# BASIC METAL WORKS

## Level-I

# Learning Guide-53

**Unit of Competence: Operate Personal Computer**

**Module Title: Operating Personal Computer**

**LG Code: IND BMW1 M16LO1-LG-53**

**TTLM Code: IND BMW1 M16 TTLM 1019v1**

**LO1:** Identify the functions of PC hardware components

| Instruction Sheet | Learning Guide #1 |
|---|---|

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- Identifying ***Hardware components*** in terms of device type and functions
- The interaction of components in terms of the flow of data

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to**:

- Identify ***Hardware components*** in terms of device type and functions
- Identify the interaction of components in terms of the flow of data

**Learning Instructions:**

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Utilize properly each information sheets
4. Accomplish the given “Self-checks.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation sheet.
6. Do the “LAP test” (if you are ready).

| Information Sheet-1 | Identifying Hardware components in terms of device type and functions |
|---|---|

**1. Computer**

A computer is an electronic device, operating under the control of instructions stored in its own memory that can accept data (input), process the data according to specified rules, produce information (output), and store the information for future use.

**2. Types of Computers**

Computers are classified by their data processing method as ***Analog*** and ***Digital***.

**A. Analog Computers** – Are a mechanical device, which is used to compute calculations physically by the movement or rotation of movable party, physically.

**B. Digital Computers** – is an electronic device, which is used to perform complex and cumbersome operations.

-Based on their **processing speed**, **power**, **cost** and **size** computers can be categorized in to four types.

1. Microcomputers
2. Minicomputers
3. Main frame computers
4. Supercomputers

1. **Microcomputers (personal computer)** – These types of computers are relatively small in size and cheaper in cost.

   -Microcomputers come in a Varity of sizes and shapes for a Varity of purposes. Basically they can be grouped in to three. These are Laptop, Palmtop and Desktop computers.

   The size of Desktop>Laptop>Palmtop.

2. **Minicomputer** – Minicomputers are Mid-range computers. Those are large and more powerful than most microcomputers but are smaller and less powerful than mainframe computer systems.

3. **Mainframe Computers** – Are large, powerful computers that are physically larger than micros and minis computers usually have processor with faster instruction processing speed. For example, they may be able to process from 10 to 200 million instructions per second (MIPS).

   -This type of computers is less expensive than supercomputer & slow and smaller than the supper computer.

4. **Monster (Supper) Computers** – The term supper computer has been coined to describe a category of ***extremely powerful*** and ***most expensive*** computer designed for high speed processing.

### 3. Functionalities of a computer

Any digital computer carries out five functions in gross terms:

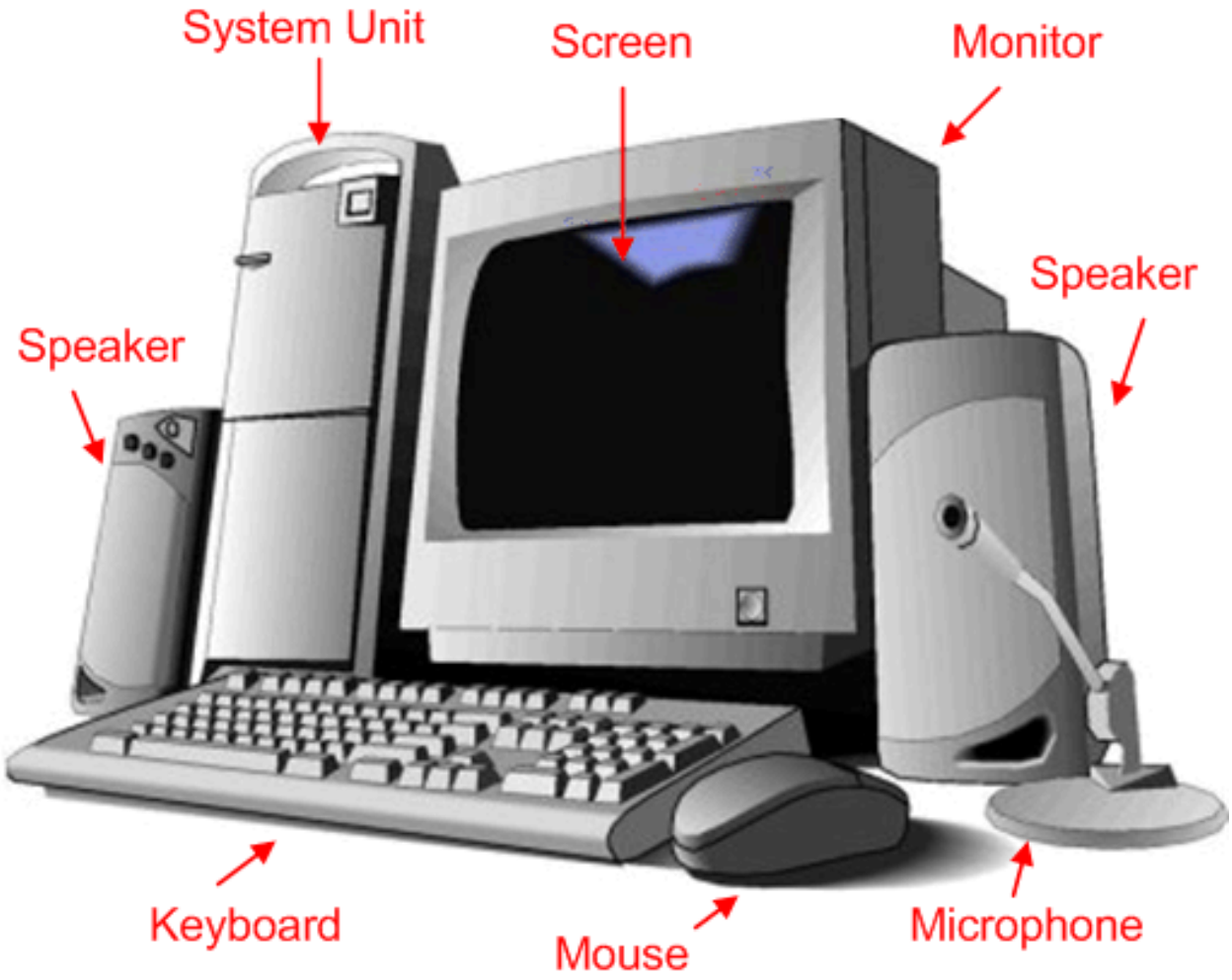
- Takes data as input.
- Stores the data/instructions in its memory and use them when required.
- Processes the data and converts it into useful information.
- Generates the output
- Controls all the above four steps.


### Computer Components

Any kind of computers consists of **HARDWARE** AND **SOFTWARE**.

**Hardware:**

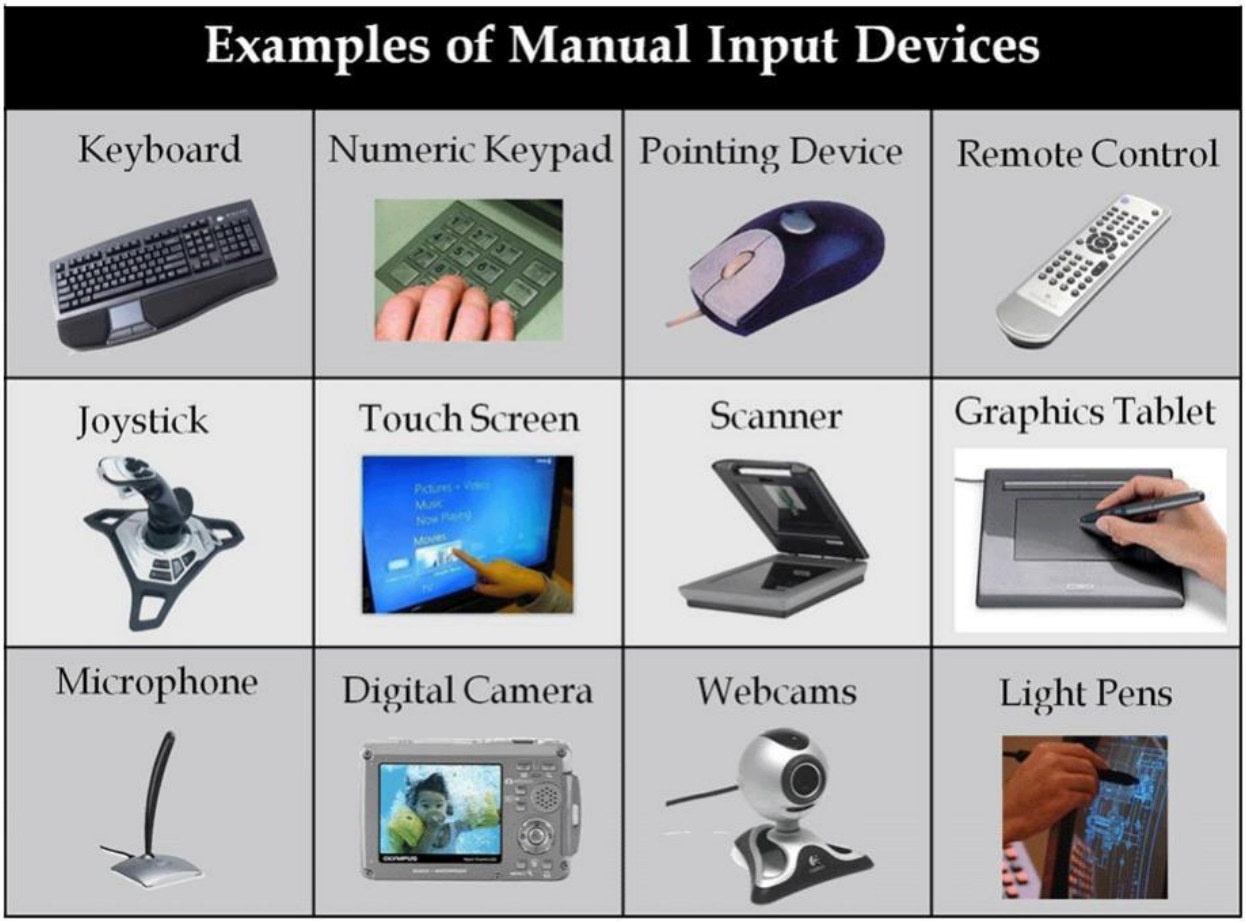
Computer hardware is the collection of **physical elements** that constitutes a computer system. Computer hardware refers to the physical parts or components of a computer such as the **monitor, mouse, keyboard, computer data storage, hard drive disk (HDD), system unit** (graphic cards, sound cards, memory, motherboard and chips), etc. all of which are physical objects that can be touched.




## 4. Input Devices

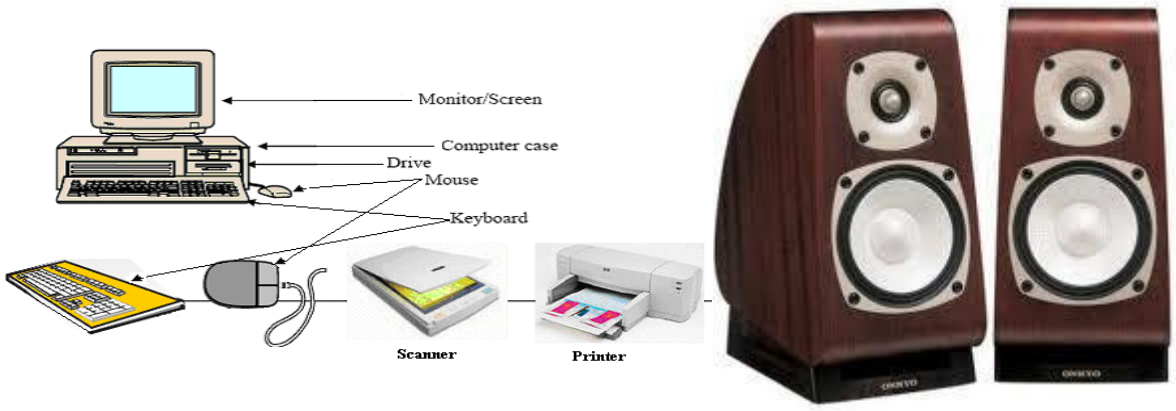
Input device is any peripheral (piece of computer hardware equipment to provide data and control signals to an information processing system such as a computer or other information appliance.

Input device Translate data from that humans understand to one that the computer can work with. Most common are keyboard and mouse.




Example of Input Devices:-

| | | |
|---|---|---|
| 1. Keyboard | 2. Mouse (pointing device) | 3. Microphone |
| 4. Touch screen | 5. Scanner | 6. Webcam |
| 7. Touchpads | 8. MIDI keyboard | 9. |
| 10.Graphics Tablets | 11.Cameras | 12.Pen Input |
| 13.Video Capture Hardware | 14.Microphone | 15.Trackballs |
| 16.Barcode reader | 17.Digital camera | 18.Joystick |
| 19.Gamepad | 20.Electronic Whiteboard | 21. |





| **Self check 1** | Written test |
|---|---|

**Directions:** Answer all the questions listed below Use the Answer sheet provided in the next page:

## PART I Write the correct answer if it is True say True if it is False say False

1. Input device is translate data from that humans understand to one that the computer can work with.
2. keyboard and mouse are not most common Input devices.
3. Computer hardware is the collection of physical elements that constitutes a computer system.
4. Computers are classified by their data processing method as Analog and Digital.

5. A computer is not an electronic device.

## PART II Multiple Choices

1. A machine that can receive and store information and change or process it.
   A. CD/DVD
   B. Computer
   C. Flop disk
   D. All

1. Which of the following is **not** true about the types of computer
   A. Mainframe computers are large-sized, powerful multi-user computers
   B. Mini micro computers Are small and less powerful than most micro computer
   C. . **Mini-computers** are mid-sized multi-processing computers.
   D. A and B

2. *Which one of the following computer is extremely powerful* and *most expensive* computer designed for high speed processing.
   *A.* Monster (Supper) Computers
   *B.* Micro computer
   *C.* Minicomputer
   *D.* Personal computer

2. _____is the center for your computer processing activity.
   *A.* CPU
   *B.* Mouse
   *C.* Key board
   *D.* Microphones

| Information Sheet-2 | The interaction of components in terms of the flow of data |
|---|---|

1. **Central Processing Unit (CPU)**A CPU is brain of a computer. It is responsible for all functions and processes.

Regarding computing power, the CPU is the most important element of a computer system.

**a. Primary Memory:-**

1. **RAM**: Random Access Memory (RAM) is a memory scheme within the computer system responsible for storing data on a temporary basis, so that it can be promptly accessed by the processor as and when needed. It is volatile in nature, which means that data will be erased once supply to the storage device is turned off. RAM stores data randomly and the processor accesses these data randomly from the RAM storage. RAM is considered "random access" because you can access any memory cell directly if you know the row and column that intersect at that cell.

2. **ROM** (Read Only Memory): ROM is a permanent form of storage. ROM stays active regardless of whether power supply to it is turned on or off. ROM devices do not allow data stored on them to be modified.

**b. Secondary Memory:-**

Stores data and programs permanently: it's retained after the power is turned off

1. **Hard drive (HD**): A hard disk is part of a unit, often called a "disk drive," "hard drive," or "hard disk drive," that store and provides relatively quick access to large amounts of data on an

electromagnetically charged surface or set of surfaces.

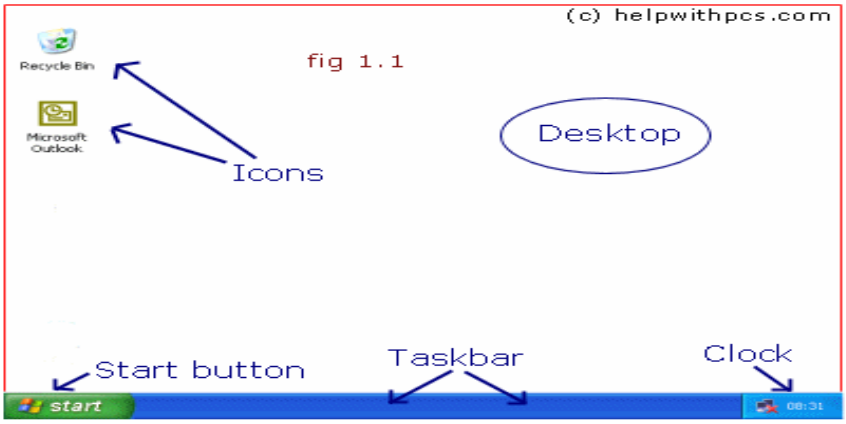
2. **Optical Disk**: an optical disc drive (ODD) is a disk drive that uses laser light as part of the process of reading or writing data to or from optical discs. Some drives can only read from discs, but recent drives are commonly both readers and recorders, also called burners or writers. Compact discs, DVDs, and Blu-ray discs are common types of optical media which can be read and recorded by such drives. Optical drive is the

generic name; drives are usually described as "CD" "DVD", or "Bluray", followed by "drive", "writer", etc. There are three main types of optical media: CD, DVD, and Blu-ray disc. CDs can store up to 700 megabytes (MB) of data and DVDs can store up to 8.4 GB of data. Blu-ray discs, which are the newest type of optical media, can store up to 50 GB of data. This storage capacity is a clear advantage over the floppy disk storage media (a magnetic media), which only has a capacity of 1.44 MB.

## 2. Desktop

The **desktop** is a work space that appears on the computer screen after you start a computer. It is an area where you can organize your computer work. The desktop can contain: icons, taskbar, start button, and mouse pointer.

The Windows XP Desktop




## 2.1. Elements of a desktop

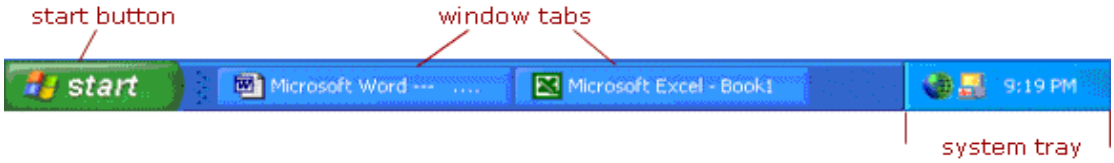
- **Icons**: are small pictures that represent a program or applications, files, folders, other objects.

  E.g.

  - The **My computer icon** represents a program you use to organize the files in the computer.
    - The **Recycle Bin icon** represents a storage area for deleted files.
    - **Folder icons** are usually yellow in colour and they are organizers for files and other folders. E.g. My Document folder.
    - **File icons:** represent files. They look different because the type of icons depends on the application on which they are created or the application (or

program) they represent. This in turn has a significant role to help user to easily identify file types.

- **Taskbar:** the bar usually located at the bottom of the desktop that organize the start button, opened windows, and the system date and time indicator.




- **Start button**: used to display a menu from which you can start programs, open documents, change system settings, get help, find files and folders, run applications and turn off the computer.
- **Mouse pointer**: an input device that help you to move, copy, select, deselect objects on the desktop and other windows.

## 3. MOUSE

Mouse is a small hand–held input device that you move around on your desk, usually on mouse pad. When you roll the mouse across your desk, a pointer (an arrow shape) moves on the screen.

A mouse makes it easy for you to point at object on the screen- an operation that you cannot do easily with a keyboard. Using a mouse, you can quickly select different screen objects, such as icons or menus.

A typical mouse has two buttons (left and right) for issuing commands. Some mice have three buttons in which the middle button has various functions, depending on the program being used.

- The left mouse button (primary button) is the one used most frequently. Most commands are issued with the button.
- The right mouse button (secondary button) is used to display a short cut menu (pop-up menu) which contains list of actions and options that can be applied on the selected item.

| Self check 2 | Written test |
|---|---|

**Directions:** Answer all the questions listed below Use the Answer sheet provided in the next page:

**Write the correct answer if it is True say True if it is False say False**

**1.** CPU is brain of a computer It is responsible for all functions and processes Regarding computing power.

**2.** (RAM) is a memory scheme within the computer system responsible for storing data on a temporary basis,

**3.** desktop is a work space that is not appears on the computer screen after you start a computer.

**4.** Mouse is a small hand–held input device that you move around on your desk.

**5.** A mouse does not makes easy for you to point at object on the screen- an operation that you cannot do easily with a keyboard.

**Part II matching**

| Column A | column B |
|---|---|
| 1____CD | A. Input Device |
| 2____Key Board | B. Functional key |
| 3____ F1,F2,F12.. | C. optical storage |
| 4____Mouse | D. Controlling the overall operation of system |
| 5____Controlling unit | E. perform task like calculation |
| 6____Arithmetic and logic unit | F output device |
| 7_____RAM | G. Permanent memory |
| 8_____ROM | H. Temporary work space |
| 9_____Printer | I. move the insertion point around the screen |

| Information Sheet-3 | Understand operation of the system and application software |
|---|---|

**1. Computer Software**

- Software is the general term for set of instruction that controls a computer or it is a series of instruction that tell the hardware what to do. It include all set of information processing instruction.

Computer software is divided in to two major categories.

- System Software
- Application Software

1.1. **System software** – Consists of instructions or programs that are used to manage the hardware resources of a computer and perform required information processing tasks.

- It provides the interface between the hardware and the user. Interface is the means by which a person interacts with a computer.
- System software includes; Operating system, system support and system development software.

**Operating system software** – is a set of programs that control and supervises the overall performance of the computer. *E.g. Ms-DOS and MS-Window*

**System support software** – Provide system utilities and other operating services. *E.g. Disk format programs*.

**System development** – It includes the computer programming translators that are used to convert written programs to machine language for execution.

**1.2. Application software** – Consists of programs that in conjunction with system software instruct the computer to perform specific information processing activities.

E.g. MS-Word, MS-Excel, MS-Access----------

**2. Types Of Operating System**

1. **Single-User, Single-tasking** – Used to stand alone computer. It can only enable the user to perform one task at a time and can serve only one user at a time.

2. **Single-User, Multi-tasking** – an operating system, which can serve only one user at a time but enable the user to concurrently run multiple programs or performs multiple tasks.
3. **Multi-user, Multi-tasking** – an operating system, which serve many user at a time to perform different tasks.

| **Self check 1** | Written test |
|---|---|

**Directions:** Answer all the questions listed below Use the Answer sheet provided in the next page: **Write the correct answer if it is True say True if it is False say False**

1. Software is the general term for set of instruction that controls a computer.
2. Software is not a series of instruction that tell the hardware what to do.
3. System software is provides the interface between the hardware and the user.
4. System support software is provide system utilities and other operating services.

# BASIC METAL WORKS

## Level-I

# Learning Guide-54

**Unit of Competence: Operate Personal Computer**

**Module Title: Operating Personal Computer**

**LG Code: IND BMW1 M16 LO2-LG-54**

**TTLM Code: IND BMW1 M16 TTLM 1019v1**

**LO2:** Understand operation of the system and application software

| Instruction Sheet | Learning Guide #2 |
|---|---|

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- . Identifying and describing System software
- . Identifying and stating purpose of application software
- . Describing the interaction between system software and application software

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to**:

- System software is identified and described in terms of its purpose and operation
- Application software is identified and its purpose stated in terms of outputs
- The interaction between system software and application software is described

**Learning Instructions:**

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Utilize properly each information sheets
4. Accomplish the given “Self-checks.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation sheet**.**
6. Do the “LAP test” (if you are ready).

| Information Sheet-1 | System soft ware |
|---|---|

## 1. Software

Software is a generic term for organized collections of computer data and instructions, often broken into two major categories: system software that provides the basic nontask- specific functions of the computer, and application software which is used by users to accomplish specific tasks.

***Software Types***

**A. System software** is responsible for controlling, integrating, and managing the individual hardware components of a computer system so that other software and the users of the system see it as a functional unit without having to be concerned with the low-level details such as transferring data from memory to disk, or rendering text onto a display. Generally, system software consists of an operating system and some fundamental utilities such as disk formatters, file managers, display managers, text editors, user authentication (login) and management tools, and networking and device control software.

B. **Application software** is used to accomplish specific tasks other than just running the computer system. Application software may consist of a single program, such as an image viewer; a small collection of programs (often called a software package) that work closely together to accomplish a task, such as a spreadsheet or text processing system; a larger collection (often called a software suite) of related but independent programs and packages that have a common user interface or shared data format, such as Microsoft Office, which consists of closely integrated word processor, spreadsheet, database, etc.; or a software system, such as a database management system, which is a collection of fundamental programs that may provide some service to a variety of other independent applications.

**Comparison Application Software and System Software**

| | System Software | Application Software |
|---|---|---|
| | Computer software, or just software is a general term primarily used for digitally stored data such as computer programs and other kinds of information read and written by computers. App comes under computer software though it has a wide scope now. | Application software, also known as an application or an "app", is computer software designed to help the user to perform specific tasks. |
| Example: | 1) Microsoft Windows<br>2) Linux<br>3) Unix<br>4) Mac OSX<br>5) DOS | 1) Opera (Web Browser)<br>2) Microsoft Word (Word Processing)<br>3) Microsoft Excel (Spreadsheet software)<br>4) MySQL (Database Software)<br>5) Microsoft PowerPoint (Presentation Software)<br>6) Adobe Photoshop (Graphics Software) |
| Interaction: | Generally, users do not interact with system software as it works in the background. | Users always interact with application software while doing different activities. |
| Dependency: | System software can run independently of the application software. | Application software cannot run without the presence of the system software. |

| **Self check1** | Written test |
|---|---|

**Directions:** Answer all the questions listed below Use the Answer sheet provided in the next page

**these questions are multiple choices; in each case, find the most plausible answer**

**1.** _____ is used to accomplish specific tasks other than just running the computer system.

A. Application software B. System software C. Software D. None

**2.** _____software may consist of a single program, such as an image viewer;

A. Software B. Application software C. System software

3. a small collection of programs often called a _____

A . software suite B. software package **C.** Software **D.** None

| Information Sheet-2 | The interaction between system software and application |
|---|---|

***1. Storage measurements***: The basic unit used in computer data storage is called a bit (binary digit). Computers use these little bits, which are composed of ones and zeros, to do things and talk to other computers. All your files, for instance, are kept in the computer as binary files and translated into words and pictures by the software (which is also ones and zeros). This two number system, is called a “binary number system” since it has only two numbers in it. The decimal number system in contrast has ten unique digits, zero through nine.

Computer Storage units

| Bit | BIT | 0 or 1 |
|---|---|---|
| Kilobyte | KB | 1024 bytes |
| Megabyte | MB | 1024 kilobytes |
| Gigabyte | GB | 1024 megabytes |
| Terabyte | TB | 1024 gigabytes |

Size example

- 1 bit - answer to an yes/no question
- 1 byte - a number from 0 to 255.
- 90 bytes: enough to store a typical line of text from a book.
- 4 KB: about one page of text.
- 120 KB: the text of a typical pocket book.
- 3 MB - a three minute song (128k bitrate)
- 650-900 MB - an CD-ROM
- 1 GB -114 minutes of uncompressed CD-quality audio at 1.4 Mbit/s
- 8-16 GB - size of a normal flash drive

**2. Speed measurement**: The speed of Central Processing Unit (CPU) is measured by Hertz (Hz), Which represent a CPU cycle. The speed of CPU is known as Computer Speed.

| CPU SPEED MEASURES | |
|---|---|
| 1 hertz or Hz | 1 cycle per second |
| 1 MHz | 1 million cycles per second or 1000 Hz |
| 1 GHz | 1 billion cycles per second or 1000 MHz |

## 3. Windows Overview

Windows is an operating system. An operating system is software that co-ordinates the overall activities of a computer and control the way the computer work. As the operating system, windows control all the basic functions of the computer. Windows serves as the interface between you and the hardware and software that make up the computer system.

***Window*** is a rectangular framed region on the desktop that provides commands and activities which enable you to easily manage, communicate and work with applications, dialog boxes, etc.

## 4. switching on and Turning off /shutting down the computer

***a. Switching on computer***

*You switch on the computer with a power switch on the front or side of the system unit. If the monitor light doesn't come on after about 3 seconds, i.e. after you turn on the system units on-off switch, find and press the monitor's on–off switch.*

***b. Turning off /shutting down the computer***

- *Click on start*
- *Click on Turn Off Computer*
- *The diagram below will be displayed and click* on Turn Off button


**Standby** - This will put your computer into standby mode, basically it will power down components like the monitor and hard drive to preserve energy.

**Turn Off** - Shuts down the PC, always use this option to turn off your PC.

**Restart** - this will restart the computer.

| | |
|---|---|
| **Self check2** | Written test |

**Directions:** Answer all the questions listed below Use the Answer sheet provided in the next page

**these questions are multiple choices; in each case, find the most plausible answer**

1. The basic unit used in computer data storage is called a_____

A.Bit B. binary digit C.A&B D. None

2. _____is control all the basic functions of the computer

A. windows B. Bit C.A&B D. None

3. The Nspeed of Central Processing Unit is measured by Speed measurement called.

A. *Click on start* B. Hertz (Hz) C. Turn Off D. A&B

# BASIC METAL WORKS

## Level-I

# Learning Guide-55

**Unit of Competence: Operate Personal Computer**

**Module Title: Operating Personal Computer**

**LG Code: IND BMW1 M16 LO3-LG-55**

**TTLM Code: IND BMW1 M16 TTLM 1019v1**

**LO3:**Perform basic operation and maintenance procedures

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- connecting basic components of a PC system
- Safety requirements during connecting PC components
- powering up a PC system according to organisational requirements
- Identifying Simple hardware faults
- airing for and maintaining A PC system

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to**:

- connect basic components of a PC system
- Safety requirements during connecting PC components
- power up a PC system according to organisational requirements
- Identify Simple hardware faults
- correct or report Simple hardware faults
- airing for and maintaining A PC system

**Learning Instructions:**

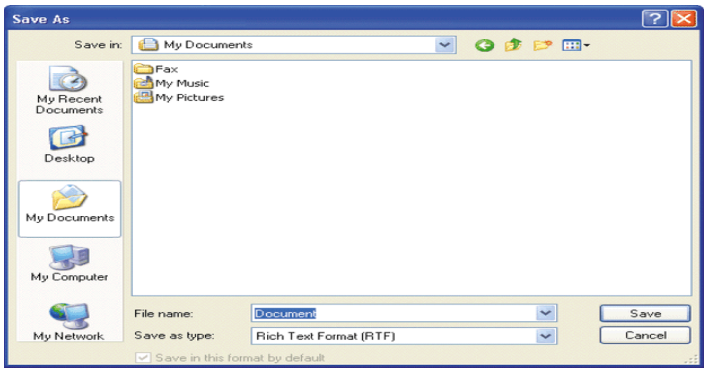
1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Utilize properly each information sheets
4. Accomplish the given “Self-checks.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation sheet**.**
6. Do the “LAP test” (if you are ready).

| Information Sheet-1 | **Saving and Opening Files** |
|---|---|

**1. Saving Files**

You create documents by using application programs like WordPad. The word file refers to any document that is saved or will be saved onto a storage device like floppy disk or hard disk for future use.

Most windows program provide two commands that let you save document → **save** and **save as** commands.




**Saving a file**

- Click on save button on standard tool bar OR choose ***file →save or file →save As*** from menu bar.
- Select the folder or drives from ***save In*** combo box where you want to save document from the save as dialog box appeared.
- Type the file name in the file name text box, and
- Click on save button.

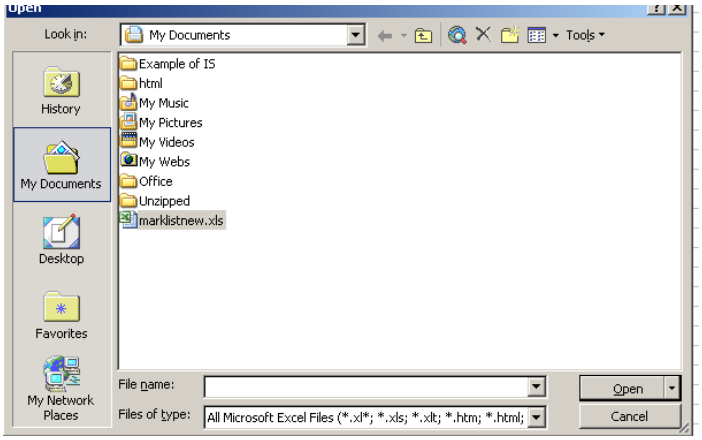
If you are saving the document for the first time save and save as commands are the same. How ever, use the command:

- **Save:** to save a file for the first time and to update a saved file under the same name and location
- **Save As:** to save a file for the first time or under a new name and/ or to a different location.

**To open a Document**

- Click on **File** → **open** command from menu bars OR click open button on standard tool bar.

- Click on the **look In combo button** and select the drives or folder that contains the file you need to open from the open dialog box appeared.
- Select the file name you want to open
- Click on open button OR Double click on the file name.




## 2. Understanding File Management

- File management is organizing and keeping track of files and folders
  - **File** – is a collection of computer data that has some common purpose.
    - E.g. a letter you have typed, a picture you have drawn.
  - **Folder**- is an electronic location in which you store groups of related files. It is also possible to place folders inside of other folders.
    - E.g. a folder to store all the files for an application program.
  - **Drive** – is a physical place in which you store files and folders.
    - E.g. a floppy disk, hard disk.
- File management can help you do the following:
  - Create a new folder so you can reorganize information
  - Examine and organize files and folders in a file hierarchy
  - Copy, move, and rename files and folders
  - Delete files and folders you no longer need and restore files you delete accidentally
  - Locate a file easily with the Search feature

- Create shortcuts to files and folders

**3. Creating new folder:**

To create a new folder, select the location where you want to create the new folder, and then name it meaningfully, so you can know its contents by reading the name

Thus

- Navigate to the folder where the new folder will be stored
- Click File on the menu bar, point to New, then click Folder
- Type the folder name, then press [Enter]

**4. Renaming file and folder:**

- Navigate to the disk drive which contains the file or the folder you want to rename.
- Select the file or the folder
- Choose file menu and click Rename
- Type the new name and press ENTER key.

**Or**

- Right–click the file or the folder and click rename from the short cut (pop-up) menu.
- Type the new name and press ENTER key.

**5. Deleting a file or a folder using file menu:**

- Navigate to the disk drive which contains the file or the folder you want to delete.
- Select the file or folder
- Choose the file menu and click delete

## 6. Customizing a Desktop

**To change your desktop background**

1. To open Display Properties, click **Start**, click **Control Panel**, and then double-click **Display**, ***OR***, Right click on free Desktop area then choose Properties.
2. On the **Desktop** tab, do one or more of the following:

- Click a picture in the **Background** list. In **Position**, click **Center**, **Tile**, or **Stretch**.
- Click **Browse** to search for a background picture in other folders or on other drives. You can use files with the following extensions: .bmp, .gif, .jpg, .dib, .png, .htm. In **Position**, click **Center**, **Tile**, or **Stretch**.
- Select a color from **Desktop color**. The color fills the space not used by a picture.
- Click Apply button
- Finally click on OK


**To set or change a screen saver**

1. To open Display Properties, click **Start**, click **Control Panel**, and then double-click **Display**, OR, Right click on free Desktop area then choose Properties.
2. On the **Screen Saver** tab, under **Screen saver**, click a screen saver in the list.

***Note***

- After you select a screen saver, it will automatically start when your computer is idle for the number of minutes specified in **Wait**.
- To clear the screen saver after it has started, move your mouse or press any key.
- To view possible setting options for a particular screen saver, click **Settings** on the **Screen Saver** tab.
- Click **Preview** to see how the selected screen saver will appear on your monitor. Move your mouse or press any key to end the preview

**To set or change a screen saver**

3. To open Display Properties, click **Start**, click **Control Panel**, and then double-click **Display**, OR, Right click on free Desktop area then choose Properties.
4. On the **Screen Saver** tab, under **Screen saver**, click a screen saver in the list.

***Note***

- After you select a screen saver, it will automatically start when your computer is idle for the number of minutes specified in **Wait**.
- To clear the screen saver after it has started, move your mouse or press any key.
- To view possible setting options for a particular screen saver, click **Settings** on the **Screen Saver** tab.
- Click **Preview** to see how the selected screen saver will appear on your monitor. Move your mouse or press any key to end the preview.

**To set or change a screen saver**

5. To open Display Properties, click **Start**, click **Control Panel**, and then double-click **Display**, OR, Right click on free Desktop area then choose Properties.
6. On the **Screen Saver** tab, under **Screen saver**, click a screen saver in the list.

***Note***

- After you select a screen saver, it will automatically start when your computer is idle for the number of minutes specified in **Wait**.
- To clear the screen saver after it has started, move your mouse or press any key.
- To view possible setting options for a particular screen saver, click **Settings** on the **Screen Saver** tab.
- Click **Preview** to see how the selected screen saver will appear on your monitor. Move your mouse or press any key to end the preview.

| | |
|---|---|
| **Self check1** | Written test |

**Directions:** Answer all the questions listed below Use the Answer sheet provided in the next page

## PART I these questions are multiple choices; in each case, find the most plausible answer

1. _____is use to see how the selected screen saver will appear on your monitor.

A . Click preview B. clicksettings C .a&b D. None

2. To open Display Properties,

A. clickStart B.clickControlPanel, C. double-clickDisplay, D.all

3. _____ IS select the location where you want to create the new folder,

A. To create a new folder B. click Control Panel, C. double-click Display, D.all

4. Saving file is

A. The process of storing a document on computer for further use
B. The process of writing a document from Random Access Memory (RAM) to secondary storage devices like floppy disk
C. The processes of retrieving (accessing) back a document from hard disk to RAM.

D.All except C

# PART I Matching

| Column A | column B |
|---|---|
| 1. ___Desk top | A. where the operating system and application program are kept |
| 2. ___Icon | |
| 3___Window | B. the least storage media |
| 4___Title bar | C. that appear at the top of the window |
| 5___Task bar | D. Horizontal bar at the very bottom of the desk top |
| 6___Floppy disk | E. Area on the screen |
| 7___Hard disk drive | F. Back ground screen |
| | G. small picture that appear on your desk top |

**the Hard Drive**

**A. Disk Cleanup**

To keep a PC running smoothly, regular maintenance is critical. The Disk Cleanup Utility can determine which files on your hard drive may no longer be needed and delete those files. In addition to freeing up potentially significant amounts of hard drive space, using Disk Cleanup on a regular basis can improve system performance.

The utility can be accessed in any of the following methods listed below.

• Click **Start** I **All Programs** I **Accessories** I **System Tools** I **Disk Cleanup**
• Click on Start and search for **Disk Cleanup**

Use the drop down menu to choosethe drive you want to clean.
NOTE:

The process of scanning your hard drives may take a few minutes

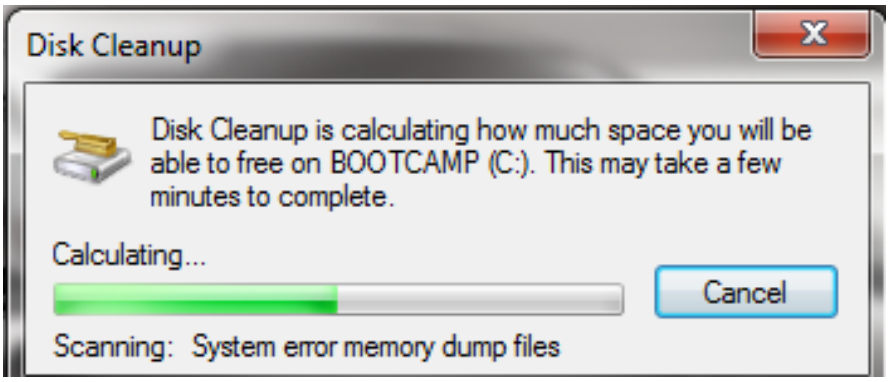
When the scan is complete you will be presented with a list of temporary folder and the amountof space used by the each folder.
Select:

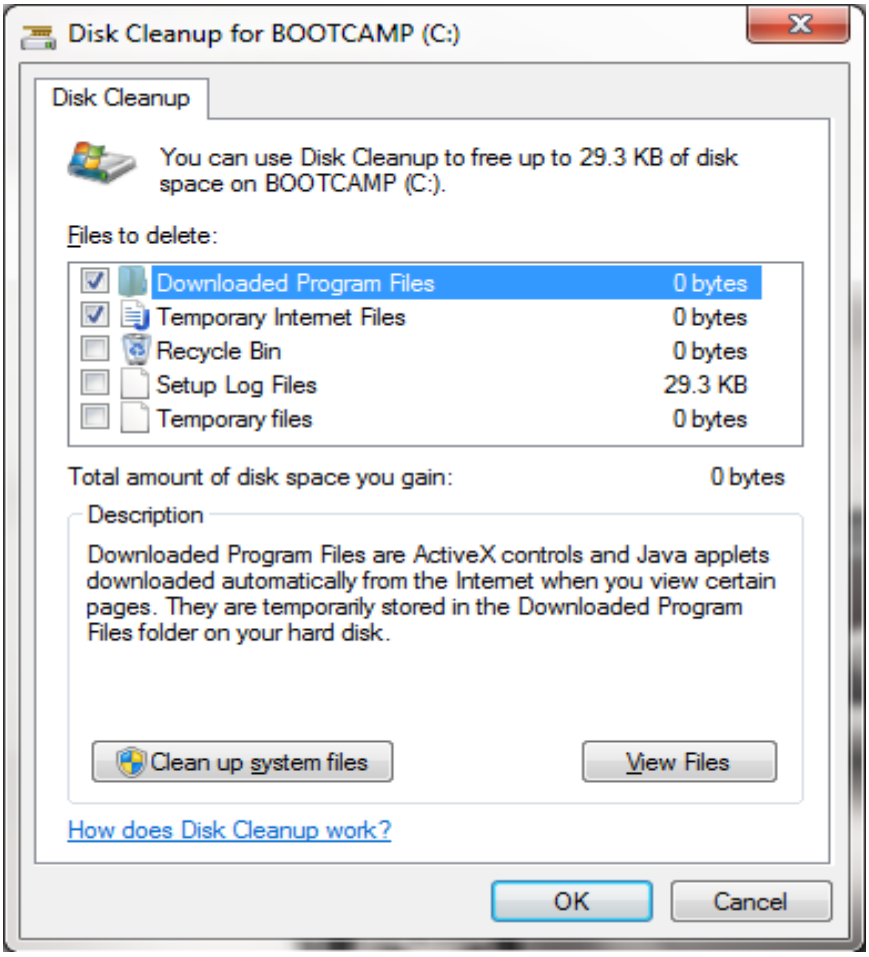
Temporary Internet Files

• Recycle Bin

• Temporary files

Click OK.


Disk Cleanup
Disk Cleanup is calculating how much space you will be able to free on BOOTCAMP (C:). This may take a few minutes to complete.
Calculating...
Cancel
Scanning: System error memory dump files

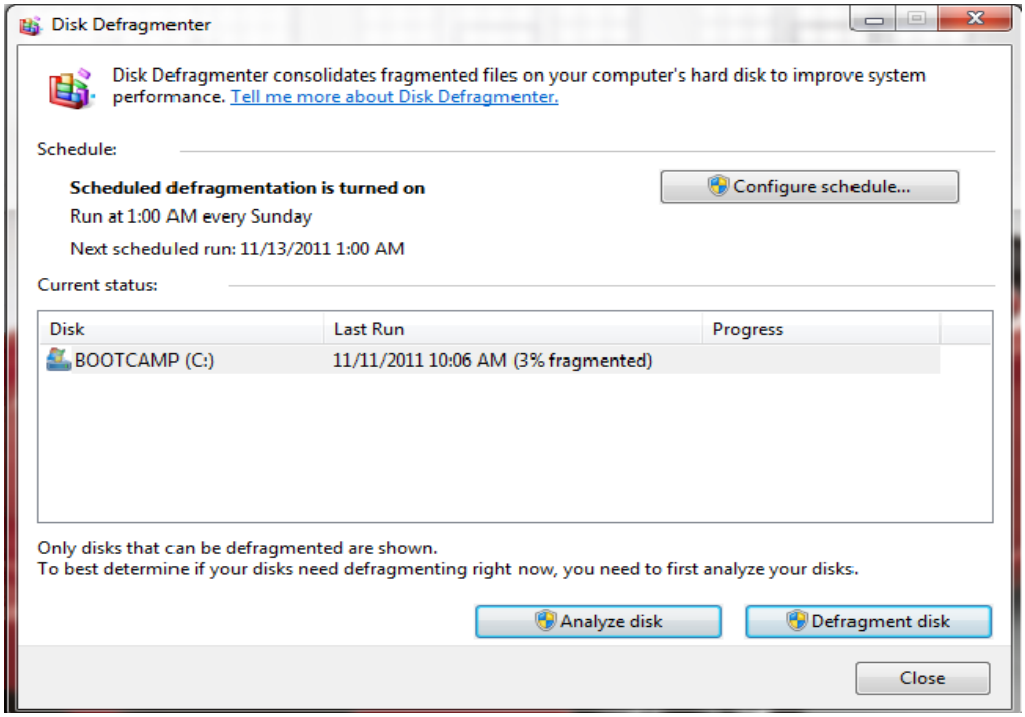

Disk Cleanup for BOOTCAMP (C:)
Disk Cleanup
You can use Disk Cleanup to free up to 29.3 KB of disk space on BOOTCAMP (C:).
Files to delete:
Downloaded Program Files 0 bytes
Temporary Internet Files 0 bytes
Recycle Bin 0 bytes
Setup Log Files 29.3 KB
Temporary files 0 bytes
Total amount of disk space you gain: 0 bytes
Description
Downloaded Program Files are ActiveX controls and Java applets downloaded automatically from the Internet when you view certain pages. They are temporarily stored in the Downloaded Program Files folder on your hard disk.
Clean up system files
View Files
How does Disk Cleanup work?
OK
Cancel

The process of deleting your cached files can take a few minutes

**b. Disk Defragmenter**

Disk Defragmenter is used to organize files on the hard drive and optimize free space, improving the speed and performance of the computer. Some applications may fail outright if the disk becomes too fragmented.

1. To run Disk Defragmenter, click on **Start** I **All Programs** I **Accessories** I **System Tools** I **Disk Defragmenter**.



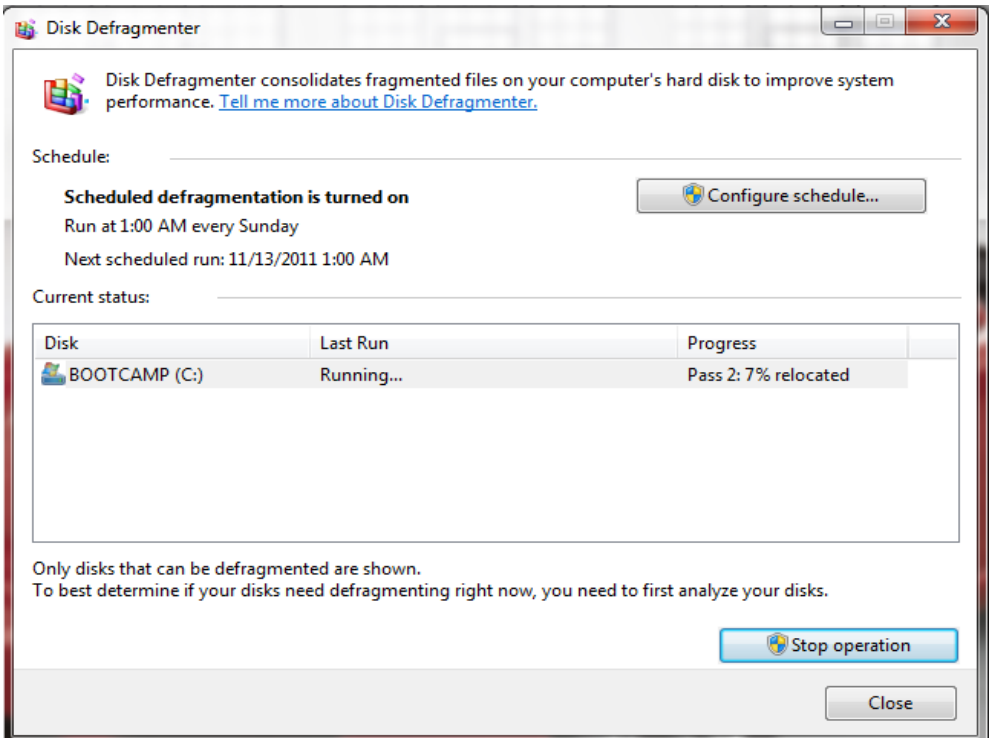

NOTE

You MUST have administrative rights in order to perform this process.

2. If your hard drive is partitioned (you have more than one drive), choose which drive you wish to defragment. In most cases, you will select C.

3. Click on the **Defragment disk** button to begin the operation.

4. When defragmenting begins it will always analyze the hard drive first and then start the defragmentation process.




## 2. Maintaining the Battery

**NOTE**

Most laptop batteries will last at least four hours when fully charged. If not maintained, however, the battery will require charging more frequently. Following are tips for properly maintaining your battery for maximum performance.

Use the battery as your power source until the low battery warning emerges

Using your laptop with the AC adapter plugged into an electrical outlet will overcharge the battery. Overcharging decreases the life of the battery. Eventually the battery will be unable to hold a charge and will require a replacement.

Condition the battery for maximum performance

1. Discharge the battery – use the battery until the low battery warning emerges.

2. Charge the battery – use the AC adapter until the battery is fully charged. Then immediately disconnect the AC adapter from the notebook.

The procedure above insures both maximum performance and long life for the battery.

## 3. Introduction to Microsoft Word

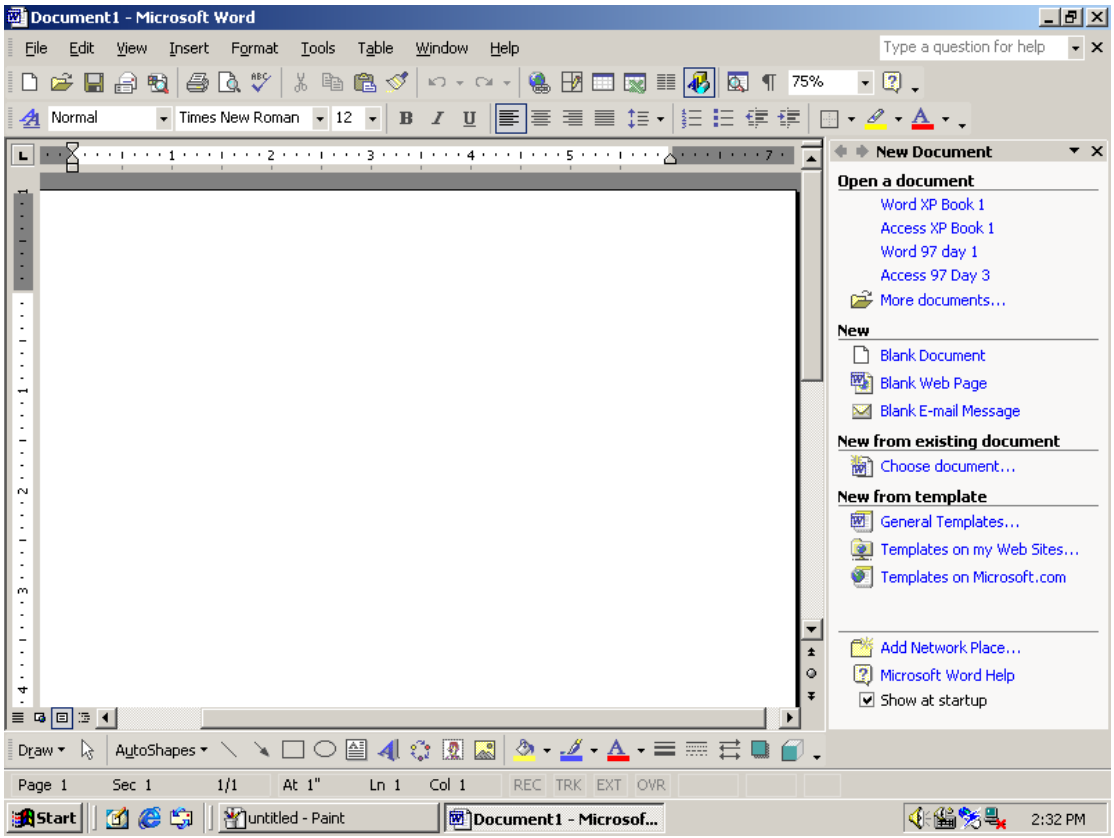
Microsoft Word (MS-Word) is word processing software that runs on the windows operating system, which enables you to create, edit, format, save and print document for future retrieval. MS-Word is software that overlooks the work of typewriter. Advantage of MS-Word over type-writer:

- MS-Word enables you see and adjust the print preview of your document that avoids wastage of resources.
- MS-Word enables you format and edit your documents as you wish
- MS-Word enables you correct spelling and grammar errors
- MS-Word enables you easily create various types of web pages
- MS-Word enables you enter pictures, tables, symbols, and data from other sources
- Using MS-Word you can exchange data with other software (e.g. MS-Excel, Ms-Access, etc), create columns, mail merge, drawing, etc.

## 4.1. Starting MS-Word Program:

- Click the start button
- Move mouse pointer to Programs /All Programs menu
- Point to Microsoft office
- Point to Microsoft office Word 2003 and click on it.

### 4.1.1 The Screen Element of MS-Word




**Title Bar** - Indicates application and current document in use

**Menu Bar** - General headings for accessing commands

**Standard Toolbar** - Quick access to basic features of Word

**Formatting Toolbar** - Quick access to change the look of text

**Ruler** - Indicates Margin, Tab and Indentation settings. Can also be used to change these settings.

**Scroll Bars** - Allows quick movement around document

**Status Bar** - Shows position of Insertion Point and document status

## 4.2. Creating and Closing Documents

### A. Creating a New Document

A new document can be opened at any time within *Word*:

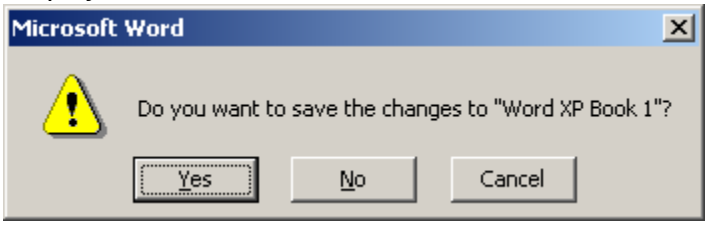
- Select File →| New.
- The New dialog box will appear on the screen.
- In the New section click on Blank Document.

### B. Closing a Document

To clear all text from the screen and begin working on a new document:

Select the **File | Close** command OR Click Close window button (x) on menu bar below the close button.

If the document has not been previously given a file name, or if it has been modified in any way, *Word* displays




- Three options are given:

| | |
|---|---|
| **Yes** | displays the **Save As** dialog box if the document has just been created or automatically saves the document if it is being modified. |
| **No** | clears the document from the active window. |
| **Cancel** | returns to the document. |

### Exiting Word

The final step of every word session is to exit word. To exit word:

- Choose File→ Exit menu from menu bar OR click the applications close button on title bar

## 4.3. Saving and Opening Word Documents

### To save the work book

1. Click on File
2. Click on Save As /Save
3. Select the location from Save In box where you want to save your file
4. Type the file name in the file name box and
5. Slick save

**To Open Existing file**

1. Open MS-Excel and click on file
2. Click on open
3. Select the folder that contains your file from look in box
4. Select your file and
5. click on Open

## 4.4. Editing Word Documents

Editing is the process of inserting new items (text, drawing, pictures), removing unwanted items and/or modifying existing ones. One of the major advantages of word processor over type writer is the case with which one can edit documents after creating them.

## 4.5. Select text and graphics

Before performing any operation (copying, moving, formatting and the likes) on a document, you must first select the text. You can select text and graphics by using the mouse or the keyboard, including items that aren't next to each other. For example, you can select a paragraph on page one and a sentence on page three.

Select text and graphics by using the mouse

- Any amount of text

  Drag over the text.
- A word

  Double-click the word.
- An entire document

  Edit→Select
- A graphic

  Click the graphic.

## 4.6. Deleting text and graphics

You can delete one character at a time or delete a large block of text by selecting it first, and the remaining text shifts over to fill the vacated space and line breaks adjust automatically.

- To delete text character by character :
  - Press **Delete** key if the insertion point is just **before** the text to be deleted
  - Press **Backspace** key if the insertion point is just **after** the text to be deleted
- To delete a block of text :
  - Select the block and press Backspace or Delete key or Choose Edit→Clear from menu bar

## 4.7. Undo and Redo

If you make a mistake whether it is issuing wrong command or deleting some text by accident, you can probably undo it with the word's **undo**  command. Word cannot undo **opening, saving, or printing.**

- On the Standard toolbar, click the arrow next to Undo.  OR Edit→Undo.
- Click the action you want to undo. If you don't see the action, scroll through the list. When you undo an action, you also undo all actions above it in the list.

**Notes**

- You can undo the very last action you took by just clicking **Undo** on the **Standard** toolbar.
- If you later decide you didn't want to undo an action, click **Redo** on the **Standard** toolbar OR **Edit→Redo**

## 4.9. Move (Cut) or copy text and graphics

- To copy text and graphics
  - Select the text and graphics
  - Click Edit menu
  - Click copy

  OR Click Copy  button on Standard toolbar
- To cut(move) text and graphics`

- Select the text and graphics
- Click Edit menu
- Click cut

OR

Click Cut button on Standard toolbar

- To paste the copied and cut text and graphics
  - Click where to paste (place) the copied/cut text.
  - Click Edit menu
  - Click Paste

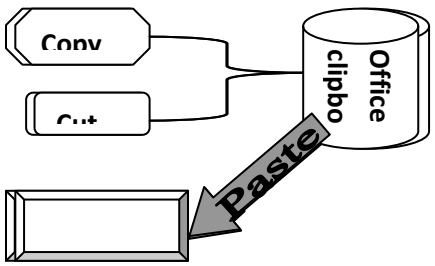
OR

Click Paste button on Standard toolbar

With cut, copy and paste you can move or copy text with in a document, between documents, between different applications. Cut, copy and paste are easy to use if you remember the following concepts:

- You must select text before issuing a cut or copy command
- You must position the insertion point at the desired location before issuing the paste command other wise, you will paste at the wrong location.
  - The **cut** command removes selected text from its original location and places it in the office clipboard.
  - The **copy** command places selected text in the office clipboard, but it leaves a copy of the text in the original location.
  - The **paste** command pastes the most recently cut or copied text into the document at the insertion point location.

**Office clipboard**: lets you collect items from one application or document and paste them into any other document. The office clip board can hold up to 24 items. It can be displayed in the task pane with the Edit → office clip board command. Once the office clipboard is displayed, you can choose an item and paste it into your document.



## 4.10. Inserting Rows and Columns

It is easy to increase a table in size by adding rows or columns to the edges, or even between existing rows or columns.

**Insert rows or columns**

- Move to where the new row/s (above the cursor) or column/s (to the left of the cursor) are to be inserted.
- Select **Table | Select Row** (or **Column**) to select the row/column. Select **Table** | **Insert** | **Rows** (or **Columns**).
- The new rows/columns are then inserted.
- To insert more than one row or column select by highlighting the required number of rows/columns before using the **Select** and **Insert** commands.
- Alternatively, position the cursor below where the new row is to be inserted and click on the **Insert Rows** button,  , from the **Standard Toolbar**. Highlight a column and the button will change to **Insert Columns**.

| **Self check2** | Written test |
|---|---|

**Directions:** Answer all the questions listed below Use the Answer sheet provided in the next page:

**Write the correct answer if it is True say True if it is False say False**

1. Which command is removes selected text from its original location and places it in the office clipboard.

   A.Cut B. copy C. paste D.all

2. Which command is places selected text in the office clipboard, but it leaves a copy of the text in the original location.

   A.Cut B.copy C. paste D. A&B

3. Which command is pastes the most recently cut or copied text into the document at the insertion point location.

   A.paste B. copy C. Cut D.Delete

# BASIC METAL WORKS

## Level-I

# Learning Guide-56

**Unit of Competence: Operate Personal Computer**

**Module Title: Operating Personal Computer**

**LG Code: IND BMW1 M16 LO4-LG-56**

**TTLM Code: IND BMW1 M16 TTLM 1019v1**

**LO4:** Operate a printer

| Instruction Sheet | Learning Guide #4 |
|---|---|

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- . Displaying data on a printed output
- . Identifying and remedying Simple printer hardware faults and printer related errors

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon**

- Data from a personal computer is displayed on printed output media based on instructions
- Simple printer hardware faults and printer related error messages are identified and remedied according to manuals

**Learning Instructions:**

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Utilize properly each information sheets
4. Accomplish the given “Self-checks.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation sheet**.**
6. Do the “LAP test” (if you are ready).

| Information Sheet-1 | Operate printer |
|---|---|

## 1. Select the default printer and check printer settings

- Printers that you can access from your computer may be directly connected to your PC or you may have access to printers over a network. A network printer could serve many computers so you may not be the only person sending jobs to a printer. In this case it is particularly useful to be able to view the progress of your print jobs as they may be sitting in a queue waiting to be printed. You can also cancel a print job after you have sent it to the printer.
- **Printer:** prints information and data from the computer on to paper. Printers are divided in to impact printers and non impact printers.

**1. Impact printers:** use some sort of physical contact with the paper to produce an image. **Eg.** dot matrix printers, daisy wheel printers, drum printers

**2. Non impact printers:** forms characters and images without making direct physical contact between printing mechanism and the paper. **E.g**. ink-jet printer, laser jet printer.

### 1.1. Check printers you can access

If printing over a network there may be more than one printer you can access. To check the printers that you have access to:

1 Click on **Start** and then select the **Control Panel**.

2 Double-click on **Printers and Faxes** to open this item.

3 In **Printers and Faxes** you see the names of the computer/s that you should be able to access.


### 1.2. Change the default printer

If you have access to more than one printer, then one of those printers will be the default printer. This means it is automatically selected when you send a job to print. In **Figure 1** you can see that the default printer has a tick next to it.

To set a printer as the default printer:

1 In the **Printers and Faxes** window right-click on the name or icon of the printer.

2 Select **Set as Default Printer** from the menu.


### 1.3. Check printing preferences for a printer

Printing preferences include options for printing such as:

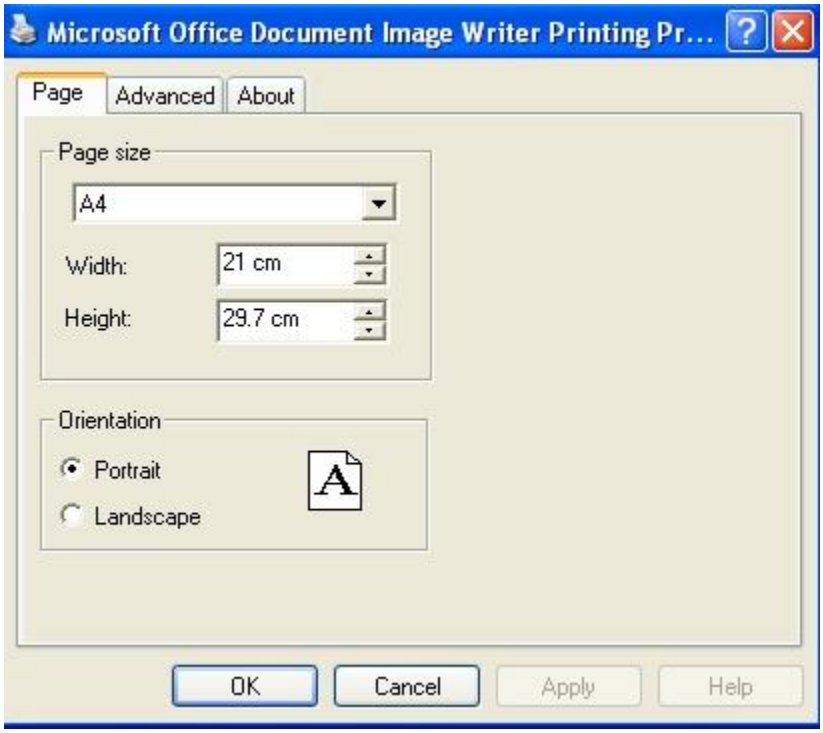
- the size of the paper you are printing to
- whether the document you are printing has a horizontal (landscape) or vertical (portrait) layout
- whether you want to print on both sides or only one side of the paper
- how many copies of the document you want to print.

You can change these options every time you send a document to the printer but you can also set **default** options so that your preferred options are the default until you change them.

To check or change the default printing preferences for your printer:

1 In the **Printers and Faxes** window right-click on the name or icon of the printer. (See **Figure 2**)

2 Select **Printing Preferences** from the menu.




To change the paper size you want to print on, click on the arrow next to the box under **Page size**. Select a different paper size from the popup menu.

4 To change the orientation of your document page click in the button next to either **Portrait** or **Landscape**.

5 Click **OK** to save any changes or **Cancel** to keep the same settings.

The preferences box for a printer will have different options depending on the model of the printer, but the basic options shown in **Figure 3** should be available for all printers.

You can select more printing preferences in a program's **Print** box at the time of printing.

### 1.4. Check printers and faxes

Now we'll look at how to check the settings for the printers that are connected to your computer.

1 Open the **Control Panel**.

2 Double-click the **Printers and Faxes** icon.

**Figure 8** below shows the printers that are available. Yours will probably list different printers.

**Figure 8:** Printers and Faxes options (in Windows XP)

3 Click on a printer to see the corresponding list of **Printer Tasks** listed to the left. To perform any of these tasks, click on the task name in the list.

4 Right-click on the printer icon to see a drop-down menu with additional options. (See **Figure 9** below. Note you may have different printer names on your computer.

### 1.5. Print documents

You can send a document to the printer from the desktop *or* from within the application program that created the document.

**Print one or more documents from the desktop**

To print one or more documents from the desktop:

1 Open a folder that contains one or more documents.

2 Click on the name of the file you want to print.

3 To print more than one file, hold down the **Control** (Ctrl) Key on your keyboard and keep clicking on files to add them to the selection.

4 When all the files are selected, right-click on one of the selected files. Select **Print** from the menu.

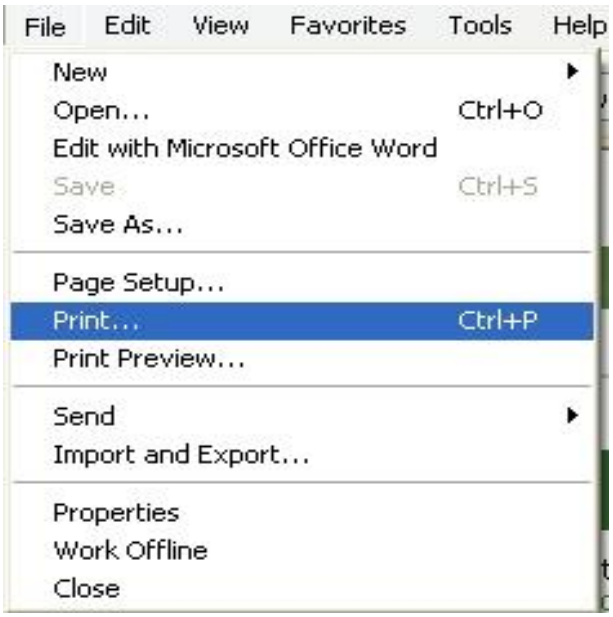
All the files you selected will be sent to the printer.

**Print a web page**

To practise printing a document from within an application program, try printing a page from a website. Your computer needs to be connected to the Internet and have a web browser such as *Internet Explorer*.

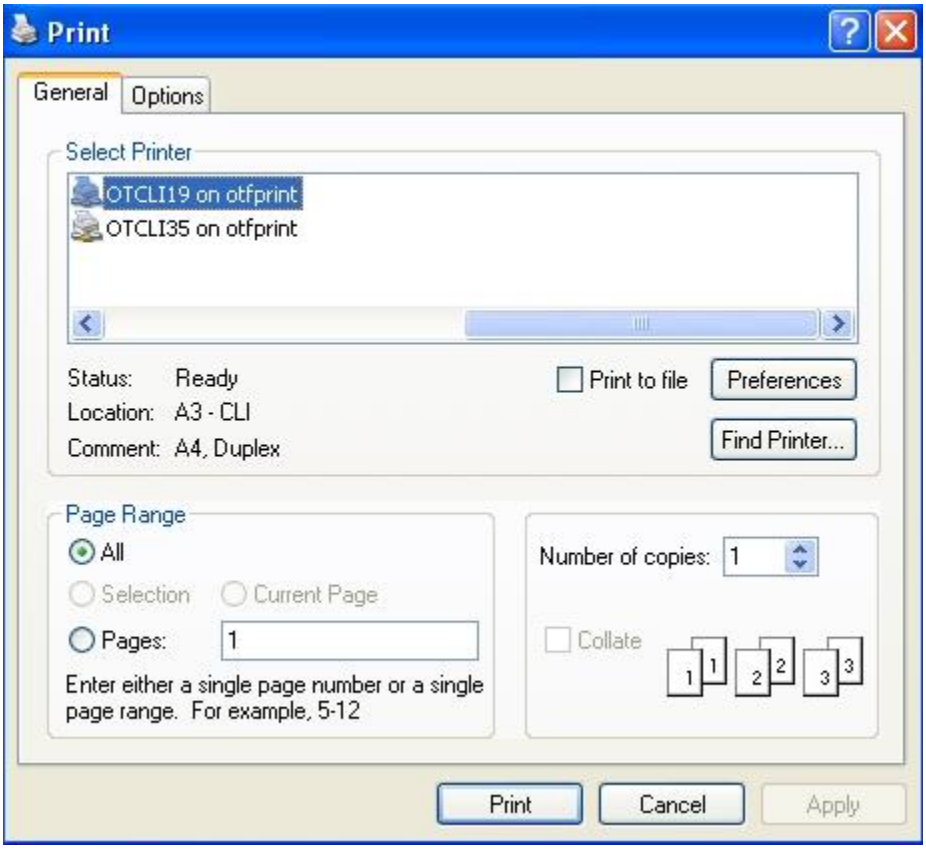
1 Double-click on the *Internet Explorer* icon on the desktop to open the program. (If your web browser is not on the desktop you may need to open the program from **Start** then the **All Programs** menu.)

When the browser program is open you will see the *Internet Explorer* menus at the top of the window.




2 Click on the **File** menu then select **Print** from this menu

3. The **Print** box allows you to change the printer and change the printing preferences for the job. (Note that any changes here do not permanently override the default settings.)




When you have made any changes to the print options click on **Print** to send the page to the printer or click on **Cancel** if you don't want to print the page.

You can print a document from within any application program in the same way. That is:

1 Open the document you want to print (Double-click on the filename if it is not already open.)

2 Click on the **File** menu then select **Print**.

3 In the **Print** box check the printing preferences for your job.

4 Click on **Print**.

### 1.6. View the progress of print jobs

If a document is taking a long time to print or the printer is busy with other people's print jobs, you can check all the jobs that have been sent to a printer and see where your job is in the queue.

From the queue you can also delete a print job if you decide you want to cancel it.

To view the progress of a print job:

1 Open **Printers and Faxes** in the **Control Panel**.

2 Double-click the printer icon to open the print monitor where you can see the jobs currently in the queue for that printer.

**Shortcuts to the print monitor**

Note: if you are not quick enough the document may start to print before you get a chance to delete it. So you may like to use a shortcut to access the print monitor quickly.

There may be a shortcut to the print monitor on the **Task Bar** of your desktop. Otherwise, you can create a shortcut to a print monitor:

1 Open **Printers and Faxes** in the **Control Panel**.

2 Click on the printer icon you want to access. Hold down the mouse button and drag the icon to the desktop.

3 A shortcut to the print monitor is now on the desktop.


You can double-click this icon anytime to check the print jobs sent to this printer and to delete the jobs you have sent.

1.Which Printing preferences options for printing from the listed blow

A. the size of the paper you are printing to

B a document you are printing has a horizontal (landscape) or (portrait) layout

C. you want to print on both sides or only one side of the paper

D. all

2 . to print one or more documents which steps are wrong ?

A. Open a folder that contains one or more documents

B. Click on the name of the file you want to print.

C. To print more than one file, hold down the Control (Ctrl) Key on your

D. None

3.to open the program _____*Internet Explorer* icon on the desktop .

A Double-click on. B Delete The Program .C. A&B D.noe

# BASIC METAL WORKS

## Level-I

# Learning Guide-57

**Unit of Competence: Operate Personal Computer**

**Module Title: Operating Personal Computer**

**LG Code: IND BMW1 M16 LO5-LG-57**

**TTLM Code: IND BMW1 M16 TTLM 1019v1**

**LO5:** Apply ergonomic principles for safe operation

| Instruction Sheet | Learning Guide #5 |
|---|---|

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

5.1 Explaining ergonomic principles

. Explaining Ergonomic requirement

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon**

- Ergonomic principles are explained in terms of user physical well-being
- Ergonomic requirements are explained in terms of environment

**Learning Instructions:**

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Utilize properly each information sheets
4. Accomplish the given “Self-checks.
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation sheet**.**
6. Do the “LAP test” (if you are ready).

| Information Sheet | ***Ergonomic*** principles in terms of user physical well-being |
|---|---|

**1. Ergonomic principles**

One branch of ergonomics deals with designing furniture that avoids causing backaches and muscle cramps. In the computer industry, ergonomics plays an important role in the design of monitors and keyboards. Ergonomic studies suggest preventive measures

you can take to protect your health as you work with computers. Another term for ergonomics is human engineering.

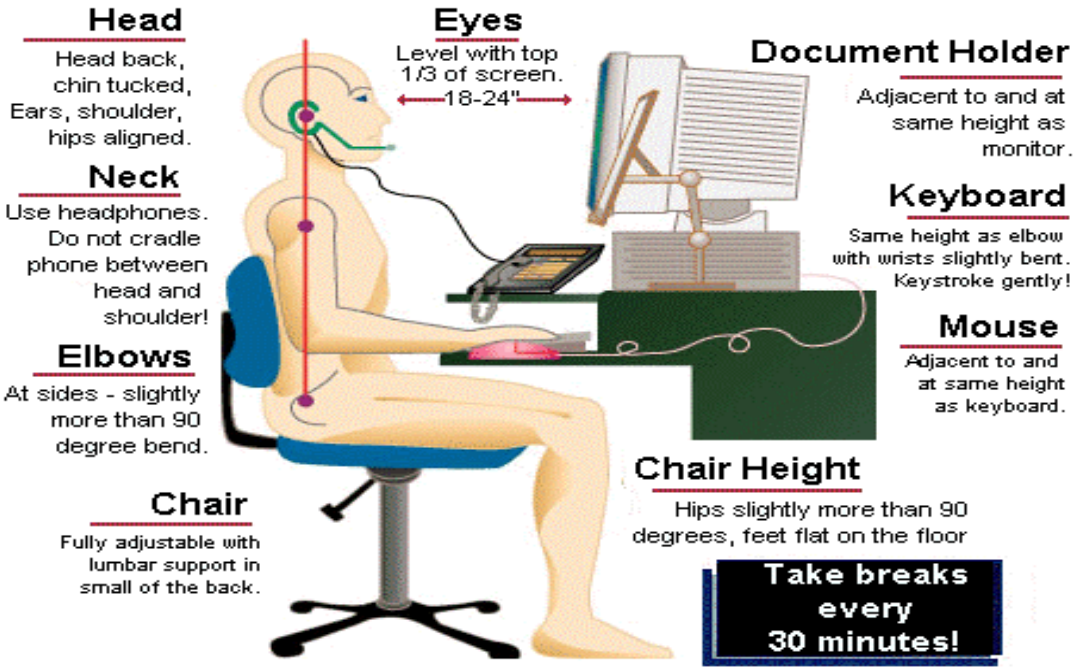
• Ergonomically designed keyboards- Split angled keyboards are specifically designed to reduce the risk of injuries.

**Ergonomically designed keyboard**

Healthy workspace- Keep the paper copy of your work close to the height as your screen. Position your monitor and light to minimize glare. The screen should be 3-4 times brighter than the room.

- Sit at arm's length from your monitor and about 15° to 30° below line of sight to minimize radiation risks.
- Flexible work environment - As far as possible work with an adjustable chair, an adjustable table, and adjustable monitor and a removable keyboard. Change
- your work position frequently. Re-read element 1 for guidelines on correct posture.
- Rest your eyes - Look away from the screen periodically and focus on a far-way object or scene. You may blink frequently and take a 15- minute break from the monitor every two hours or a smaller one every 30 minutes.
- Stretch - Use the rest break to do some simple stretches to loosen tight muscles.
- Pay attention to your body signals - If you feel uncomfortable take a break. Do not ignore the message your body is sending.

**The diagram below illustrates an ergonomic work centre**




**Directions:** Answer all the questions listed below Use the Answer sheet provided in the next page:

## PART I Write the correct answer if it is True say True if it is False say False

1.Ergonomics is the method of minimizing risk of injury illness and property damage .

2. Adjust the seat tilt so that you are comfortable where you are working on keyboard.

3.Place the keyboard in a position that allows the forearms not close to the horizontal and the wrists to be straight.

| Lap test 1 | Change display settings |
|---|---|

Name: _____ Date: _____
Time started: _____ Time finished: _____

3. **Instructions:** You are required to perform the following individually with the presence of your teacher.

**Task 1: Change display settings**

*From the Control Panel, make the following changes to your Display settings.*

- **Desktop**
  Change the desktop pattern to “Ripple”
- **Screen saver**
  Change the screen saver setting to “Marquee”.
  Select the slowest speed
- **Text style (Settings)**
  Change the Font to “Courier”.
  Set the font size to 48
  Set the font color to Aqua
- **Date and time**
  Check the date and time are set correctly.

- *Your teacher will evaluate your output either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advice you on additional work. But if satisfactory, you can proceed to the next topic.*

| Lap test 2. | Start up a computer |
|---|---|

4. **Instructions:** You are required to perform the following individually with the presence of your teacher.

- **Start up a computer**

5. Follow these steps to practice starting up a computer. You may like to tick off the steps as you do them.

| Steps | Practice 1 | Practice 2 |
|---|---|---|
| 1 Check peripheral device connections. | ☐ | ☐ |
| 2 Turn on power at the power outlet. | ☐ | ☐ |
| 3 If the monitor has a separate switch, turn it on. | ☐ | ☐ |
| 4 Switch on the printer. | ☐ | ☐ |
| 5 Check to see if there is a floppy disk in the floppy disk drive if your computer has one. Eject the disk to ensure the computer starts from the hard drive. | ☐ | ☐ |
| 6 Switch on the system unit.<br>If using a desktop PC the power switch is usually a button on the front or side of the system unit. If using a laptop the power switch is usually at the top of the keyboard. | ☐ | ☐ |
| 7 The computer will perform a start-up routine.<br>When the start-up routine has completed then the operating system will start. | ☐ | ☐ |

| Operation Sheet 3 | Views Shutdown a computer |
|---|---|

**6. Follow these steps to practice shutting down a computer. You may like to tick off the steps as you do them.**

| Steps | | Practice 1 | Practice 2 |
|---|---|---|---|
| 1 | Close all files (remember to save your latest work if necessary). | ☐ | ☐ |
| 2 | Close all software programs. | ☐ | ☐ |
| 3 | Remove floppy disks or other storage media from drives if necessary. | ☐ | ☐ |
| 4 | Click on **Start** on the taskbar. | ☐ | ☐ |
| 5 | Select **Turn Off computer** from the **Start** menu. | ☐ | ☐ |
| 6 | Check that **Turn off** is selected. | ☐ | ☐ |
| 7 | Click on **OK** to confirm. Your computer may automatically turn the power off but if not you will get a message like 'It is now safe to turn off your computer.' | ☐ | ☐ |
| 8 | Switch off the computer and the power outlet. | ☐ | ☐ |

**Name:** _____ **Date:** _____
**Time started:** _____ **Time finished:** _____

7. Follow these steps to practice shutting down a computer. You may like to tick off the steps as you do them.

| Operation Sheet 4 | Create and name directories and subdirectories |
|---|---|

Name: _____ Date: _____
Time started: _____ Time finished: _____

8. **Instructions:** You are required to perform the following individually with the presence of your teacher.

**Task 1: Create and name directories and subdirectories**

**Step 1**

Create the following three directories in a folder called 'My Documents':

1. Customers
2. Staff
3. Warehouse

**Step 2**

Create the following four sub-directories within the Customers directory:

1. CD Basement
2. Gig Shop
3. MP3 to go
4. Music Beat

**Step 3**

Create the following three sub-directories within the Staff directory:

1. Overtime
2. Rosters
3. Timesheets

**Step 4**

Create one sub-directory within the Warehouse directory:

1. Utilities

- *Your teacher will evaluate your output either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advice you on additional work. But if satisfactory, you can proceed to the next topic.*

The Federal TVET Agency (FTA) wishes to extend thanks and appreciation to the representatives of TVET teachers; facilitators form the regional TVET Bureaus and Agencies, Federal TVET Agencies who donated their time and expertise to the development of this Model Learning Guide/TTLM/ for the TVET Program of ***Basic Metal Works Level-1***

**The trainers who developed this TTLM**

| No | Name of trainer | Qualification | Region | E-mail |
|---|---|---|---|---|
| 1 | TEFERA DEMISSIE | A-Level | SNNPR | teferad123@gmail.com |
| 2 | MULUKEN YENET | B-Level | AMHARA | mulukeynet@gmail.com |
| 3 | KABTAMU SHEWANGIZAW | A-Level | OROMIA | Kabtamushewaangizaw@gmail.com |
| 4 | YOHANNIS HAILE | B-Level | B.G.R | |
| 5 | AHMED HUSSEN | B-Level | SOMALI | abdirashidhusen@hotmail.com |
| 6 | AYSHA SHIBESHI | B-Level | AFAR | yasinmohammed459@gmail.com |
| 7 | TEKALIGN BEKELE | B-Level | SNNPR | |
| 8 | BOKA TEREFE | A-Level | OROMIA | bokaterefe@yahoo.com |

***This model TTLM was developed on September 04/01/2012 E.C at ADAMA***