

# **CCMCL301 - COMPUTER LITERACY**

Learning Unit 1: Apply computer basics .....  
Learning Unit 2: Use a word processing package .....  
Learning Unit 3: Use current spread sheet package.....  
Learning Unit 4: Use current Presentation.....  
Learning Unit 5: Use Internet/Intranet (Outlook).....

## **L.U 1: APPLY COMPUTER FUNDAMENTALS**

### **L.O 1.1: APPLY COMPUTER BASICS.**

#### **A. DEFINITION OF COMPUTER**

The word “computer” comes from word “compute” which means “to calculate.” By definition, a computer is a programmable machine that operates on data and is used for wide range of activities.

An electronic device that stores, retrieves, and processes data, and can be programmed with instructions. A computer is composed of hardware and software, and can exist in a variety of sizes and configurations.

A computer is an electronic device which executes the instructions in a program.

Computer is an electronic device or a combination of electronic devices which solves problems after accepting data and supplies results to the user. It is a tool which can be used to read and write stories, draw and look at images, and send and receive e-mail. It can store a large amount of information and perform various scientific and mathematical tasks.

#### **Types of computers**

The four basic types of computers are as under:

##### **1. Supercomputer:**

Supercomputer is a broad term for one of the fastest computers currently available. Supercomputers are very expensive and are employed for specialized applications that require immense amounts of mathematical calculations.

An extremely fast computer that can perform hundreds of millions of instructions per second.

## **2. Mainframe Computer:**

Although Mainframes are not as powerful as supercomputers, but certainly they are quite expensive nonetheless, and many large firms & government organizations uses Mainframes to run their business operations. Banks educational institutions & insurance companies use mainframe computers to store data about their customers, students & insurance policy holders.

A powerful multi-user computer capable of supporting many hundreds or thousands of users simultaneously.

## **3. Minicomputer:**

Minicomputers are smaller than mainframes but larger than microcomputers, usually have multiple terminals. They may be used as network servers and Internet servers.

## **4. Microcomputer:**

Desktop computers, laptops, personal digital assistant (PDA), tablets & smart phones are all types of microcomputers. The micro-computers are widely used & the fastest growing computers. These computers are the cheapest among the other three types of computers. The Micro-computers are specially designed for general usage like entertainment, education and work purposes.

## **B. COMPUTER HARDWARE**

**Hardware** is any part of computer that has a **physical structure**, such as the computer monitor or keyboard and mouse. Computer hardware is made up of the equipment used to make up your computer unit. These parts include your monitor, central processing unit (CPU), keyboard, mouse, printer, and modem.

The computer is an electronic machine that performs the following four general operations:

- Input
- Storage
- Processing
- Output

## 1. Central processing unit CPU

The most important piece of hardware. It's the "brain" of your computer. **The CPU** Controls the operation of the computer and perform its data processing functions. CPU contains three main parts which are:

**Control Unit (CU):** Controls the operation of the CPU and hence the computer.

**Arithmetic and logic unit (ALU):** performs various operations, such as addition, subtraction, multiplication, division, as well as others.

**Register:** Provides storage internal to the CPU

## 2. Storage devices or memory

A device capable of storing data, any physical device capable of storing information temporarily or permanently

**Primary Storage:** is the storage device that is directly connected to the CPU and store data temporarily during execution. The most popular example of this kind of memory is the RAM (Random Access Memory) that we use in modern day computers and ROM (Read Only Memory)

Volatile memories are usually used as primary storage.

### Different between ROM and RAM

**ROM** or **Read Only Memory** contains certain key routines (small programs). One example is the set of start-up routines. These take control of the computer when you switch on and ensure that the computer **boots-up**. Booting-up is the process of starting the computer up so that it is able to load and run computer programs. While **RAM** or **Random Access Memory** holds the current running program and its associated data.

**Secondary storage:** consists of the various devices that are able to store data and programs even when the power is off. And is usually used for more permanent storage of data. This requires secondary storage devices to be non-volatile. This includes devices such as hard drives, floppy drives, CD drives and DVD drives.

### How Memory is measured?

A computer stores data in units called **bits** and **bytes**. Computer chips called integrated circuits have one of two states, off or on. Therefore, a system was developed that used only two numbers, 0 and 1. Zero representing off and 1 representing on.

Bits are grouped together in sets of eight. Each set of eight bits is called a byte.

When computers refer to memory or storage they refer to the following forms of measurement:

1 bit = binary digit

8 bits = 1 byte

1 kilo Byte (1KB) = 1024 Bytes

1 Mega Byte (1MB) = 1024 Kilo Bytes

1 Giga Byte (1GB) = 1024 Mega Bytes

1 Terra Byte (1TB) = 1024 Giga Bytes

1 Peta Byte (1 PB) = 1024 Terra Byte

1 Exa Byte (1 EB) = 1024 Peta Bytes

1 Zetta Byte (1 ZB) = 1024 Exa Bytes

1 Yotta Byte (1 YB) = 1024 Zetta Bytes

### 3. Input and Output devices

A **peripheral** is a "device that is used to send information into or get information out of the computer.

Most people use the term peripheral generally to refer to a device external to the computer case. You connect the device to the computer to expand the functionality of the system. For example, consider a printer. Once the printer is connected to a computer, you can print out documents. Another way to look at peripheral devices is that they are dependent on the computer system.

Peripheral devices can be **external** or **internal**.

There are many different peripheral devices, but they fall into three general categories:

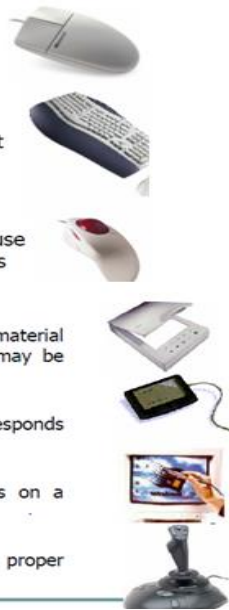
**Input devices:** "How to tell it what to do" which interact with or send data from the user to the computer, such as a mouse and a keyboard

**Output devices:** "How it shows you what it is doing" which provide output to the user from the computer, such as a monitor and a printer

**Storage devices:** "How it saves data and programs" such as a hard drive or flash drive

## INPUT DEVICES

- **The Mouse**
  - Used to 'drive' Microsoft Windows
- **The Keyboard**
  - The keyboard is still the commonest way of entering information into a computer
- **Tracker Balls**
  - an alternative to the traditional mouse and often used by graphic designers
- **Scanners**
  - A scanner allows you to scan printed material and convert it into a file format that may be used within the PC
- **Touch Pads**
  - A device that lays on the desktop and responds to pressure
- **Light Pens**
  - Used to allow users to point to areas on a screen
- **Joysticks**
  - Many games require a joystick for the proper playing of the game



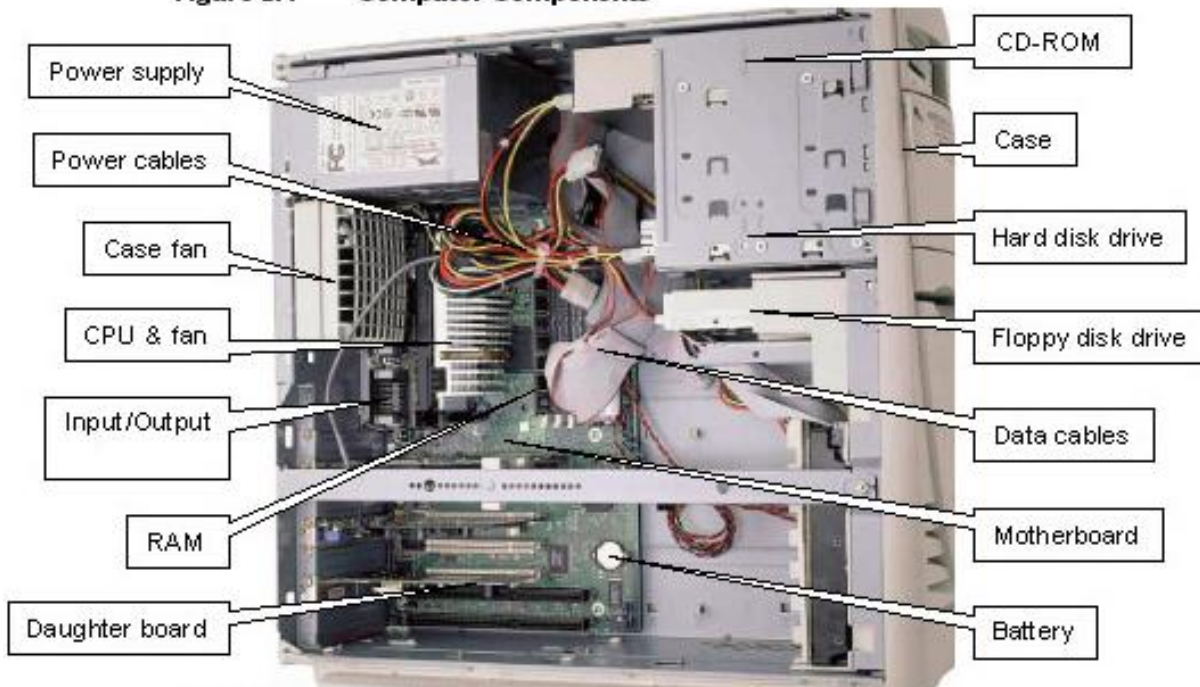
## OUTPUT DEVICES

- **VDU**
  - The computer screen is used for outputting information in an understandable format
- **Printers**
  - There are many different types of printers.
  - In large organizations laser printers are most commonly used due to the fact that they can print very fast and give a very high quality output.
- **Plotters**
  - A plotter is an output device similar to a printer, but normally allows you to print larger images.
- **Speakers**
  - Enhances the value of educational and presentation products.
- **Speech synthesisers**
  - Gives you the ability to not only to display text on a monitor but also to read the text to you



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**Figure 2.1 Computer Components**



## L.O.1.2 IDENTIFY VARIOUS CONNECTORS AND PORTS

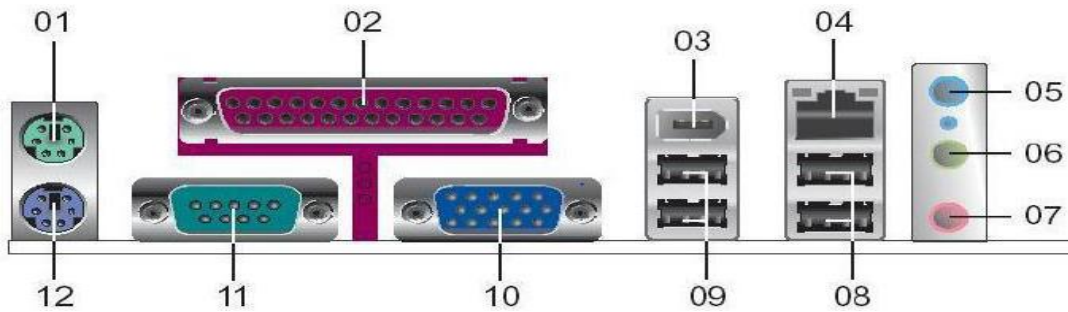
### **Ports and connectors**

WHAT IS A COMPUTER CONNECTOR?

A connector is the part of a cable that plugs into a [port](#) or [interface](#) to connect one [device](#) to another. Most connectors are either male (containing one or more exposed [pins](#)) or female (containing holes in which the male connector can be inserted).

A cable has a connector at each end that plugs into a corresponding port on a PC. Connectors carry data and sometimes power between devices attached to the PC.

Ports are the interfaces, the doorways, that we use to connect devices to the PC. The point at which a peripheral attaches to the computer and communicates with a system unit so that the peripheral can send data to or receive information from the computer system.



1	PS/2 mouse		8	USB 2.0 connectors	
2	Parallel port		9	USB 2.0 connectors	
3	IEEE 1394 connector		10	VGA connector	
4	RJ-45 connector		11	Serial connector	
5	Line in jack		12	PS/2 Keyboard	
6	Line out jack				
7	Microphone jack				

## A. Serial and parallel ports

### Serial Ports

Serial ports come in 9-pin and 25-pin varieties. Of the two, the 9-pin (five pins on the top row, four on the bottom) variety is much more common, although even those are rapidly disappearing from modern PCs.

Figure:



Serial ports transfer data one bit (the smallest unit of data in the PC world) at a time, with a maximum throughput speed of 115 kilobits per second (Kbps). Devices that connect to the PC via the serial port include mice, external modems, personal digital assistants (PDAs), digital cameras, and so on.

### Parallel Ports

Parallel ports are the 25-pin (13 on the top row, 12 on the bottom) female ports on the back of your PC.

Figure:



Parallel ports are much more efficient than serial ports, transferring data eight bits, or one byte, at a time. Standard parallel ports have a total throughput speed of about 150,000 bytes per second, or 150 KBps. There are many types of parallel ports, but the term has become most closely associated with the **printer port**

## B. Universal Serial Bus (USB) port

An external bus that supports Plug and Play installation. Using USB, you can connect and disconnect devices without shutting down or restarting your computer. You can use a single USB port to connect up to 127 peripheral devices, including speakers, telephones, CD-ROM drives, joysticks, tape drives, keyboards, scanners, and cameras. A USB port is usually located on the back of your computer near the serial port or parallel port

Figure:



### C. Network adapter

RJ45 Connector: (called LAN or Ethernet port) permits to connect a computer to a network. It corresponds to a network card integrated on a motherboard

### D. The Keyboard and mouse connector

Most PCs have a purple mini-DIN (Deutsche Industry Norm) connector for the keyboard. Keyboard connectors are always male and keyboard ports are always female, regardless of the pin type. Many keyboards come with adapters that enable you to plug a PS/2-style keyboard connector into an AT-style keyboard port, or vice versa.

Like keyboards, mice come in an array of sizes and shapes, and they use a variety of connectors. Traditionally, mice plugged into one of the serial ports on the back of the PC, but most motherboards today have a dedicated mini-DIN mouse port. Aside from color, the green mouse port appears identical to the purple PS/2 keyboard port, but they're not interchangeable.

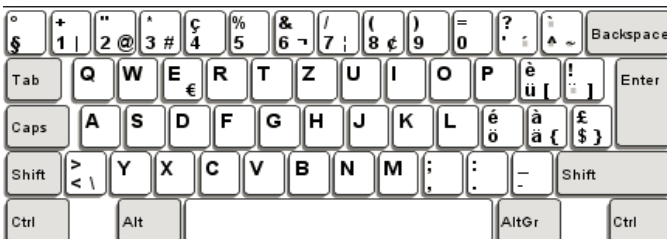
Figure:



### Types of keyboards

WHAT IS A QWERTY KEYBOARD?

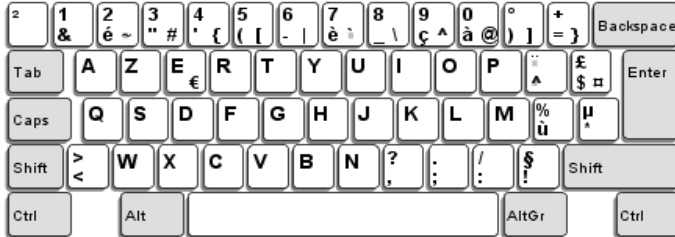
**QWERTY** keyboards, also known as *Sholes* keyboards, refer to the five consecutive letters on the upper left corner of the keypad. This type of keyboard bears the layout used for Latin languages and is the most common keyboard used in the United States:





## WHAT IS AN AZERTY KEYBOARD?

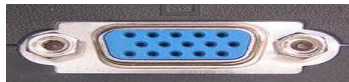
An AZERTY keyboard is the most common type of keyboard used in France. The letters are also found in a consecutive sequence on the upper left corner of the keypad:



### **E. VGA connector (or video connector or sub-D15)**

It permits to connect a screen. This connector corresponds to a graphic card integrated on a motherboard. Standard cathode ray tube (CRT) monitors connect to your PC using a 15-pin DB connector arranged in three rows of five pins each. The corresponding video port on the PC accommodates only that connector. No other port on your PC looks like this one.

Figure:



### **F. Audio Ports (Line-In, Line-Out and microphone)**

They correspond to a sound card. At one time, audio was considered an extra add-on, but sound is standard issue on modern PCs. A PC typically has three color-coded sound ports: a green speaker output port, a pink microphone input port, and a blue auxiliary input port


Figure:



### L.O.1.3 USE DESKTOP'S ELEMENTS

A computer desktop is where you organize your computer work. A desktop consists of pictures, called icons, files, folders and other items. You can arrange the desktop just as you can arrange real objects on a real desktop. A desktop it's the first blue Windows operating system screen, such as it's the first image you see when you start up your computer. It consists of many element depends of how you activate those element but the following are mainly presented elements.



Element	Description
1. <b>Start button</b>	An ever present button at the left of our desktop containing a number of options. The shortcut of Start Button on the key board is the key that has a symbol of a window  between the ctrl and alt key on key board.
2. <b>Icons</b>	<p>Images used to represent information within the computer. They can represent short cuts, folders, file or an application.</p> <p><b>File:</b> When you save a document to your hard drive, it becomes a file. A file has two important features: it has a name so that you can tell it apart from other files and it has place to live like a home address.</p> <p><b>Folder:</b> unlike a file, is a storage unit or container. Like a file, it also has a name. a folder is not file but it contains files. In addition to files, a folder can also contain other folders, this is like a bigger box containing smaller boxes, and each smaller box holding even smaller boxes.</p> <p><b>Shortcut:</b> is an icon or picture that links an action, an application program, a document, or some other resource to the computer desktop.</p>
3. <b>The</b>	Is the long horizontal bar at the bottom of your screen. Unlike the desktop,

<b>taskbar:</b>	<p>which can get hidden by open windows, the taskbar is almost always visible. It has three main sections:</p> <p>The Start button (see on 1), which opens the Start menu.</p> <p>The middle section, which shows you which programs and files you have open and allows you to quickly switch between them (see on 3).</p> <p>The notification area, which includes a clock and icons (small pictures) that communicate the status of certain programs and computer settings (see on 7).</p>
4. <b>Drop-down Menus:</b>	<p>Sometimes referred to as a <i>pull-down menu</i>, <i>drop-down list</i>, or <i>drop-down box</i>, a dropdown menu is a list of items that appear when clicking on a button or text selection. For example, many programs have a "File" in menu bar ( see on 6) drop down menu at the top left of their screen. Clicking on the "File" text generates a new menu with additional options. Anywhere on the desktop background (see on 8) by using right click, you will see the dropdown Menu.</p>
5. <b>Gadgets:</b>	<p>Right click the desktop, on dropdown menu, select Gadgets and drag (holding the button of your mouse down and moving the mouse where you want to add a gadget) the desired gadgets to the desktop.</p>
6. <b>Menu Bar:</b>	<p>The menu bar is right below the title bar of an open window. Clicking on one of items will drop down a menu of program commands.</p> <p><b>Menu:</b> A menu is just a list of commands. Drop down menus are associated with menu bars, and pop up or right click menus appear when you right click an item. Not all items will have right click menus, but when they do it is a convenient way to change their properties</p> <p><b>Tool tip:</b> Tool tips are the little yellow help boxes that pop up when you hover the mouse over some areas of the desktop to remind you what the item is or does.</p> <p><b>Dialog Box:</b> Dialog boxes are the forms that you fill out to execute some commands. They may contain drop down lists, text areas, check boxes, or radio buttons, which are a group or related buttons of which only one can be selected</p>
7. <b>Date and time:</b>	<p>The notification area show both a clock and the date</p>
8. <b>Background</b>	<p>The screen provides an access interface to computer applications</p>

#### **L.O.1.4 SCAN VIRUSES IN THE COMPUTER AND DIFFERENT STORAGES**

Antivirus (anti-virus) software is a class of program that will prevent, detect and remediate [malware](#) infections on individual computing devices and IT systems.

Antivirus software is a type of [utility](#) used for scanning and removing [viruses](#) from your computer. While many types of antivirus programs exist, their primary purpose is to protect computers from viruses and remove any viruses that are found.

Most antivirus programs include both automatic and manual scanning capabilities. The automatic scan may check files that are [downloaded](#) from the Internet, discs that are inserted into the computer, and files that are created by software [installers](#). The automatic scan may also scan the entire [hard drive](#) on a regular basis. The manual scan option allows you to scan individual files or your entire system whenever you feel it is necessary.

Since new viruses are constantly being created by computer [hackers](#), antivirus programs must keep an updated [database](#) of virus types. This database includes a list of "virus definitions" that the antivirus software references when scanning files. Since new viruses are frequently distributed, it is important to keep your software's virus database up-to-date. Fortunately, most antivirus programs automatically update the virus database on a regular basis.

**Examples of common antivirus programs** include Norton Antivirus, Kaspersky Anti-Virus, and Zone Alarm Antivirus.