Features of Word Processor (Ms Word Office 2007)

**The office button:** This is located in the upper-left corner of MS-Word. When you click the office button, you see the basic command available on the file menu example New, Open, Save, Save as, Print, Share, Export, Close etc.

**The horizontal ruler:** This enables a user scale a document horizontally.

**The vertical ruler:** This enables a user scale a document vertically.

**Scrollbars (Horizontal and Vertical):** They are used to scroll a document to the left and right (horizontal scroll bar) or up and down (vertical scrollbar).

**Menu bar:** This bar contains the Home, Insert, page layout, reference, mailing, view and review menus.

**Title bar:** This bar gives information about the name of the package as well as the name of the document you are working on.

**Minimize button:** this button is used to hide a current document.

**Maximize button:** The button gives command to a document to restore previously minimized document or to enlarge a document window.

**Close button:** this is used to close an open document.

**Text Area:** This is used to create and preview a documents.

**Status bar:** Contains information about a document.

**Task bar:** Whenever a document is minimized, it can be restored from a task bar. A task bar display document a user is currently working on, other documents that were opened by the user, start menu, system time etc.

## Using Word Processor – Ms Word 2007

Loading MS word: to open an MS word application, do the following:

i. Click on start

Navigate to all programs

Navigate to Microsoft office

Click on Microsoft word.

## OPENING A DOCUMENT

Anytime we load Microsoft word, a new document is opened by default. To open a new document:

i. Click on the office button (file).

Select "new" from the displayed options.

Select blank document from the dialogue box.

Click on create button.

A blinking cursor appears in the text area called the insertion point.

Follow the cursor by entering text into the text area.

## TO OPEN AN EXISTING DOCUMENT

i. Click on the office button.

Select "open" from the displayed options

Select the drive or directory where the document is located.

Select the document from the dialog box

Click open button or press enter on the keyboard.

## EDITING A DOCUMENT

The editing features in MS word are:

Copy, Cut and paste

Format painter

Find and Replace

Go to

Spelling and Grammar

Thesaurus

Word count.

**COPY:** Copying a document or portion of a document means duplicating the document. The original document will still remain while the duplicate of it will be found in a new location.

**CUT:** Cut feature can be used to remove information from a document.

**PASTE:** You can use the paste feature to place the information you cut or copy anywhere in the same or another document.

**OFFICE CLIPBOARD:** This is a temporary storage area where copied and cut files are kept. When you copy or cut a document, word stores the data you copied/cut in the clipboard. You can paste the information that is stored on the clipboard as often as you like. When you copy/cut a document, the copied/cut data can be pasted into a new location. Before you copy or cut a text in a document, you must first highlight (select) the text.

**Format painter:** You can use the format painter to apply text formatting and some basic graphics formatting.

**Find and replace:** This feature helps to locate errors which is made all over a document and quirkily replace them with the expected text.

**Go to:** This is used to quickly move to a specified location within a document without having to scroll through almost the entire pages.

**Spelling and grammar:** This is used to confirm if a document is error free both in spelling and grammar.

**Thesaurus:** This is a research feature that looks up synonyms (different words with the same meaning) and antonym (words with the opposite meaning) of words.

**Words count:** When you type a document, office word 2007 for example automatically count the number of pages and words in your document and displays them on the status bar at the bottom of the workspace.

## **FORMATTING A DOCUMENT**

Formatting a document means to change the original appearance of texts in a document to any style, size, colour etc of your choice. Formatting makes the document presentable. It entails the following: 1. Fonts: There are five types of font namely: i. font faces ii. Font size iii. Font style iv. Font colour v. font effects.

Paragraph: Alignment, indentation, spacing.

Bullets and numbering.

Tables.

Pictures

Shapes

Headers and footers

Page numbers

Text box

Drop cap

Symbols

Margin setting.

## **PRINTING A DOCUMENT**

Printing means to produce the hardcopy of a document with the aid of a printer. To print a document, make sure that the printer's software is installed in your system, connect the printer to the system with the aid of the printer's cable and do the following:

Click on office button (file menu).

Point the mouse to print and select print from the displayed options and a dialogue box will appear.

On the print dialog box, select the correct printer from the name drop down arrow.

In the page range option, select the pages you wish to print and number of copies each you want to print.

In the pages per sheet, specify if you want 1 page per sheet or more.

When you are done, click ok or press enter key on the keyboard.

### **Note:**

Print preview is used to preview all document before any print operation as this will determine if the document is intact as it should be.

Check progress of printing gives you an idea as to whether a document is printing or not.

Cancel printing helps you to reverse print action when you send an irrelevant document.

## **PRESENTATION PACKAGE**

A presentation package is a computer software package that is used to display information usually in form of a slide show.

It can also be defined as a software program that contains a text editor and the ability to add charts and graphic images, such as photographs, clip art, or other objects so as to make a slide show for the purpose of communicating visually to an audience.

### **EXAMPLES OF PRESENTATION PACKAGES**

Microsoft Power Point

Macromedia Flash

Windows Movie Maker

Softmaker Presentation  
Kpresenter  
Sunday Plus  
Corel Presentation

## FEATURES OF PRESENTATION PACKAGE

A presentation package has certain features such as:

**Creation of slides:** Presentation packages normally contain slides. To create presentation, group of slides are created.

**2. Insertion of Pictures:** Some presentation packages sometimes contain embedded pictures, while others allow users to insert pictures from external sources.

**Insertion of video and audio:** Presentation packages allow users to insert video and audio files to their presentation.

**Animation** – This is one of the features that distinguishes packages from other. Presentation packages allows users animate (ie. Create motion effects) on their slides.

**Slide shows:** With a group of slide with pictures, video, audio and animation, a user is able to view how the presentation will display by using slide shows. The slide show features also display slide contents to audience during presentation activity.

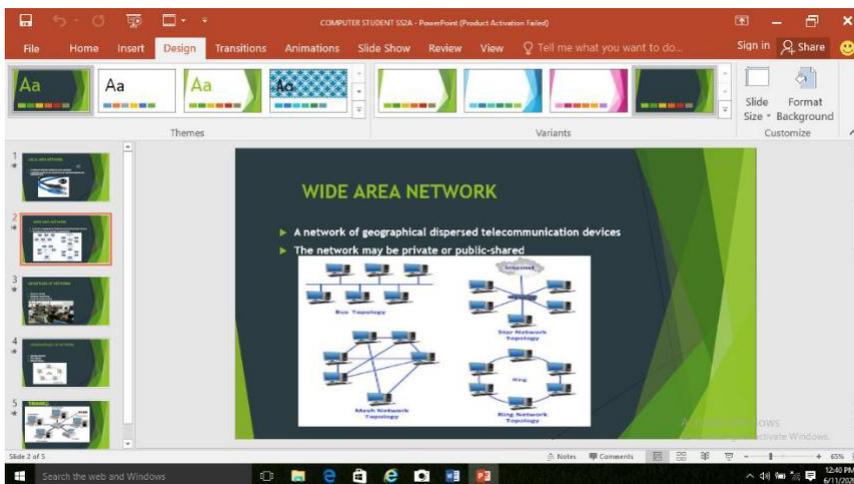


**Creating graphics:** presentation packages provide users with graphics inform of shape that can create an object from the scratch.

Creating organizational and other type of chart: organizational charts and other charts such as pie chart, bar chart etc. can be created easily with presentation packages instead of having to start from the scratch.

# USING PRESENTATION PACKAGE MICROSOFT POWERPOINT 2007

**PowerPoint** is a presentation package. With PowerPoint, you can easily create shows. Slide shows are used to illustration a presentation.



In PowerPoint 2007, windows display on the size of the window, the size of your monitor and the resolution to which your monitor is set. Resolution determines how much information your computer monitor can display. Using a low resolution; less information fits on your screen, but the size of your text and images are larger while a high resolution fits more information on your screen, but the size of the text and images are smaller.

## FEATURES OF PRESENTATION PACKAGE

**The Microsoft Office Button:** This is located at the upper-left corner. You can use the menu to create a new file, open an existing file, save a file etc.

**The quick access toolbar:** It provides you with access to commands you frequently use. The save, undo and redo appears on the quick access tool bar.

**The title bar:** The title bar displays the name of the presentation on which you are currently working. PowerPoint names presentation.

**The ribbon:** This is located near the top of the PowerPoint windows below the quick access toolbar.

**Rulers:** They are vertical and horizontal guides. You use them to determine where you want to place an object.

**Slide, Placeholder and Notes:** Slides appears in the centre of the window. You create your presentation on slides. Placeholder holds the objects in your slide. You can use placeholders to hold text, clip art, charts, etc. You can use the note area to create notes to yourself. You can refer to these notes as you give your presentation.

## HOW TO OPEN THE APPLICATION

To open MS PowerPoint application:

Click on start menu

Navigate to all programs

Navigate to Microsoft office PowerPoint.

Click on Microsoft Office PowerPoint.

## CREATING A NEW PRESENTATION

You create your PowerPoint presentation on slides. You use layout to organize the content on each slide. You can choose any slide layout and add other effects such as themes, and backgrounds to slides. **Themes** are sets of colours, fonts and special effects while **backgrounds** add a coloured background to your slides.

## INSERTING SLIDE CONTENTS.

When you start PowerPoint, it displays default slides on a slide pane. You can type the title of your presentation and a subtitle on this slide or add graphics and pictures.

### TO ENTER TEXT:

Click and type the title of your presentation with the keyboard in the *“Click to add title”*  
Click and type a subtitle in the *“Click to add subtitle”* area.

### TO INSERT GRAPHICS OR PICTURES

i. Click where you want the picture to appear (where you inserted the text previously)  
From the ribbon bar, click on the insert menu.  
Select clipart, shapes and pictures button from the menu.

### ANIMATING CONTENTS

PowerPoint provides four types of animations namely:

i. Entrance animation

Emphasis Animation

Exit animation

Motion paths animation

i. **An Entrance animation:** This determines the manner in which an object appears on a slide.

**Emphasis animation:** It does something to draw attention to an object for example, the object can be larger.

iii. **The Exit animation:** It determines the manner in which an object leaves a slide.

**A motion path animation:** It determines how an object moves around a slide; for example, an object can move from left to right.

### ANIMATION CONTENT BY ADDING TRANSITIONS.

Transitions determine how your presentations move from one slide to the next. There are several transition methods in PowerPoint. You can add sound to a transition and you can control its speed. You can apply a transition to selected slide or to all of the slide in your presentation.

A transition can occur when the presenter clicks the mouse or after the amount of time you specify.

### ADDING NEW SLIDES

After completing your title slide, you can create additional slides. To create a new slide:

i. Choose the home tab.

Click the new slide button in the slide group. The office theme dialog box appears and displays several layout templates.

Click the layout you want. The layout appears in the slide pane of the PowerPoint windows.

## **SAVING THE PRESENTATION**

i. Click on the office button.

Select save as from the displayed options.

Select the drive or clicking on the arrow on the save in combo box.

Click on the file name, type the desired document name.

iv. Click on save button or press enter on the keyboard.

## **RUNNING SLIDE SHOW**

After the creation of the slides, you can run the slide show by doing one of the following:

i. Press F5.

Choose the slide show tab. Click the “from beginning button” in the start slide show group.

Click the slide show icon in the bottom-right corner of your screen. Your slide show appears on your screen.

## **PRINT PRESENTATION**

PowerPoint provides you with many printing options. You can print a large view of your slides or you can print your slide as handouts. You can also print your notes pages or the outline view of your slides. To print, do the following:

i. Click the Microsoft office button, a menu appears.

Choose print.

Click the arrow next to the “print what” field in the page setup group and then select what you would like to print. A preview appears on screen.

Click the print, the print dialog box appears.

Click the down arrow next to the colour/grayscale field to select whether you want your slide to print in colour, grayscale, or black and white.

Click ok.

## **CLOSE PRESENTATION**

When more than one presentation is opened, you may want to close a particular one without affecting others. To close a particular presentation:

i. Click the presentation from the task bar or

ii. Click on the close button from the title bar

## **CLOSE APPLICATION**

When all presentations have been closed, the PowerPoint application remains active.

To close a PowerPoint application, click on the close button from the title bar.

## **THE SYSTEM UNIT**

The unit that is used to do the processing in a computer is called the processing unit. The unit is called the system unit.

The main component that is fitted inside the system unit is the CPU.

## **CENTRAL PROCESSING UNIT (CPU)**

Just like your brain controls every part of your body, the computer also has a brain which controls its parts. The brain of the computer is called the CPU. The CPU is also called a processor or microprocessor.

## **FUNCTIONS OF THE CPU**

The main function of the CPU is to control the functions performed by the other components. Since it is a Central Processing Unit, everything passes through it before getting processed.

The CPU is used to process instructions, perform calculations and manage most of the operations of the computer. It also carries out the basic instructions that operate the computer. Most of the devices connected to the computer communicate with the CPU in order to carry out a task.

## **COMPONENTS OF THE CPU**

The CPU contains the following parts:

Control Unit (CU).

Arithmetic and Logic Unit (ALU).

Memory/storage unit (Register).

### **The control unit (CU)**

This directs how data and instructions are to be processed within the computer system. It performs the following functions:

i. It fetches the data and instructions to be worked upon from the memory.

It interprets data and instructions.

It acts as a supervisor over the CPU.

It coordinates, according to the programmer's instructions.

It directs the operations within the computer system.

### **The arithmetic and logic unit (ALU)**

This is where all the arithmetical and logical instructions are executed. It performs the following functions:

i. Arithmetic operations like addition, subtraction, multiplication, division etc.

It performs logical operations such as AND, OR, NOR, BUFR, EXOR, EX-NOR, etc.

It communicate data and instructions directly from the memory unit.

### **Memory/storage unit (register)**

These are several registers that is used to hold data while work is going on inside the computer system. Examples include program counter, stack pointer, instruction register, etc. It performs the following functions:

i. It holds the instruction being executed by the computer.

It directs the storage and retrieval of the correct program address.

It holds the memory address of the next instruction to be fetched from the memory

**Note:** The memory address is that which is used to identify the particular location of data or instruction in the memory unit. Example, you have your house address which would enable someone who wishes to see you to be able to locate you.

## **UNITS OF STORAGE (MEMORY UNIT)**

The memory is one of the important components of the computer. The memory is where data and instructions are stored and retrieved. Inside the main memory, the following items are stored, namely These items coordinate and determine how the computer processes data and information.

Data is stored in form of bytes in the memory location called CELLS. Each cell has a memory address.

Examples of bytes are alphabetical letters (A-Z), the digits (0-9), a space, special characters such as +, -, \*, !, etc.

*Note: Each byte contains eight (8) bits. The bit is the smallest unit of the memory which is either 0 or 1*

### **In summary**

Byte = 8bits

Kilobyte (KB) = 1024 bytes

Megabytes (MB) =  $1024^2$  bytes

Gigabyte (GB) =  $1024^3$  bytes

The memory is made up of two kinds:

- i. The Random Access Memory (RAM).
- ii. The Read Only Memory (ROM).

### **FUNCTIONS OF THE MEMORY**

- i. It acts as a storage location

It provides the computer with information on the data and instruction

Different data and instruction are stored in their address inside the memory.

It houses all the computer programs, operating system and data.