

INTRODUCTION TO COMPUTERS

1. Terminologies
2. Types of computers
3. Parts of a computer
4. Computer Hardware: Input and output devices
5. Basic operations of a computer

Learning objectives

After you have studied this chapter, you should be able to:

1. Explain the meaning of the terms :hardware, software, Information, communication and others
2. Describe the main parts of a computer
3. State the three basic operations in a computer system
4. Identify a computer as a general purpose machine that operates under different sets of instructions for various uses
5. Relate computer parts to the basic operations Differentiate between data and information.
6. State the main components of a computer system

1.1 Terminologies

Question 1

EXPLAIN THE FOLLOWING TERMS

- a) Computer
- b) Hardware
- c) Software
- d) Data
- e) Information

Answers

a) COMPUTER :

- ✓ This is an electronic device that is able to input, process data, store data and output information.
- ✓ A computer is an electronic device that manipulates information, or data. It has the ability to store, retrieve and process data.

b) HARDWARE

- ✓ Computer Hardware is the physical parts or components of a computer.
- ✓ These are computer components that one can see, touch and feel.
- ✓ Hardware: The term hardware refers to the physical components of your computer such as mouse, keyboard, monitor, CPU(system case), RAM

c) SOFTWARE

- ✓ Computer Software is a part of a computer system that consists of data or computer instructions that consist of data or computer instructions.
- ✓ Computer software is a collection of instructions that enable the user to interact with the computer, its hardware, or perform tasks.

d) DATA

Unprocessed information which is not meaningful

e) INFORMATION

Is processed data which has become meaningful and useful to the user.



- i) **Peripheral Devices:** A peripheral device is a piece of equipment that can be connected to a computer for the purpose of data input, output or both. Peripheral devices are used by human beings to communicate with the Central Processing Unit (CPU) of the computer. Examples are keyboard, joystick, external CD, Monitor, printer, internet modem, Scanner, speakers, mouse, Handheld etc.
- ii) **P.D.A (Personal Digital Assistant):** It is a handheld personal computer like a mobile handheld device that provides computing and information storage and retrieval capabilities for personal or business use, calendars etc.
- iii) **BIT** is binary digits that are 0 or 1. The smallest unit of storage.
- iv) **BYTE:** is the unit of storage capacity which is equivalent to 8 bits
- v) **KB (Kilobytes):** which is equivalent to 1000 bits
- vi) **MB (Megabytes):** It is a measurement of storage capacity equivalent to One million bits.
- vii) **GB Gigabytes:** It a measurement of storage capacity of the unit bit equivalent to 1000, 000, 000 bits
- viii) **MHz (Megahertz):** This is a measurement of frequency equivalent to one million per second.
- ix) **GHz (Gigahertz)** is a measurement of frequency equivalent to one thousand million per cycle..

Question**(a) List the most common types of computers:**

- Desktop computer/personal computer (PC)
- Laptop computer (portable computer)
- Personal Digital Assistant (PDA)
- Mainframe computer

(b) State the characteristics of the above computers**Personal computer (PC)**

- Fast , less expensive and getting cheaper by the day
- Typical users: Home user, Doctors , Education

Laptop computer

- Laptop as PC in capacity
- It is portable computer
- Expensive than PC
- Typical Users: Business users
-

Personal digital assistant (PDA)

- Much smaller storage capacity compared to a PC
- Small enough to held in the palm of hand
- Typical users: Business user
- Example: Mobile phone.

Mainframe computer

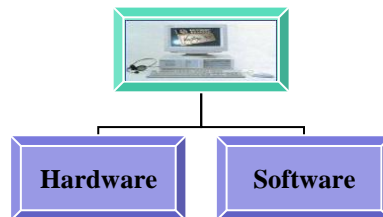
- Very powerful computer and it often connected to many individual PCs over network
- Faster than PCs, used for processing large amounts of data as salaries
- Very expensive
- Typical Users: Banks and Building societies, Insurance

Questions

- (a) List the main parts of a computer
- (b) Define the main parts of a computer
- (c) List down the most commonly used computer hardware
- (d) State the two types of computer software.

Answers

- (a) (i) Hardware
- (ii) Software



- (b) **Hardware:** The term hardware refers to the physical components of your computer such as mouse, keyboard, monitor, CPU (system case), RAM

Software: Computer software is simply the instructions given to the hardware to carry out the actual work. In other words, software is a general term for all computer programs.

- (c) The most commonly used computer hardware are:

- ✓ Keyboard
- ✓ Mouse
- ✓ Central Processing Unit
- ✓ Monitor
- ✓ Sound card,
- ✓ Mother board,
- ✓ Printer,
- ✓ Scanner,
- ✓ Uninterrupted Power Supply.
- ✓ Microphone
- ✓ Digital camera,
- ✓ Speakers

(d) State and explain the two types of software:

The two main types of software are **systems software** and the **applications software**.

(e) What is systems software?

This is the type of software used by the computer to accomplish tasks of general nature. These tasks are often contrasted from those performed by the person using the computer. Therefore, systems software is the software which operates the hardware system of the computer. It is the one which really makes a computer to be an automatic machine. It is also called the **operating system**.

(f) What are the Functions of systems software?

- Controlling the internal function of the computer
- Controlling devices connected to the **CPU**
- Acting as a platform for applications software.

(g) Give examples of operating system software:

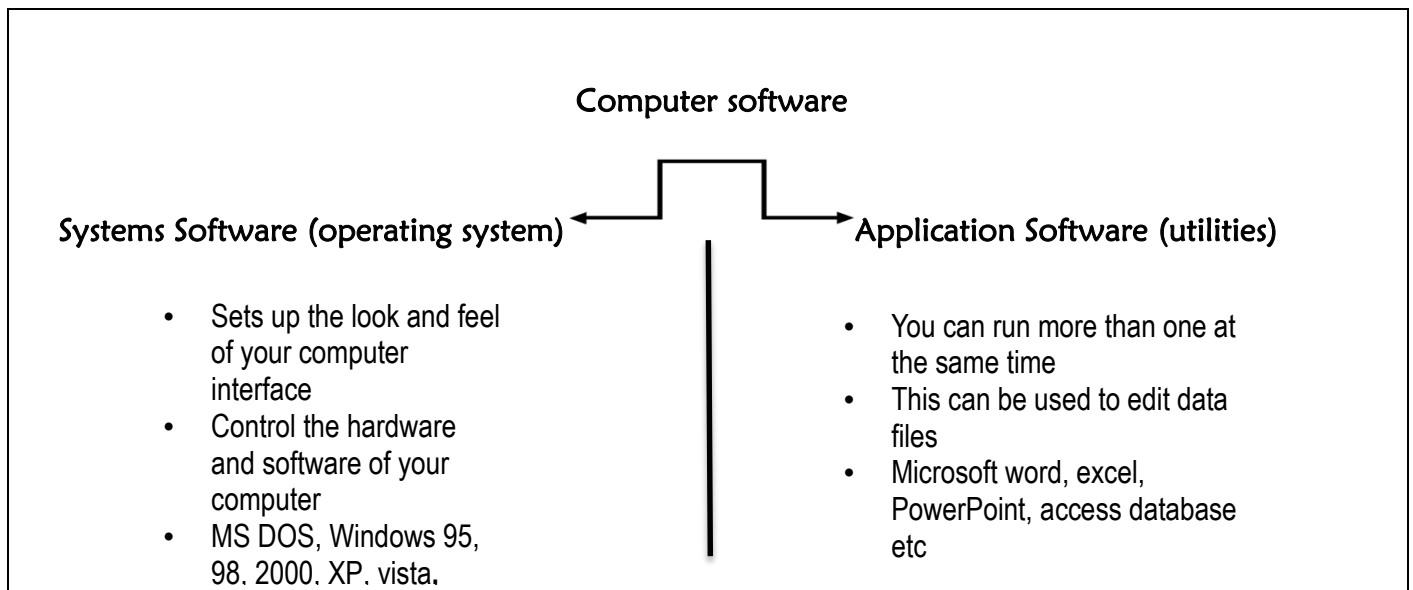
MS DOS, Windows 95, 98, 2000, XP, vista, windows 7, windows 8, LINUX, UNIX, Ubuntu, Macintosh etc.

(h) What is application software?

This is the software in a computer used by people to accomplish specific tasks. Whereas systems software is directed towards the computer hardware in general, applications software is directed towards the user.

(i) Give examples of application software.

Word processors (Ms word), Open Office Writer, Spreadsheet (Ms Excel), Open Office Presentation, database, Publisher, games etc



(j) Explain the use of the most commonly used application software (utilities)



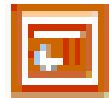
Word processing [creating letters – faxes – Memos — producing catalogue containing graphics – business document]



Excel Spreadsheet [Charts – financial projection –working with budgets]



Access database [sort large amount of information – creating list of contact details]



PowerPoint presentation [create overhead projections slides]



- **Web browsing**[View web pages]

1.4.1 Computer Hardware

Questions

(a) State the components of a computer

Answer

Central Processing Unit (CPU) is an electronic circuitry within a computer that carries out the instructions of a computer program by performing the basic arithmetic, logical, control of input/output devices.

Input devices: - is any hardware device that sends data to a computer, allowing you to interact with and control the computer. Examples are the Keyboard and the mouse.

Storage devices: - These are computer equipment on which information can be stored. E.g. Hard drive, Flash drive, Compact disc etc.

Output devices: - are devices used to send data from a computer to another device or user.

A Computer system

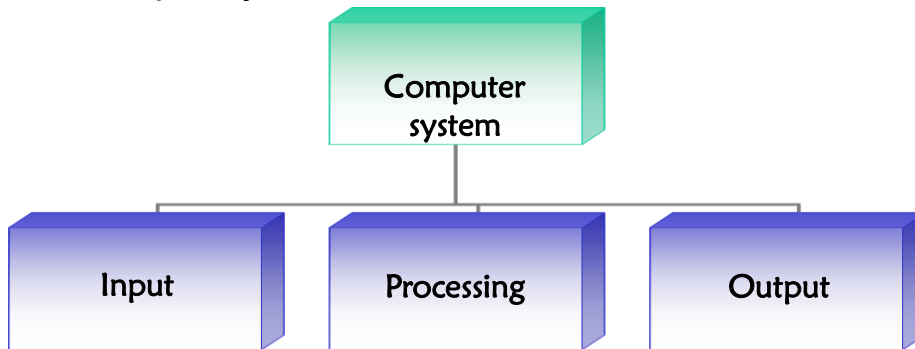
Questions

- (a) List the three basic operations of a computer system

Answer

- ✓ Input
- ✓ Processing
- ✓ Output

- (b) Draw a computer system



- (c) Relate the components of a computer (computer parts) to basic operations

Answer

Input:- Information and programs are entered into the computer system through input devices such as key boards, disks or through networking with other computers.

Processing:- The CPU sometimes called the control unit directs the operation of the input and output devices.

Output:- these devices display information on the screen (monitor) or the printers and sends information to other computers.

Input devices

Questions

- (a) List the most commonly used input devices

Keyboard



digital camera



Web cam



Mouse



Joy stick



Scanner



Microphone



- (b) Explain the use of the mouse and keyboard input devices.

Answer

Keyboard: A keyboard is an input device that contains keys [buttons] that the user presses to enter data into a computer keyboard have 101 to 105 keys.

Mouse: A mouse is a pointing device that fits under the palm of one's hand. Pointing devices minimize the amount of typing a user has to do.

Processing (Central Processing Unit)

Questions

- (a) Which part of the computer is used to process information?

Answer

The central processing unit (CPU)

- (b) What are the basic functions of the CPU?

Answer

- ✓ Processing data
- ✓ It determines how fast your computer will run.
- ✓ It is responsible for performing operations on input to produce output in a systematic manner.
- ✓ The processor is responsible for overall control of all the components of the computer.

- (c) State the components of the CPU?

Answer

- ✓ Control unit
- ✓ Arithmetic logic unit (ALU)
- ✓ On board cache.

- (d) State the functions of the control unit (CU)

Answer

- ✓ **Stimulates** and **coordinates** all the activities of a computer.
- ✓ It fetches data from the **ram** for processing by the **ALU**.
- ✓ By controlling the running of the program instructions, the control unit of CPU **maintains order** and **directs** the operation of the entire system.
- ✓ It acts a central nervous system for the data manipulating components.
- ✓ It also interprets the individual instructions that comprise the computer program. These instructions are in a language called machine code (pattern of zeros and ones).

- (e) What are the functions of the ALU?

Answers

- ✓ This is the component of a CPU that handles all the computational jobs of a computer.
- ✓ The ALU acts a calculator, performing arithmetic operations such as addition, subtraction, multiplication, division and logical comparisons such as deciding whether two numbers are equal.

(f) What values are used to measure the speed of the CPU?

Answer

The speed of the CPU is measured in either Gigahertz (GHz) or Megahertz (MHz) . For example

- 1 Megahertz is 1000,000 hertz, which means the CPU performs 1 million actions per second.
- 1 Gigabyte is 1000,000,000 which means the CPU performs 1 billion actions per second.
- Today modern CPU run at the speed of 2.8 GHz meaning it can perform 2,800,000,000 actions per second.

(g) Define unit of processing

Answer

These are measurements of rates of frequency

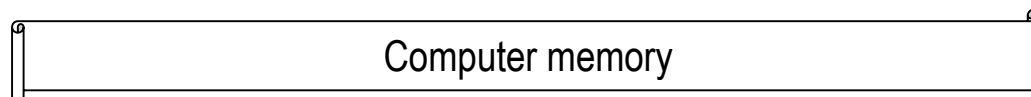
(h) Write down the steps to follow when checking the CPU speed using Windows:

1. Click on the Start menu
2. Go to option Computer
3. After selection the option Computer you move or take your cursor on the blank area of your computer.
4. Then right click on the blank area of your window and select the last option which is properties.
5. You will be able to check the CPU speed of your computer.

(i) What are the factors that determine computer performance?

Answer

- ✓ Free space on Hard disk
- ✓ Capacity of RAM
- ✓ Speed of CPU
- ✓ Quality of equipment's is installed on PC
- ✓ Number of application running



Questions

(a) What is primary memory of a computer?

Answer

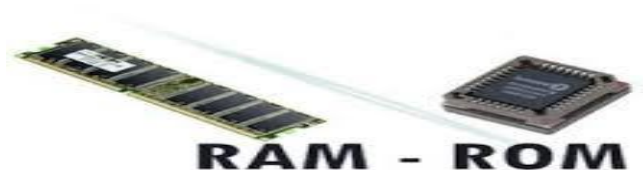
Primary Memory is computer memory that a processor or computer accesses first or directly. It allows the processor to access running execution application and services that are temporarily stored in a specific memory location. It is also known as the Main Memory.

It is memory that is intimately associated with the actual working of the computer. This includes memory that holds start-up routines as well the current program and data it is working with.

(b) Explain the various types of primary memory:

Answer

- i) **Random Access Memory (R.A.M):** This is a form of computer storage which stores data and machine code currently being used. RAM memory is volatile; this means that the memory loses data when power is switched off. Because of this, it is advisable to save your work on the disc say every 10-20 minutes when you are typing a large document on your computer.
- ii) **Read Only Memory (ROM):** This is a built in computer memory containing data that normally can only be read, not written to or changed in any way. It is permanent memory and non- volatile. This type of memory does not lose data when power is switched off.



(Random access memory) RAM	(Read only memory) ROM
<ul style="list-style-type: none">✓ Main memory/ Temporary/ volatile✓ The operating system is loaded into the Ram when the PC is switched on✓ The contents of Ram disappear when the PC is switched off✓ The contents of Ram change constantly as the PC is used	<ul style="list-style-type: none">✓ Secondary memory / permanent or fixed✓ It is a chip held on motherboard it contains software that is required to make your computer work with operating system✓ The contents of Rom are fixed during the manufacture of the PC✓ You cannot write to this type of memory

(iii) On-board-cache memory

This is a very high speed memory that the control unit can access very quickly and use for intermediate storage. Further, data and instructions can be loaded into the cache before they are actually needed. When they are needed, the transfer is much faster than it would have been if RAM had been used.

It is referred to as, **memory in waiting** e.g. when you press print, it will ask for how

Storage

Questions

(a) What is storage?

Answer

Storage is a process/method of keep data, instructions and information for future use/permanently.

(b) What are storage devices?

Answer

This is Computer equipment on which information can be stored. E.g. Hard drive, Flash drive, Compact disc etc

These are pieces of hardware that holds the storage media, such as Floppy Disk Drive, Hard Drives, CDROM, DVD ROM, and Tape Drive

(c) State the two types of storage devices:

i. **Internal storage or primary storage**

These are storage devices that are found inside the computer case and are referred to as Internal Hard Drive.

ii. **External storage devices or secondary storage**

These are devices that temporarily store information for transporting computer to computer and are not permanently fixed inside a computer. Examples such as Memory Card Reader, USB Flash memory, External Optical Drives, Zip Drive.

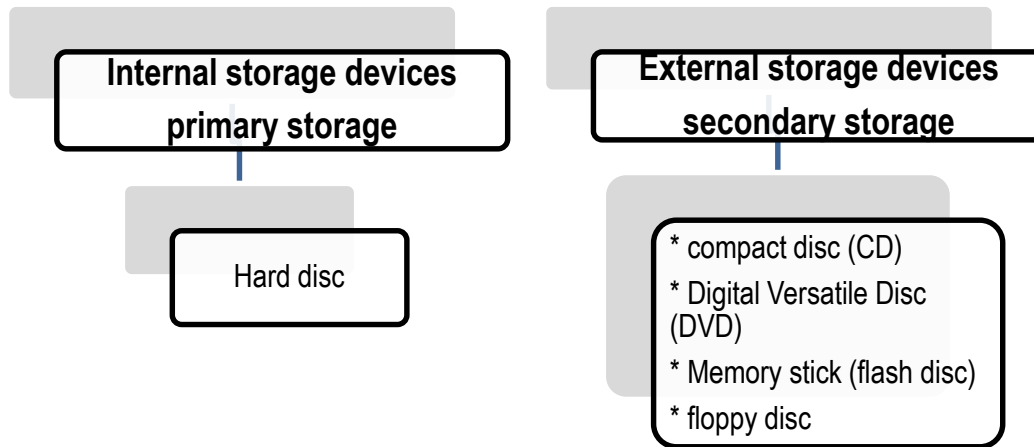
(d) Give two reasons why primary storage is important:

Answer

- They allow the data and applications to be loaded very rapidly into memory and ready for use.
- They store operating systems and programs.

(e) Illustrate the most commonly used internal and external storage devices:

Answer



(f) Describe the memory capacity of the most commonly used storage devices.

Answer

Hard disc

The main memory of the computer. It is the fastest at accessing data. In most computers it has storage capacity of **40---350Gb**



Compact Disc

Compact disc has storage capacity of 650---700Mb



Floppy disc

Has storage capacity of 1.44Mb and it is slowest at accessing data



Flash Disc

Has storage capacity which can range from 2Gb to 50Gb

(g) What is a unit of storage

Answer

The measurements of storage capacity.

(h) Convert the following units of storage to Megabytes

(1) 4.7 GB = x

$$4.7 \text{ GB} = 4700 \text{ MB}$$

17GB

$$1 \text{ GB} = 1000 \text{ MB}$$

$$17 \text{ GB} = X$$

$$\underline{17 \text{ GB} = 17000 \text{ MB}}$$

(2) 700 KB TO MB

$$700 \text{ KB} = X$$

$$1000 \text{ KB} = 1 \text{ MB}$$

$$X = 700 \text{ MB} / 1000$$

$$\underline{X = 0.7 \text{ MB}}$$

(3) 400KB TO GB

$$400 \text{ KB} = X$$

$$1000 \text{ KB} = 1 \text{ MB}$$

$$X = 400 / 1000$$

$$X = 4 / 10$$

$$\underline{X = 0.4 \text{ MB}}$$

Now convert to GB

$$0.4 \text{ MB} = X$$

$$1000 \text{ MB} = 1 \text{ GB}$$

$$0.4 / 1000$$

$$\underline{0.0004 \text{ GB}}$$

(i) Complete the following table showing the units of storage

Capacity measurement	Unit of storage
BIT	
BYTE	
KILOBYTE	
MEGABYTE	
GIGABYTE	
TETRABYTE	

Answer

Capacity measurement	Unit of storage
BIT	0 or 1
BYTE	8 BITS
KILOBYTE	1000 BITS
MEGABYTE	1000 KB
GIGABYTE	1000 MB
TERABYTE	1000 GB

Output devices

Questions

(a) Define the term “output devices”

Answer

Output devices allow you to see, hear in some form the information that is stored on a computer.

(b) Give examples of output devices:

Video Display Unit (VDU) or monitor



Printers



Speakers



Plotter (used to print Maps and more complex drawings)



(c) Illustrate the devices which are both input and output devices



Digital camera



Tablet (personal digital assistant PDA)



Touch screen

(d) Describe the functions of a monitor:

Answer

Monitor: A monitor is a device that displays texts, graphics and video visually .e.g

L C D — Liquid Crystal Display

L E D - Light Emitting Diode

V D U - Visual Display Unit

(e) What two main factors determine the quality of a monitor?

Answer

RESOLUTION: Refers to the numbers of horizontal and vertical pixels in a display device.

PIXELS: This is the smallest unit of a digital image. The higher the number of pixels, the higher the resolution, and the greater the sharpness and clarity of the images.

(f) Define a printer

Answer

A printer produces hard copy [physical copy] of text and graphics.

(g) How is the quality of a printer measured?

Answer

The resolution [quality] of a printer is measured in **dots per inch [DPI]**. The higher the DPI, the higher the print quality.

(h) How is the speed of a printer measured?

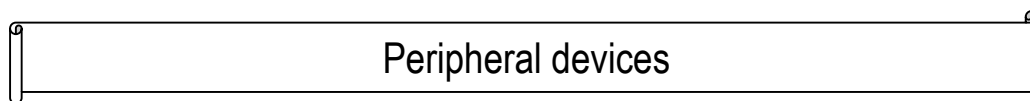
Answer

The speed of a printer is measured in **pages per minute [PPM]**.

(i) Give three (3) Examples of types of printers:

Answer

- ✓ LaserJet printers
- ✓ Inkjet printers
- ✓ Office jet printers



Question

(a) What are peripheral devices

Answers

All hardware devices which are connected to the computer systems case ranging from cables, monitors, keyboard, printers, speakers etc.

Peripheral hardware is the name for the computer components that are not found within the computer case. This includes input devices such as a mouse, microphone and keyboard, which carry information from the computer user to the processor, and output devices such as a monitor, printer and speakers, which display or transmit information from the computer back to the user.

Communication

Questions

(a) Define communication

Answer

Communication is the transmission of data, instructions and information across a distance from a sender to a receiver.

(b) What is a communication device?

A communication device is used to send {transmit} and receive data, instructions and information between one or more computers or mobile devices. A modem is an example of a communication device.

(c) State the methods of communication:

Answer

Communication takes place over telephone lines, cellular radio networks, satellites and other transmission media. Satellite and cellular radio networks, are wireless communications.

BASIC OPERATIONS OF COMPUTERS

2.1 Health and Safety

Question

(a) What are the common health problems associated with the use of computers?

Answers

Most common health problems associated with computer use:

- ✓ injuries related to working with keyboard and mouse → ***sprains (dislocation) / RSI (Repetitive Strain Injury)***
- ✓ flickering screen or improper distance from a monitor → ***vision impairment***
- ✓ improper seating and inappropriate use of chairs → ***problems with the spine (due to position of a computer, desk and chair, which affect posture)***
- ✓ improper use of artificial light, light amount, light direction etc. also has a significant impact on health, as it may also lead to vision impairment

(b) Briefly describe ways to prevent health problems associated with computer use.

Answer

- ✓ monitor must be kept away from the eyes approx. 50cm
- ✓ keyboard must be placed in front-wrists are in a straight position
- ✓ mouse must be located next to the keyboard-the forearm parallel with a desk
- ✓ chair should be adjustable (seat and backrest), with armrests
- ✓ take regular breaks from work, get up and walk, often change position (5- 10 minutes every hour)
- ✓ exercise regularly
- ✓ relax eyes by looking into the distance(every 20min),
- ✓ rest arms (every 15min)

(c) What are the safety issues associated with computer use.

Answers

- ✓ Long and hanging cables look untidy and can cause accidents
- ✓ Overloading sockets and adaptors can cause electric shorts which in turn can start fires

- ✓ Heat and humidity are capable of damaging computers and other electronic devices
- ✓ Dust is another factor capable of slowing down or even damaging a computer

2.2 Care for computer systems

(a) Explain safety issues associated with the use of computers

- ✓ Place your computer in a room that is both cool and dry. Heat and humidity are hard on electronics.
- ✓ Make sure that there is ample air space around the PC to enable it to have a free airflow, but avoid draft and dusty areas.
- ✓ Keep the PC's cords and cables together and tucked out of the way to protect the cords, the PC, and you.
- ✓ Avoid powering the system on and off frequently. In addition to cycling between heating and cooling, it puts stress on its electronics.
- ✓ Enable any energy saving features on the PC, such as suspending the hard disk and monitor to save electricity and extend the life of these components.
- ✓ Connect the PC to the AC power source through a surge suppressor or an uninterruptible power supply (UPS) to protect the PC against the problems associated with electrical spikes, blackouts, and blowouts.
- ✓ Always wear an antistatic wrist or ankle strap when working inside the system unit (case) to avoid possible damage from electrostatic discharge (ESD).
- ✓ Before beginning work on your PC or its peripherals, close any open applications, shut down the PC, and unplug it from the wall.
- ✓ Avoid placing the PC, especially the monitor and speakers, near strongly magnetized objects to avoid distortion or performance problems.
- ✓ Never connect or disconnect a serial, parallel, or video device while the system is running.
- ✓ Always use the Shut Down option to close the Windows operating system before powering down the PC.

(b) Demonstrate the need to take care of computers and various storage media to prevent data loss

Answer

- ✓ Place your PC in a room that is both cool and dry. Heat and humidity are hard on electronics.
- ✓ Make sure that there is ample air space around the PC to enable it to have a free airflow, but avoid draft and dusty areas.

- ✓ Keep the PC's cords and cables together and tucked out of the way to protect the cords, the PC, and you.
- ✓ Avoid powering the system on and off frequently. In addition to cycling between heating and cooling, it puts stress on its electronics.
- ✓ Enable any energy saving features on the PC, such as suspending the hard disk and monitor to save electricity and extend the life of these components.
- ✓ Connect the PC to the AC power source through a surge suppressor or an **uninterruptible power supply (UPS)** to protect the PC against the problems associated with electrical spikes, blackouts, and brownouts.
- ✓ Always wear an antistatic wrist or ankle strap when working inside the system unit (case) to avoid possible damage from **electrostatic discharge (ESD)**.
- ✓ Before beginning work on your PC or its peripherals, close any open applications, shut down the PC, and unplug it from the wall.
- ✓ Avoid placing the PC, especially the monitor and speakers, near strongly magnetized objects to avoid distortion or performance problems.
- ✓ Never connect or disconnect a serial, parallel, or video device while the system is running.
- ✓ Always use the Shut Down option to close the Windows operating system before powering down the PC.
- ✓ Always use the correct methods of ejecting external storage devices.
- ✓ Create backups for all your data and information and store it separate from the device you are using

2.3 Computers and peripherals

Questions

- (a) Explain the correct way of powering down a computer and other technologies

Answer

To shut down a computer

- ✓ Click on the start button
- ✓ Click on the shutdown button
- ✓ Or press a combination of Alt + F4 to bring up a shutdown pop-up display and then select shut down.
- ✓ Make sure that you close all programs and application you were running before you can go ahead and shut down a computer
- ✓ For other technologies and peripheral devices use the power buttons provided to switch on or off the device.

(b) Identify how to shut down an unresponsive computer

Answer

- ✓ To shut down a non-responsive computer
- ✓ Press a combination of Ctrl + Alt + Del (Delete) to bring up the Task manager
- ✓ Under Task manager click on the program which is not responding the click “End Task”. Your computer should be able to respond to normal shut down procedure you are going to take after this.

(c) Identify the types of user interfaces

Answer

- ✓ **A command line interface** displays a prompt; the user types a command on the keyboard and executes the command. The computer executes the command providing texture output
- ✓ **Graphic User interface** (GUI) uses windows, icon menus and pointers (WIMP) which can be manipulated by a mouse (and often to an extent by a keyboard as well)

Computers in everyday life

1. Household entertainment and recreation appliances
2. Office equipment
3. Industrial and commercial appliances
4. Computer based learning

Learning objectives

After you have studied this chapter, you should be able to:

- ✓ Identify and demonstrate the use of household appliances that are controlled by microprocessors
- ✓ State the common uses of office equipment
- ✓ Exhibit knowledge of using computers in industry
- ✓ Identify the role of computers in aiding learning
- ✓ Identify social and economic effects of computers

3.1 Household entertainment and recreation appliances

Questions

- (a) Define the term **embedded microprocessors**

Answer

Embedded microprocessors are small CPU's that can be found in devices that function like PC'S. Microprocessors are small CPU's built into a single chip

- (b) List down household appliances that use microprocessors

- STOVE
- MICROWAVE
- REMOTE CONTROL
- T.V
- DECORDER
- GEYSER

(c) What are the advantages and disadvantages of household appliances embedded with microprocessors?

Answers

ADVANTAGES

- Cooking can be done easily.
- It has an advantage of the disabled.
- Most people can use the labour saving machines so as to save money to pay the house workers. Labour saving machines save money and time at convenient moments.

DISADVANTAGES

- Promotes laziness
- Labour devices are expensive
- Cost a lot of power when left on stand by
- Most people find it difficult to use the new devices
- High maintenance costs

3.2 Office equipment controlled by microprocessors

Questions

(a) List down office equipment machines controlled by embedded microprocessors and their function.

Answer

a) **Printer**



A printer is an output device that is used to produce printed hard copies of information on paper.

b) Scanner



The scanner is a device used to scan images on paper that can be printed again.

c) Computer (PC)

A computer is an electronic device that is used to input, process, store and output information.



d) Fax machine



It is a machine that is used to send documents using telephone lines

Questions**(a) Define the term “e – commerce”****Answer**

- E-commerce can be defined as buying and selling of goods and services using the internet.
- E-commerce can be defined as a transaction of buying and selling online.

(b) List down the advantages and disadvantages of e-commerce**Answer****ADVANTAGES**

- Faster buying and selling procedure as well as easy to find products.
- More reliable to customers, there is no theoretical geographic limitation.
- Provides buyers with a wide range of choices because buyers can consider many different products and services from a wider variety of sellers.
- Cheaper as there are no travelling costs.
- Available 24 hours a day.
- Can shop when it is convenient.

DISADVANTAGES

- Delay and potential uncertainty if the items will arrive before it is needed as the product must be shipped to the customer.
- If there is a problem with the item when it is delivered, most customers do not feel to go through the process of returning items through the mail
- No ability to personally inspect the product before purchase.
- Risk of fraud e.g. using stolen credit cards.

(c) State the common use of computers in supermarkets.**Answers**

- Supermarket use computers to analyze sales so that managers can create better marketing plans.

- Through computer systems cashiers in supermarkets are able to accept payment methods in addition to cash such as credit cards, smart cards, mobile phones instead of handling a large sum of money.
- Saves time through Computer software such as spreadsheets, Access, Word and scanner system records good sold and received automatically.
- To help boost sales and profits, supermarkets use computers to gather customer's data to create customer's promotions.
- To secure and safe guard the goods in the supermarket through the use of electromagnetic bars which are computerized.

(d) What is a bar code reader?

A bar code reader is an electronic device that can read and output printed bar codes to a computer.



(e) What are bar codes?

Answer

A bar codes are patterns of thick and thin lines and spaces, representing a numerical code, which can be read by a bar code reader such as an optical scanner or wand



(f) List the fundamental information found on a bar code.

- Name of the product / item

- Product / item code
- Manufacturer code
- Price of the item

(g) Identify the significance of bar codes in a supermarket

- **Saves money:** for a large supermarket with a lot of item to sell, it will require a large labour force just for sticking the label on the items. Such labour force will require a large salary. With the introduction of barcode, only very few workers will be needed from this large force.
- **Reduction of human errors:** The bar code reader will read the item and the price of the item. This will increase accuracy in data capture.
- **Speedy service:** it is faster customers will not spend a lot of time in the queues.
- **Easy access to information:** The supermarket will be in a state of knowing what they have in stock at all times.
- **Detached labels:** Unlike bar codes, labels get detached from items so as to force the operator to leave customers in the queue to check for the price. With the introduction of bar codes, the service is quick and customers are satisfied.

(h) What do the acronyms PIN stand for?

Answer

Personal Identification Number

(i) BRIEFLY DESCRIBE THE FOLLOWING TERMS

- Smartcard
- Magnetic card
- PIN

a) Smart Card : is a plastic card with a built-in microprocessor used typically to perform financial transaction.



b) Magnetic cards

- Magnetic Cards is a strip affixed to a card to hold information.
- A card capable of storing data by modifying the magnetism of tiny iron-based magnetic particle on a band of magnetic material on the card.

c) Personal Identification Number:

- This is a secret number/ code only known by the card owner.
- This is a 4-digit number combination known only to you or the owner of an account and allow him/her to access his/her account information using an Automated Telephone Banking system.
- A numerical code used in many electronic financial transactions.

The screenshot shows a web interface with a header bar containing 'My Services' and 'Student Home'. Below the header is a 'Back to My Services' button. The main section is titled 'Change PIN'. It contains three input fields: 'New PIN', 'New PIN Again', and 'Current Password', each followed by a masked input field (dots). A 'Continue' button is at the bottom. A red box highlights the 'Current Password' field with the text 'You may enter your current BC password or PIN.' and a red arrow points to the field.

(j) WHY SHOULD A PIN BE A SECRET CODE?

Answer

It is a measure to safeguard any financial transaction.

(k) DESCRIBE THE BENEFITS OF THE TREND TOWARDS CASHLESS ELECTRONIC TRANSACTION?

- Cashless transaction can be done anywhere as long as there is internet connectivity.
- When buying a lot of items, there is no need to carry a lot of cash in your bag.
- You can make transaction from home provided there is access to internet for example paying bills and purchasing power units (ZESCO)
- Cashless electronic transaction is easy, time saving and convenient.
- Cheaper as no travelling expenses are required.

Questions**(a) WHAT IS COMPUTER BASED LEARNING?**

- Computer based learning is the term used for any kind of learning with the help of computers.
- Computer based learning is learning using the computer for instructional purpose whereas the computer hardware and software as well as peripherals and input devices are key components of the educational environment.

**(b) LIST DOWN ADVANTAGES AND DISADVANTAGES OF COMPUTER BASED LEARNING.****ADVANTAGES**

- It reduces travel time and travel costs off-campus students.
- Students may have the option to select learning material that meet their level of knowledge and interest.
- Students have access anywhere to the computer and internet connection.
- Self- paced learning modules allow students to work at nay pace.
- Class work can be scheduled around work and family
- It helps students develop knowledge of the internet which will help learners to have self-knowledge and self-confidence.

DISADVANTAGES

- Learners with low motivation or bad study habits may fail.

- Without routine structures of a traditional class, students may get confused about course activities and deadline.
- Students may feel isolated from the instructor and classmates.
- Slow internet connections may make accessing course material frustrating.

3.5

Data integrity

(a) WHAT IS DATA INTEGRITY?

Data integrity is the accuracy and consistency of data stored on the computer.

(b) BRIEFLY EXPLAIN METHODS OF MAINTAINING DATA INTEGRITY?

- ✓ Use Anti-Virus software which is a program that is able to detect and protect computers from viruses. Anti-viruses don't only spot unwanted programs but also can delete them and repair the damage done to the files. Below are examples of Anti-viruses.



- ✓ Only use proprietary software from the reliable source on your computer and networks.
- ✓ Use diskless workstations on networks
- ✓ Control access to portable media and do not allow employees to use their own media on the organization's computer system

- ✓ One of the golden rule is Backup. Backup is keeping of files file for later use as a way of safeguarding data from loss, changed. Files can be backed up on CD's, DVD's, Flash drive, external Hard disk.

(c) WHAT IS A SOFTWARE PRODUCT?

A Software product line development refers to a software engineering method tools and techniques for creating a collection of similar software system from a shared set of software using a common means of production.

(d) DEFINE THE TERM COPYRIGHT.

Copyright refers to the laws that protect the authors and creators work from illegal, copying, distribution and modification.

(e) WRITE DOWN THREE REASONS FOR COPYRIGHTING A SOFTWARE.

- ✓ **Protecting** the software, manufacturers from illegal copy and distribution of their work by unknown people.
- ✓ It does not allow modification of the software without the authors or creators permission.
- ✓ It prevents the illegal distribution and selling of the software.

(f) DEFINE THE TERM “END-USER LICENCE AGREEMENT OR SOFTWARE LICENCE AGREEMENT”

The End-User-License agreement is a legal contract between the software author and the user of the software establishing the users right to use the software.

(g) HOW DOES THE USER AGREE AND ACCEPT THE TERMS AND CONDITIONS OF END-USER-EVALUATION AGREEMENT?

- ✓ Opening the shrink wrap on the software package.
- ✓ Breaking the seal on the DVD or CD case.
- ✓ Installing the software on the DVD or CD case.
- ✓ Simply using the software.

(h) DEFINE THE TERM ‘SOURCE CODE’

The source code is (are) codes programmers use to create and modify their software.

(i) STATE THE DIFFERENCE BETWEEN OPEN SOURCE SOFTWARE AND PROPRIETARY SOFTWARE

Open Source software is software with source code that anyone can inspect, modify and enhance that it is available to the public while proprietary software refers to the software whose source code is kept as a secret.

(j) DEFINE THE FOLLOWING TERMS WITH EXAMPLES WHERE NECESSARY

Freeware: Freeware software are software that are copyrighted and are made available to the public for free of charge. Examples of such software are Internet Explorer, Adobe Reader and Microsoft Office.

Share-ware: Share-ware is software that is distributed free on a trial basis with the understanding that the user may need or want to pay for it later.

(k) WHAT IS THE DIFFERENCE BETWEEN FREeware AND SHAREWARE?

Freeware is free software to download while Shareware is not free payment is done later.

Productivity tools (Word Processing)

1. Introduction to windows
2. Key in and edit text
3. Text manipulation and formatting
4. Print preview and printing
5. Saving files and drawing simple graphics

Learning objectives

After you have studied this chapter, you should be able to:

- ✓ Demonstrate how to operate windows
- ✓ Demonstrate how to start and quit a program
- ✓ Demonstrate text copying, deleting, and moving blocks of text within a document
- ✓ Use undo command and reverse the effect
- ✓ Use the redo command
- ✓ Use the preview before printing a document
- ✓ Demonstrate how to save a file.

4.1 Word processing

(a) What is word processing?

Word processing is the creation, retrieval, changing, storage and printing text (letters, numbers and symbols) using a computer. In support, a computer may be defined as an electronic device that process data, accept, retrieve, store and outputs data at a high speed according to a programmed instructions.

Therefore, Microsoft Word is one of the **program** packages run on a computer and it can be used to type letters, reports, and other documents.

(b) What are the uses of word processing?

Answer

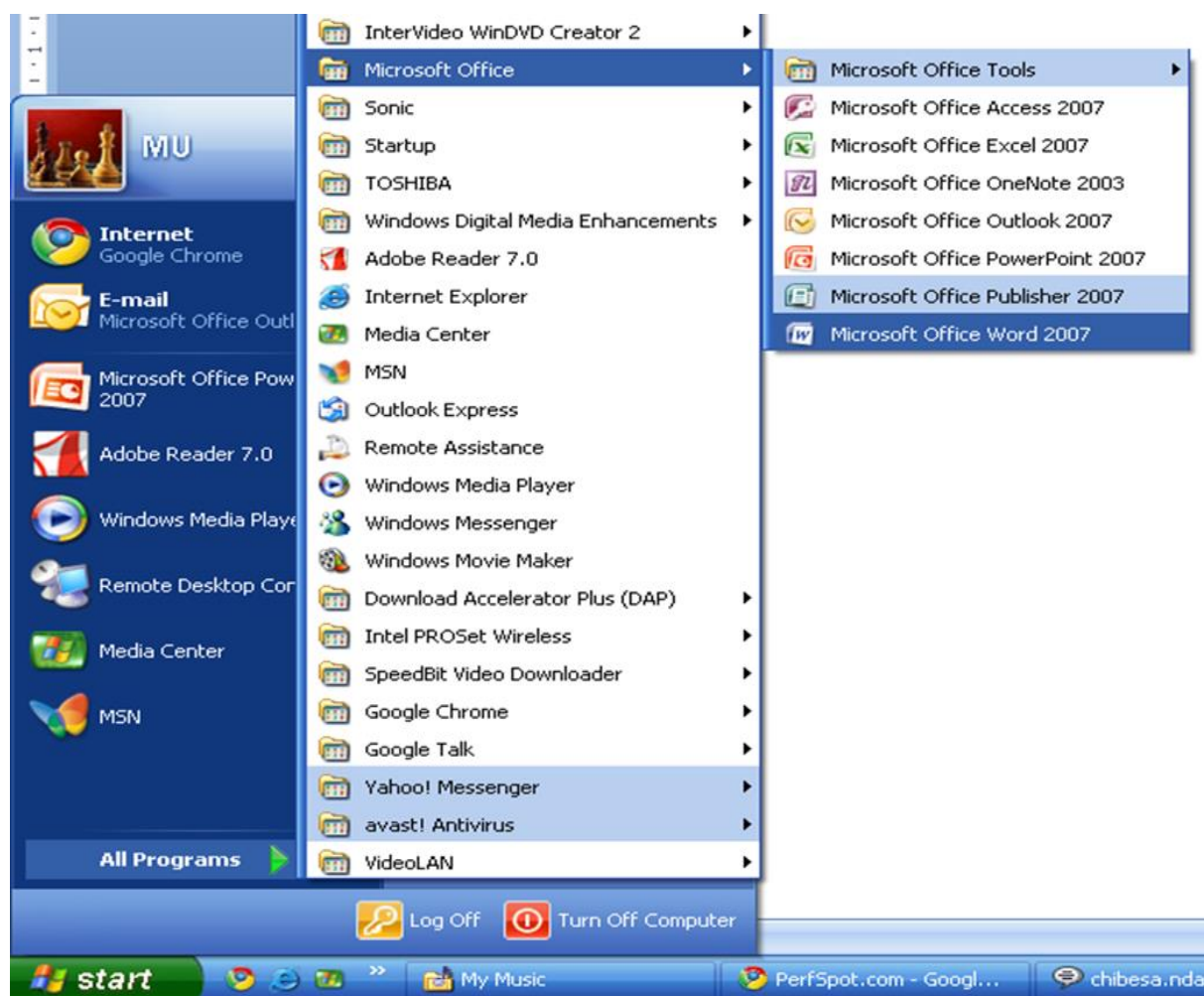
- Create and save a document (permanent).
- Format a document for different presentations.
- Print the document.
- Prepare flyers, brochures, long documents.
- Word-processing versus paper work.

(c) How can you start up Microsoft word

How to Start Microsoft Word

First option


- i. Click start
- ii. Point to programs
- iii. Click Microsoft office
- iv. Then click on Microsoft word document



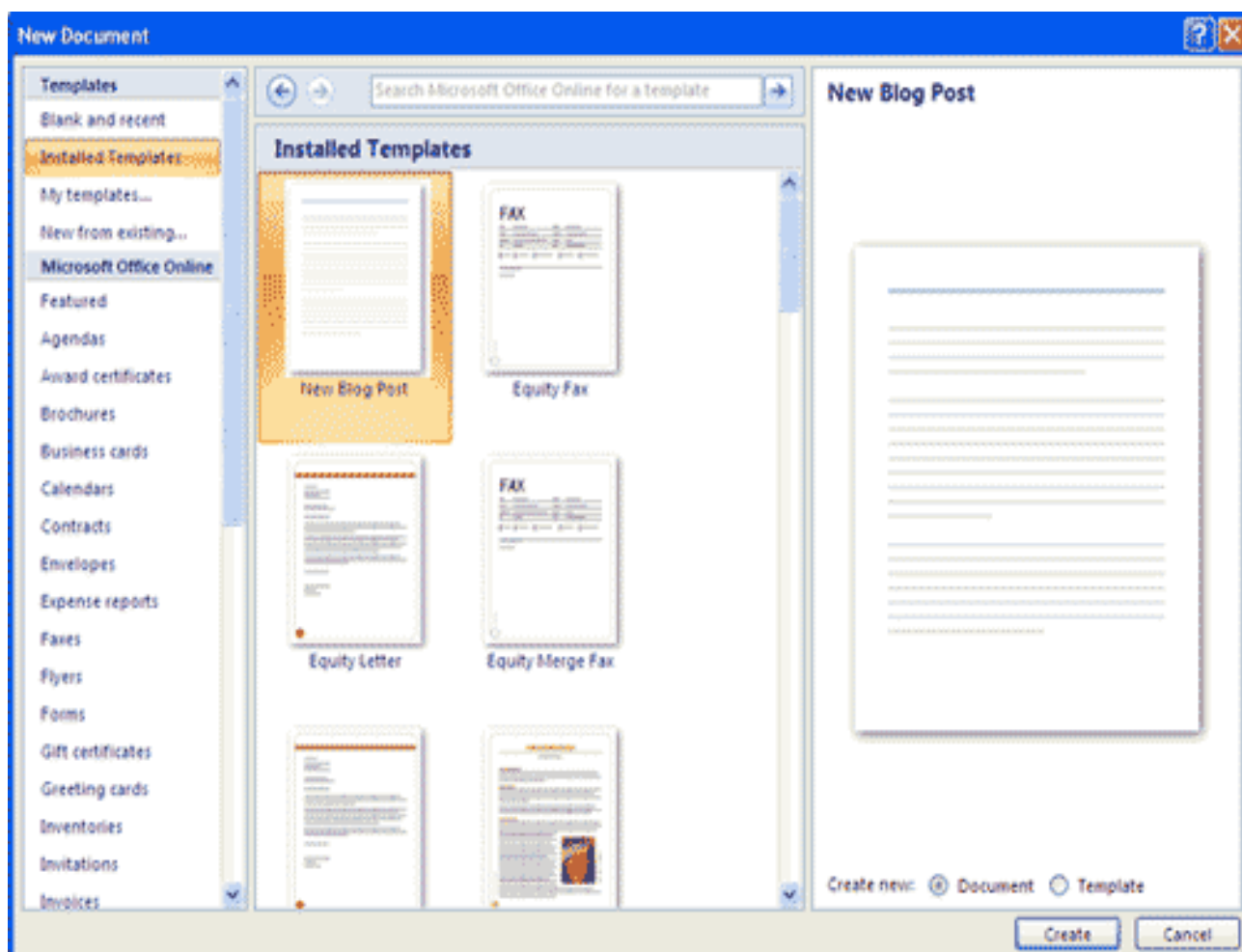
Second option

- a. Right click
- b. Point on new from the menu box
- c. Click on Microsoft word document

The other method is creating a new word document from the already opened word document;


- Click the **Microsoft Office Button**  and Click **New** or
- Press CTRL+N (Depress the CTRL key while pressing the “N”) on the keyboard

You will notice that when you click on the Microsoft Office Button and Click **New**, you have many choices about the types of documents you can create. If you wish to start from a blank document, click **Blank**. If you wish to start from a template you can browse through your choices on the left, see the choices on centre screen, and preview the selection on the right screen.




(c) How can you open an existing document?

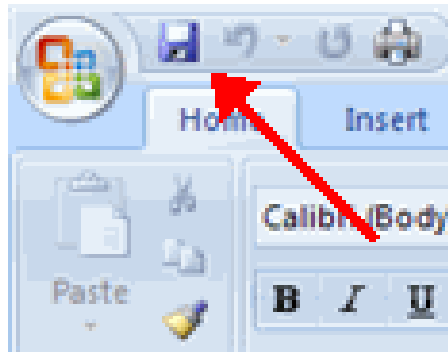
1. Opening an Existing Document

- Click the **Microsoft Office Button** 
- If you have recently used the document you can click the **Microsoft Office Button** and click the name of the document in the **Recent Documents**.

(d) State the steps in Saving a Document

Answer


1. Click the **Microsoft Office Button**  and Click **Save** or **Save As** (remember, if you're sending the document to someone who does not have Office 2007, you will need to click the **Office Button**, click **Save As type**, and Click **Word 97-2003 Document**), or
2. Press CTRL+S (Depress the CTRL key while pressing the "letter S") on the keyboard, or
3. Click the **File** icon on the Quick Access Toolbar as shown below



(e) What are the steps in Renaming Documents

Renaming documents

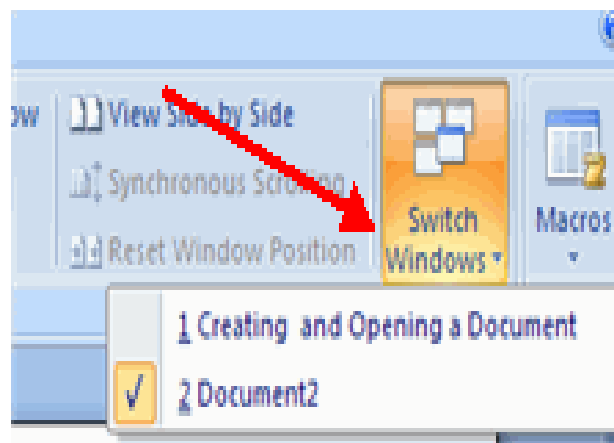
To rename a Word document while using the program:

- Click the **Office Button**  and find the file you want to rename.
- Right-click the document name with the mouse and select **Rename** from the shortcut menu.
- Type the new name for the file and press the **ENTER** key.



(f) **How can you work with several documents at the same time?**

Several documents can be opened at the same time if you are typing or editing multiple documents at once. All open documents will be listed in the **View Tab** of the Ribbon when you click on Switch Windows. The current document has a checkmark beside the file name. Select another open document to view it.



(g) State the ways in which documents can be viewed in Word.

Answer

There are many ways to view a document in Word.

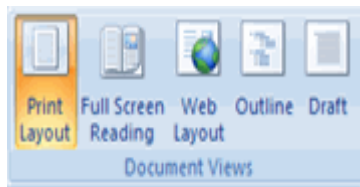
- **Print Layout:** This is a view of the document as it would appear when printed. It includes all tables, text, graphics, and images.
- **Full Screen Reading:** This is a full view length view of a document. Good for viewing two pages at a time.
- **Web Layout:** This is a view of the document as it would appear in a web browser.
- **Outline:** This is an outline form of the document in the form of bullets.
- **Draft:** This view does not display pictures or layouts, just text.

To view a document in different forms, click the document views shortcuts at the bottom of the screen



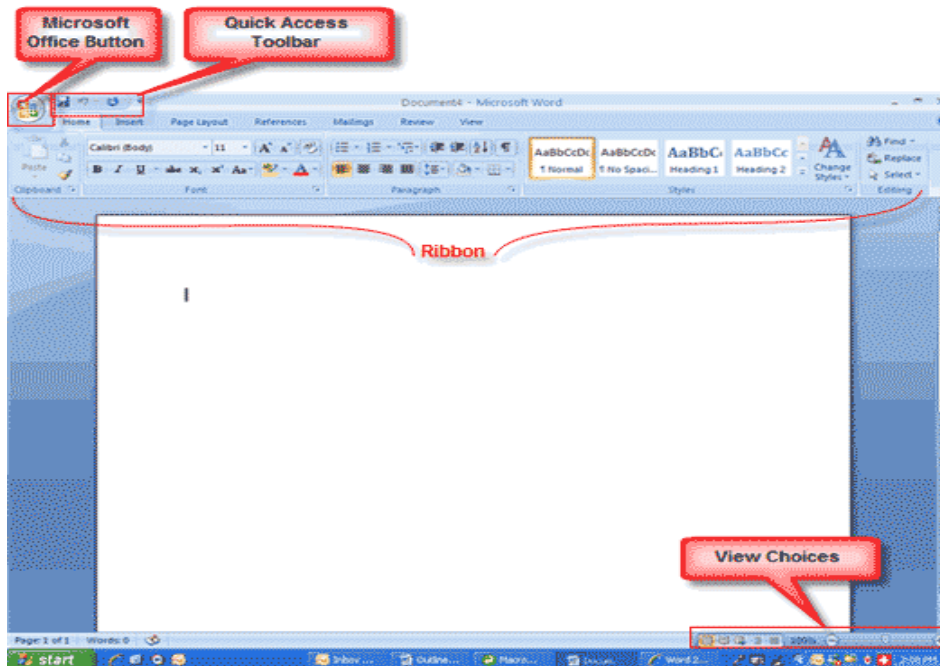
or:

- Click the **View Tab** on the Ribbon
- Click on the appropriate document view.



Once the word document is opened, the layout below is seen and the explanation to each panel is given.

Screen Layout

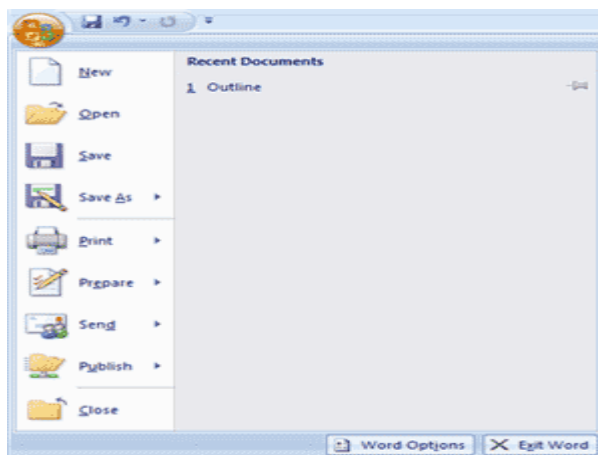


Screen Layout

(h) Menus

When you begin to explore Word 2007 you will notice a new look to the menu bar. There are three features that you should remember as you work within Word 2007: the Microsoft Office Button, the Quick Access Toolbar, and the Ribbon. These three features contain many of the functions that were in the menu of previous versions of Word. The functions of these three features will be more fully explored below.

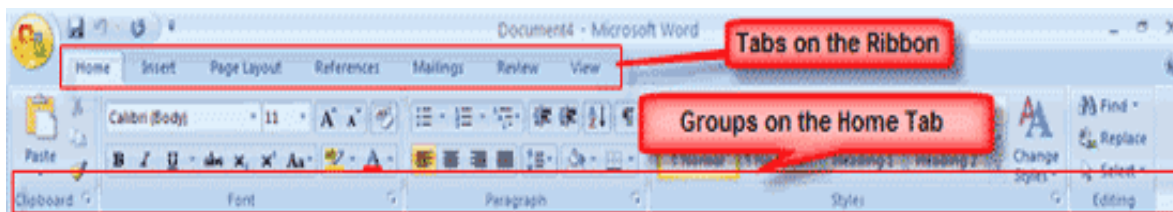
The Microsoft Office Button



The Microsoft Office Button

The Microsoft Office button performs many of the functions of Word. This button allows you to create a new document, open an existing document, save or save as, print, send (through email or fax), publish or close.

(i) The Ribbon



The Ribbon

The Ribbon is the panel at the top portion of the document. It has seven tabs: Home, Insert, Page Layout, References, Mailings, Review, and View that contain many new and existing features of Word. Each tab is divided into groups. The groups are logical collections of features designed to perform functions that you will utilize in developing or editing your Word document. Commonly used features are displayed on the Ribbon, to view additional features within each group, click on the arrow at the bottom right of each group.

Each of the tabs contains the following tools:

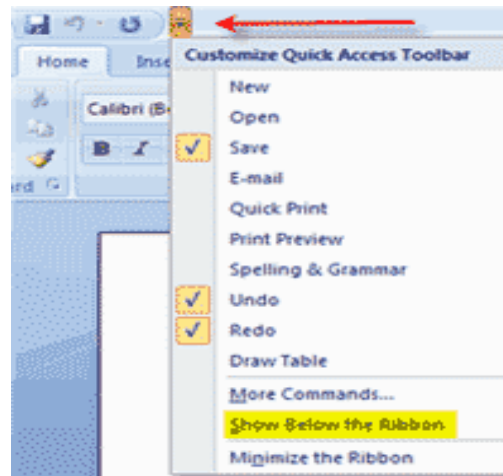
- Home:** Clipboard, Fonts, Paragraph, Styles, and Editing.
- Insert:** Pages, Tables, Illustrations, Links, Header & Footer, Text, and Symbols
- Page Layout:** Themes, Page Setup, Page Background, Paragraph, Arrange
- References:** Table of Contents, Footnote, Citation & Bibliography, Captions, Index, and Table of Authorities
- Mailings:** Create, Start Mail Merge, Write & Insert Fields, Preview Results, Finish
- Review:** Proofing, Comments, Tracking, Changes, Compare, Protect
- View:** Document Views, Show/Hide, Zoom, Window, Macros

(j) Quick Access Toolbar



Quick Access Toolbar

The quick access toolbar is a customizable toolbar that contains commands that you may want to use. You can place the quick access toolbar above or below the ribbon. To change the location of the quick access toolbar, click on the arrow at the end of the toolbar and click on Show Below the Ribbon.



Show below the Ribbon

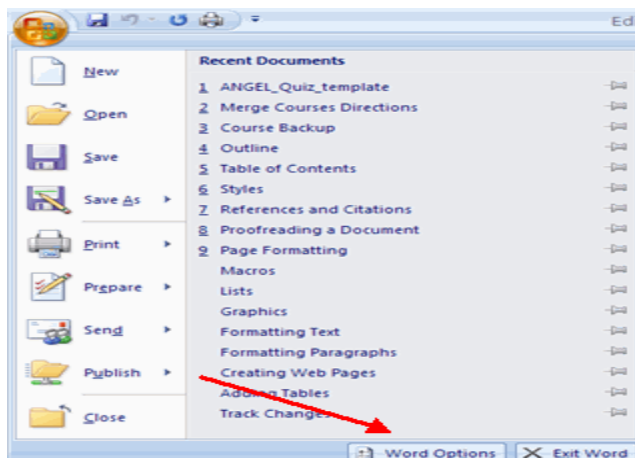
You can also add items to the quick access toolbar. Right click on any item in the Office Button or the Ribbon and click on Add to Quick Access Toolbar and a shortcut will be added to the Quick Access Toolbar.

(k) Customize the Word Environment

Word 2007 offers a wide range of customizable options that allow you to make Word work the best for you. To access these customizable options:

Click the **Office Button**

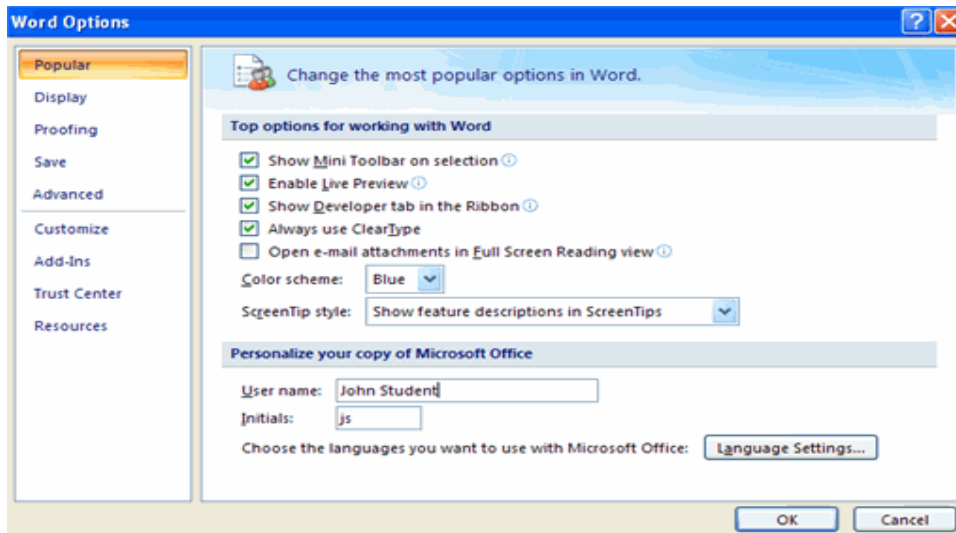
Click **Word Options**



Word Options button

(l) **Popular**

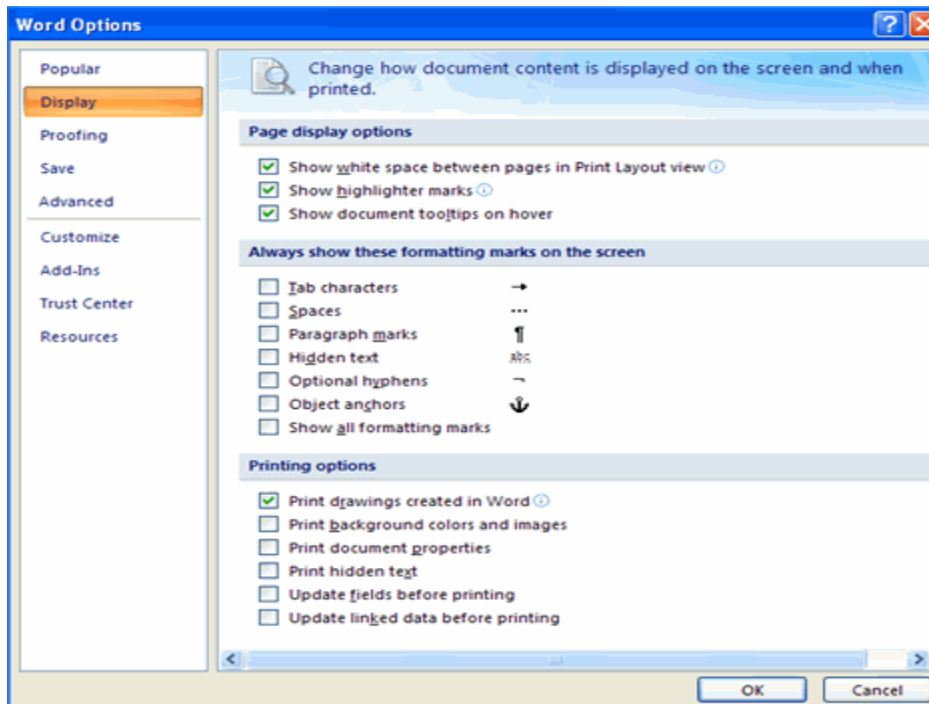
These features allow you to personalize your work environment with language, color schemes, user name and allow you to access the Live Preview feature. The Live Preview feature allows you to preview the results of applying design and formatting changes without actually applying it.



Word Options

(m) **Display**

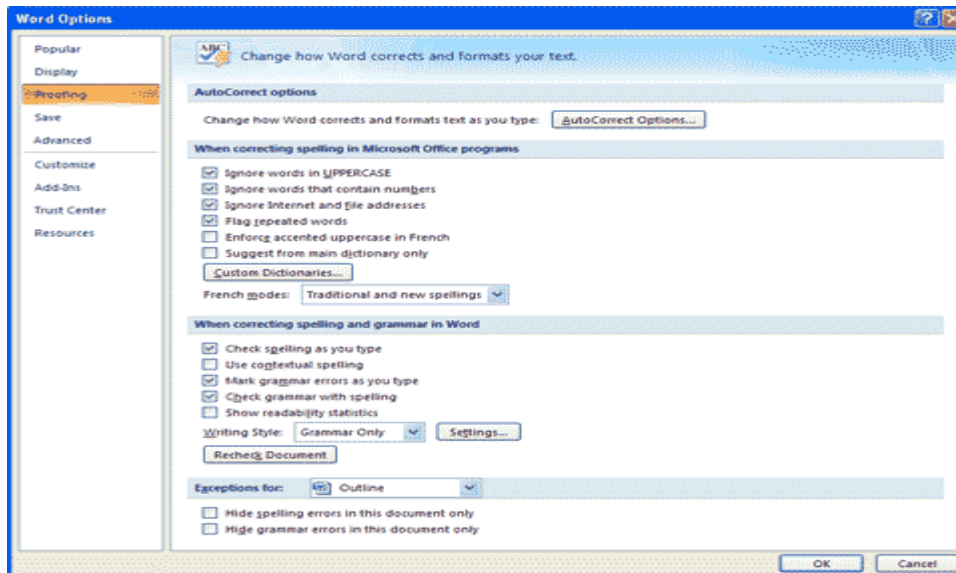
This feature allows you to modify how the document content is displayed on the screen and when printed. You can opt to show or hide certain page elements.



Display Options

(n) Proofing

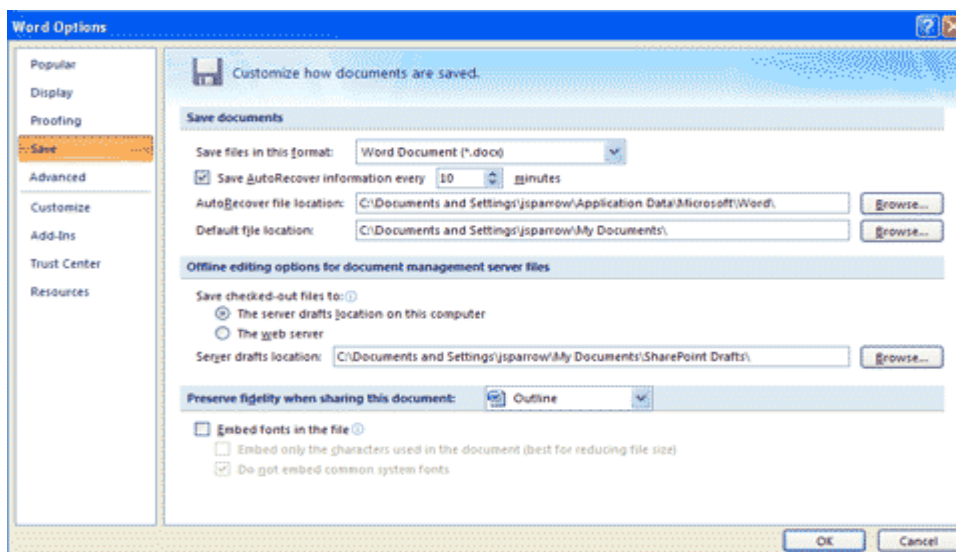
This feature allows you personalize how word corrects and formats your text. You can customize auto correction settings and have word ignore certain words or errors in a document.



Proofing Options

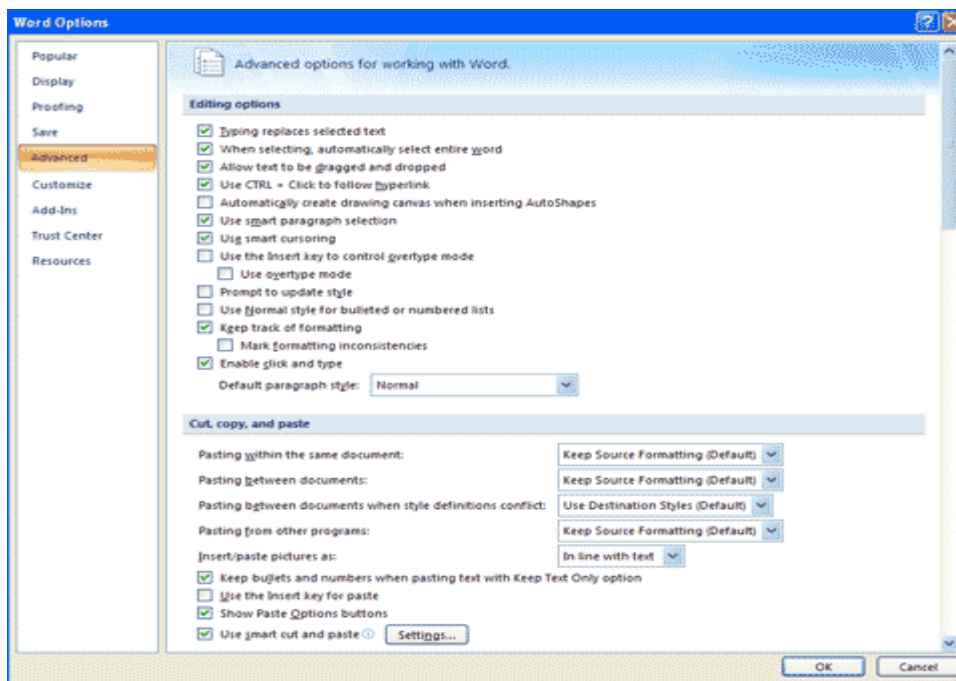
Save

This feature allows you personalize how your document is saved. You can specify how often you want auto save to run and where you want the documents saved.



Advanced

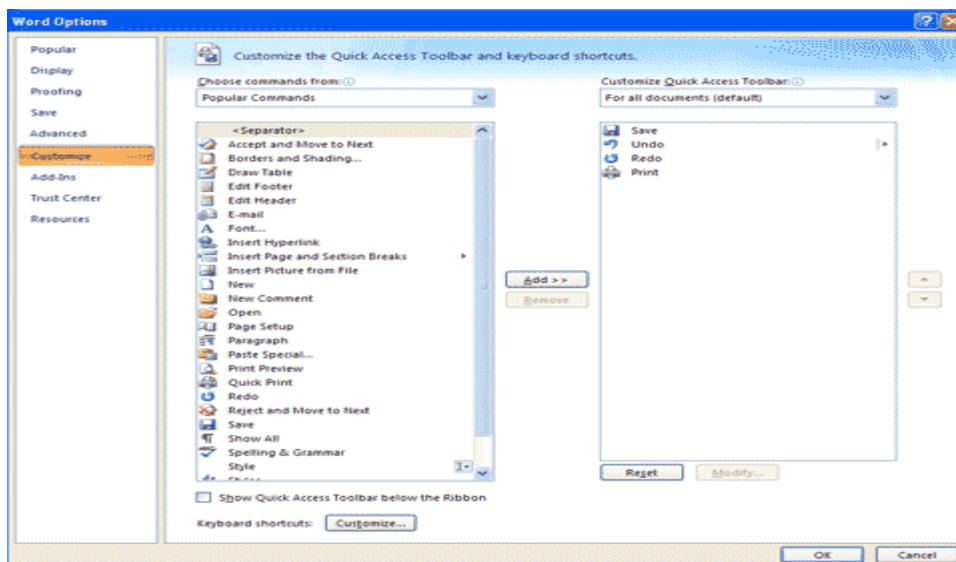
This feature allows you to specify options for editing, copying, pasting, displaying, printing
Saving Options
and saving.



Advanced Options

Customize

Customize allows you to add features to the Quick Access Toolbar. If there are tools that you are utilizing frequently, you may want to add these to the Quick Access Toolbar.



Productivity tools (Spread Sheets)

1. Introduction to spreadsheets
2. Entering and editing data
3. Adding formula
4. Saving and printing

Learning objectives

After you have studied this chapter, you should be able to:

- ✓ Explain the common features of spreadsheets
- ✓ Demonstrate the application of spreadsheets in everyday life
- ✓ Enter and manipulate data using spreadsheets
- ✓ Delete and edit text in the cells
- ✓ Enter data, numbers and simple formulas
- ✓ Design, create and modify spreadsheet for specific purposes
- ✓ Save and print

5.1 Spreadsheets

Questions

(a) WHAT ARE SPREADSHEETS?

Answer.

Spreadsheets are designed to work with numbers and do calculation and are made of rows and columns that help sort data, arrange data easily

(b) EXPLAIN THE COMPONENTS OF A SPREADSHEET?

Answer

- ✓ **Cells** - The blocks on the spreadsheet
- ✓ **Worksheet** - In which you can enter data or formulas to do calculation
- ✓ **Workbook** - The name for a spreadsheet file that contains number of worksheets
- ✓ **Name box** - Shows the address of the cell you are currently working in.
- ✓ **Formula bar** - The area where you can enter formulas to do your calculations.

- ✓ **A row** – is a series of data banks laid out in the horizontal fashion in a spreadsheet and the row headers are numbered 1,2,4,5 and so on. A column is a vertical series of cells in a spreadsheet and column headers are letters A,B,C,D,E and F.

(c) **DEMONSTRATE THE APPLICATION OF SPREADSHEET IN EVERYDAY LIFE**

Answer

- They can be used to keep track of finances
- For stock control
- To record, sales data and then predict future trends.
- they are used by teachers to keep track of their learners mark
- They are used for setting out budgets and checking that your expenses are within the budget.

(d) **LIST THE BASIC ARITHMETIC OPERATIONS USED IN EXCEL/ SPREADSHEET.**

Answer

- ✓ Addition:
- ✓ Subtraction:
- ✓ Multiplication
- ✓ Division

(e) **IDENTIFY THE COMMON USED FUNCTIONS**

Answer

SUM this function adds all the values in the range of cells given between the blackes

AVERAGE finds the average of all the values in the range of cells given between the brackets, for

PRODUCT finds the product of all values in the range by multiplying all the values by each other for

QUOTIENT finds the nearest integer value of a division sun if you gave it the numerator and denominator. This function

MIN finds the lowest minimum value in a range of values for examples

MAX finds the highest maximum value in a range for example

COUNT counts the number of entries there are in a range of cells.

- (f) ENTER AND MANIPULATE DATA, NUMBERS AND APPLY FORMULA SUCH AS ADDITION, SUBTRACTION, MULTIPLICATION AND DIVISION. ALSO MODIFY THE SPREADSHEET BY USING FUNCTION SUCH AS SUM, PRODUCT AVERAGE AND QUOTIENT.

	A	B	C	D	E	F
1	Class	8B				
2	Teacher	Mr musonda				
3						
4	Surname	First name	Theory Test	Practical Test	Total	
5	Mulenga	Nomsa	56	66	=C5+D5	
6	Lubasi	Grace	71	75	=C6+D6	
7	Niekwa	Nancy	76	80	=C7+D7	
8	Zulu	Sara	82	81	=C8+D8	

The formula in the column E was copied using the drag handle. Notice how the cell references have changed automatically in each row.

	A	B	C	D	E	F
1	Class	8B				
2	Teacher	Mr musonda				
3						
4	Surname	First name	Theory Test	Practical Test	Total	
5	Mulenga	Nomsa	56	66	122	
6	Lubasi	Grace	71	75	146	
7	Niekwa	Nancy	76	80	156	
8	Zulu	Sara	82	81	163	

The marks for each learner have been added in the column

QUESTION

- A. Open a new worksheet and change the page layout to landscape.
- B. Type your name , examination number and school/centre in the header
- C. Enter data in the table below.

	A	B	C	D	E
1		TOTAL IN CLASS	PASSED	FAILED	PERCENTAGE PASS
2	12 A	65	42		
3	12 B	50	38		
4	12 C	45	44		
5	12 D	48	48		
6					
7					

- 1. Insert two rows above cell A1 and then type Grade 10 physic Results in a new 1A in upper case
- 2. Merge cells A1 to E1 and change background colour to yellow.
- 3. Type a formula in cell D4 to calculate the number of pupils who failed
- 4. Insert formula in E4

SOLUTION

- A.
 - i, Right click on your mouse and put your pointer on new. After that a dialogue box will appear then click on Microsoft excel application.
 - ii, click on page layout, a dialogue box will appear click on orientation than on landscape
- B. Click on insert on the access toolbar, and click on header, a dialogue box will appear, click on blank three columns
- C. Than enter the data in Microsoft excel above
 - 1. Put the caser in cell A1, than right click on the mouse button. A dialogue box will appear click on insert and click on entire row than press ok.
 - 2. Click on merge on the access toolbar which as a symbol small later a. a dialogue box appears click on merge across.
 - i, highlight cell A1 to E1 then click on font colour on the access toolbar which as a symbol capital later A dialogue box will appear then click on yellow colour.
 - 3. Type the formula in cell D4. =B2-C2 then press enter.
 - 4. Press the caser at the right corner of cell D4 and left press on the mouse button then drag the pointer to D7 then release
 - 5. Type the formula in cell E4. =C4/B4*100 then press enter.

Productivity tools (PowerPoint)

1. Getting Started with PowerPoint
2. Slides & Presentations

Learning objectives

After you have studied this chapter, you should be able to:

- ✓ Understand PowerPoint Principles
- ✓ Start PowerPoint
- ✓ Use an Installed Template
- ✓ Recognize the Screen Layout
- ✓ Understand and Use Different Views
- ✓ Understand Slide Show Basics 8.6.2.3. Save, Close and Open Presentations
- ✓ Use Presentation / Design Templates
- ✓ Add New Slides / Insert Slides / Delete Slides
- ✓ Change Slide Layout and Background

6.1 Presentation Software

Question

- (a) **What is presentation software?**

It is application software used to create an order of words and pictures that tell a story or help to support a speech or public delivery of information.

- (b) **Give examples of presentation software**

Answer

- 1) MS PowerPoint
- 2) Keynote-for MAC

6.2 PowerPoint

Question

(a) Define PowerPoint

Answer

Presentation software that allows you to create slides, handouts, notes, and outlines.

It is an application software found in the Microsoft Office package for presentation.

(b) What can slide shows include?

Slide shows can include text, graphics, video, animation, sound and much more.

(c) Give advantages of using PowerPoint

ADVANTAGES:

- ✓ It enables one to present information in office meetings, lectures, schools and seminars to create maximum impact in a minimal amount of time.
- ✓ PowerPoint presentations can amplify your message, speed up the information being absorbed and assist with comprehension enabling faster decision making.
- ✓ It makes presentation interesting by including different animations.

(d) Give the Principles for Effective PowerPoint Presentations

Answer

No matter what kind of presentation software you use, keep these five principles in mind as you prepare your slides.

1. Brief is better.

Keep your slides brief and to the point. Each slide should perform a particular function, such as any of the following:

- Reminding you what you want to talk about
- Getting the audience to focus on one point
- Presenting a key concept

2. Cut down on the text.

- Keep each concept separate. Don't try to join three key points into one bullet. Instead, make them separate bullets or even separate slides.
- Don't be afraid to use more slides. The number of slides in your presentation is *not* the primary indicator of how long your talk will be. What's important is choosing which slides to spend your time on.

- Use graphics to help tell part of the story e.g. pictures.

3. Don't overdesign.

Don't do things that make your audience focus more on the presentation software than on what you're saying.

- Don't use lots of different fonts and font colors to avoid distractions.
- Don't set the slide transitions to "Random." This is the mark of true amateurs who don't have a clue what they're doing.
- Don't use colors to indicate emphasis, do that yourself as you're talking.
- Be careful on how to use background alongside font colors.

4. Use simple, clear, and consistently applied fonts, slide transitions, and animations.

Following up on, here are tips to always follow:

- Use clean, easy to read fonts, such as Arial, Helvetica, Calibri, Cambria, Century Gothic, Lucida, and Tahoma. Avoid smaller fonts, such as Garamond, Georgia, and Book Antiqua.
- Use one font for slide headings and another for bullet text.
- Make sure your font color has enough contrast to make it stand out against the background.
- Make slide transitions and animations subtle. The idea is to get the audience to focus on what you're saying, not on how cool the animations are. I recommend Fade, Shape, or just plain Appear.

5. Let graphics work for you, not against you.

- Keep graphs simple, each one offering one key point. Cramming too much data on a slide, particularly through the use of stacked bar graphs and scatter plot graphs, won't do you or your audience any good. Put them in a handout, making them large enough to read easily.
- Remember that when you project your show on screen, the colors will wash out a bit, meaning they'll lose contrast. So what looks vibrant on your monitor won't appear quite that vibrant on the screen. So give your overall design lots of contrast with either a dark background or really light text or a light or white background and dark text.

(a) Outline the steps to be taken when starting up a PowerPoint presentation

GETTING STARTED PowerPoint Document

To start Microsoft PowerPoint

First option

- i. Click start
- ii. Point to programs
- iii. Click Microsoft office
- iv. Then Microsoft PowerPoint

Second option

1. Right click
2. Point on new from the menu box
3. Click on Microsoft PowerPoint presentation

When you first open PowerPoint you will see what's called the **Normal** view.

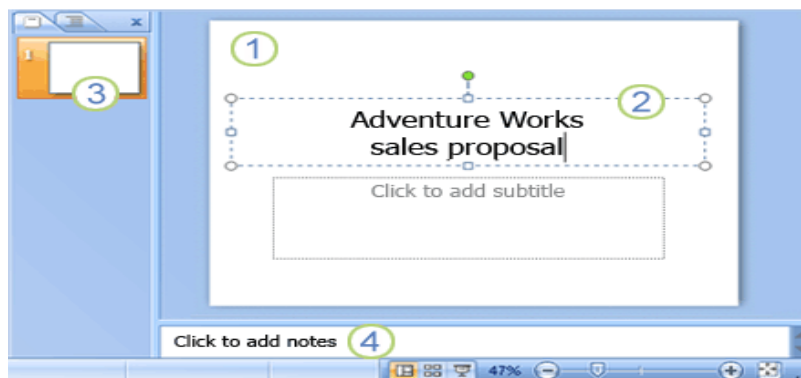


Figure1.0: Normal view in office 2010

FEATURES:

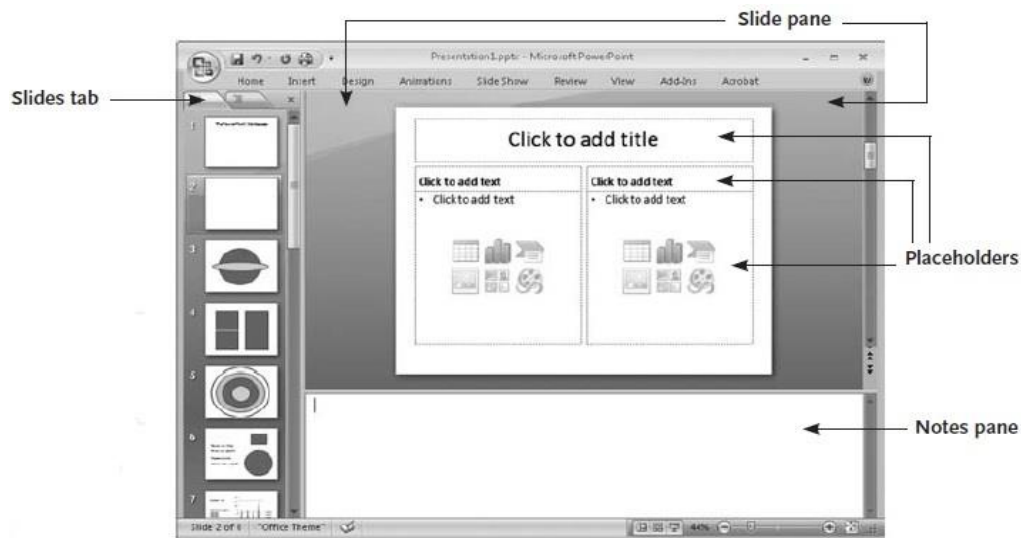


Figure1.1: Normal view in office 2007

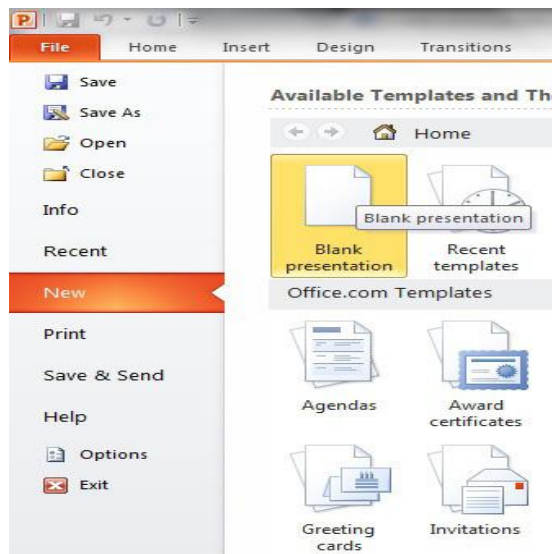
(b) What are the common features of a PowerPoint page?

- **SLIDE:** is an individual page of one's presentation.
- The **slide pane** is the big area in the middle. This is the area you will work in to create your slides.
- On each slide, you will see various boxes with the dotted borders which are called **placeholders**. This is where you type your text. Placeholders can be customized to different sizes and can contain pictures, charts, and other non-text items.
- On the left of the screen are **thumbnail** versions of the slides in your presentation; the slide you're working will be highlighted.
- The bottom area is the **notes pane**, this is where you type speaker notes that you can refer to when you present.

(c) **What is the first step of creating a new presentation?**

Answer

- ✓ Select "File" then "New" or
- ✓ Shortcut: Hold the Control button, then press 'N' for "New"

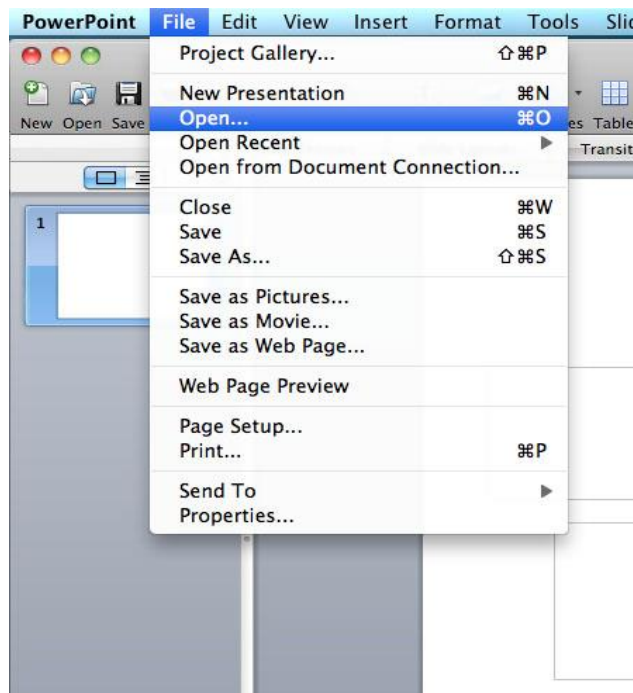


(d) How can you open an existing presentation?

Answer

Select "File" then "Open" or

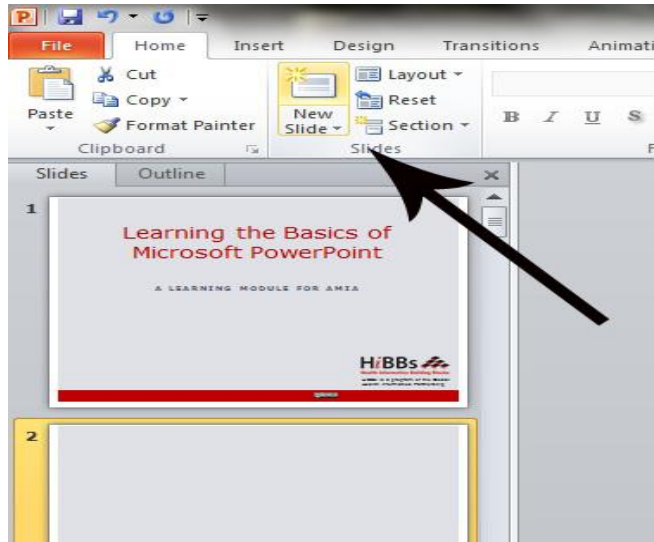
Shortcut: Hold the Control button, then press 'O' for "Open"



(e) **How can you add a slide?**

Answer

- ✓ Go to the “Home” ribbon and select the “New Slide” button
- ✓ Select the Slide Pane and press “Enter”



(f) **How can you insert pictures from a file?**

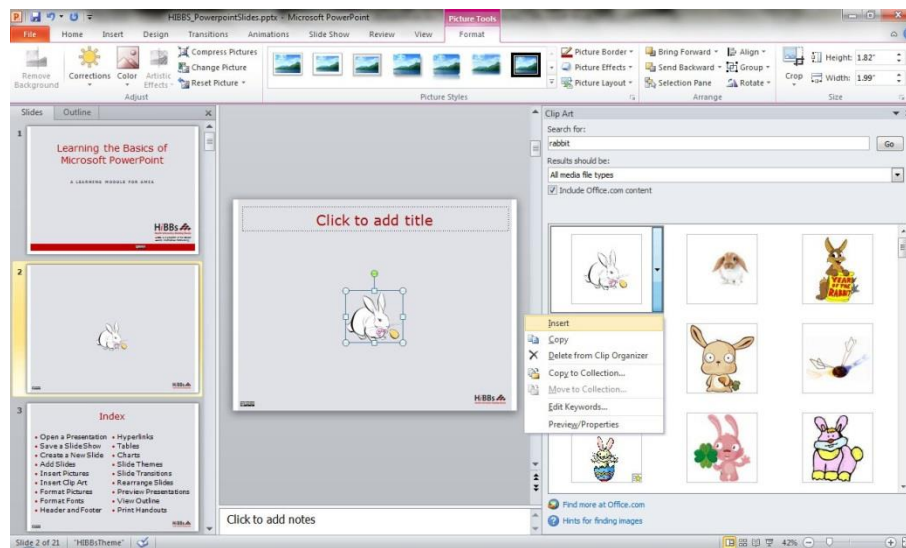
Answer

- ✓ Go to the “Insert” ribbon then select “Picture”
- ✓ Locate the image file from the folder to where it is saved.
- ✓ Select “Insert” from the dialog box.

(g) **How can you insert a clip art?**

Answer

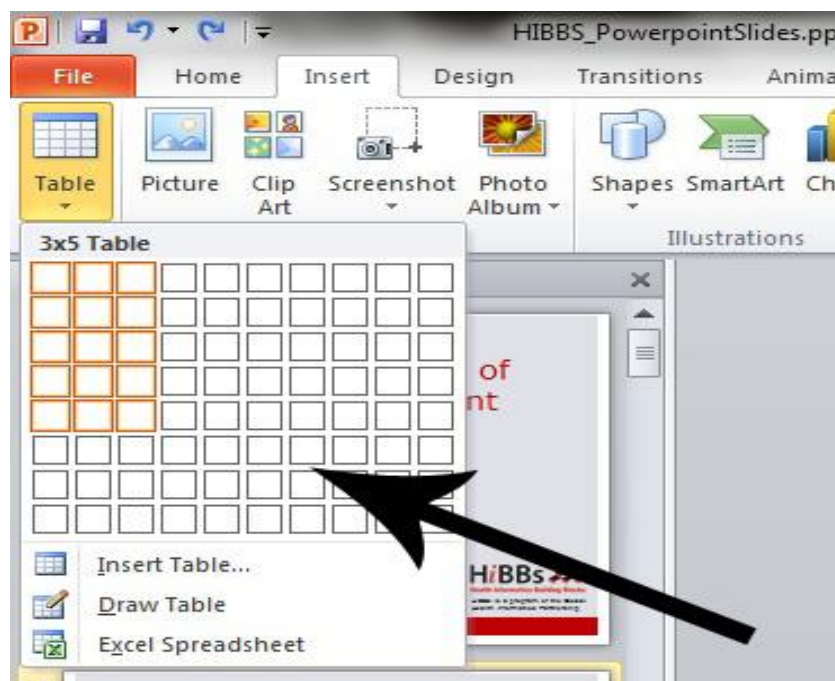
- ✓ Go to the “Insert” ribbon then select “Clip Art”
- ✓ Enter search terms in Clip Art search pane on the right and select image.



(h) How can you insert tables?

Answer

- ✓ Go to the “Insert” ribbon then select “Table”
- ✓ Move the mouse over the table illustration to select the size of the table you would like to use.



(i) **How can you insert charts?**

Answer

- ✓ Go to the “Insert” ribbon then select the “Chart” button.
- ✓ Option to choose from Area, Bar, Line, Pie and several other Chart Options.

(j) **How can you preview a presentation?**

Answer

- ✓ Go to the “Slide Show” ribbon
- ✓ Select the point in the slide show that you would like to begin viewing.
- ✓ From beginning
- ✓ From current slide

- ✓ The shortcut key is F5

(k) **How can you print a presentation?**

Answer

- ✓ Select “File” then select “Print”
- ✓ A dialog box appears that allows you to change the printer and select the number of copies to be printed.
- ✓ You can also select to print handouts of the slideshow.

6.4 Using installed templates

What is a template?

A template is a pattern that gives one’s presentation a graphical consistency from the first slide to the last slide.

TO CREATE A PRESENTATION USING THE INSTALLED TEMPLATE:

4. Go to File Menu- New-Design Templates
5. Choose and click ok.

HELP OPTION: look for a “?” symbol, select and type any help you want.

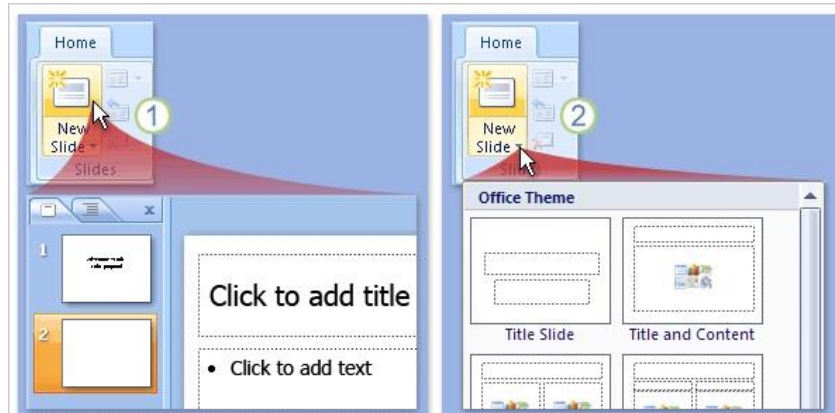
SLIDE VIEWS:

One can apply different slide layouts in the home Menu as well as Background in Design Menu.

ADDING ADDITIONAL SLIDES

When you open a new PowerPoint document you will only see one slide. In order to add more slides you need to create them, to do this you have a few options.

1. Clicking on the top portion of the **New Slide** command, on the **Home** tab is the easiest method because a new slide will be added immediately. PowerPoint will automatically insert a **Title and Content** slide when using this method of adding slides.
2. If you click the bottom part of the **New Slide** command, a box will appear and you will see a gallery of **layouts** for you to choose from which will be inserted after your previous slide once you click on your preferred slide option.
3. to delete a slide, right click on a slide to view the options and select **"delete slide"**.



ADDING A DESIGN THEME

A theme includes a background design, color scheme, font types, font sizes, and placeholder positions in one package. Every new presentation starts out with the default theme, called **Office** theme, which is a **white background** and black text. However you can change the theme to a wide variety of options. To find and apply a theme, click the **Design** tab on the Ribbon.

1. The **Themes** group provides thumbnails of different design options.
2. To see additional themes, click the **More** arrow button on the right of the group.
3. When you point and hover on any theme thumbnail, a preview of the theme will appear on the slide. To apply the theme to your slides, click on the thumbnail design you like.



SAVING SLIDES

The saving procedure is just the same as other productivity tools.



Networking

1. Networking
2. The internet
3. Web browsers
4. Using search engines
5. E mail

Learning objectives

After you have studied this chapter, you should be able to:

- ✓ Networking computers in different locations
- ✓ Differentiate between wired and wireless networks
- ✓ Access information using (LAN) and (WAN)
- ✓ Recognize web browsers
- ✓ Demonstrate how to use web browsers and go to specific (URL)
- ✓ Define a search engine and state what it is used for
- ✓ Explain what e mail is used for.

7.1

Networking

Question

(a) WHAT IS COMPUTER NETWORKING?

Answer

Computer networking is the inter-connection of two or more computers and other devices to exchange information or messages.



(b) NAME THE TWO TYPES OF COMPUTER CONNECTIONS

Answer

- 1) Wireless
- 2) Wired

(c) LIST DOWN ADVANTAGES AND DISADVANTAGES OF NETWORKING.

ADVANTAGES

- Enables letter communication examples such as E-mails, SMS etc.
- Security of information. Information can be stored or backed up on the internet and be saved from malware threats on the computer.
- Sharing of network hardware resources such as printers, scanner.
- Sharing of information such as documents, files.
- System is inexpensive to operate.

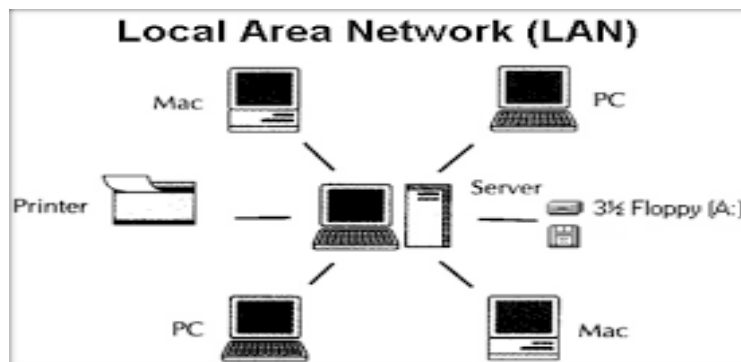
DISADVANTAGES

- It comes with the risk of security issues such as phonographic videos.
- It encourages people to become dependent on computers
- It opens up a door to computer viruses and malware.

(d) DESCRIBE THE FOUR TYPES OF NETWORKS AND WRITE DOWN THEIR ADVANTAGES AND DISADVANTAGES.

1) LOCAL AREA NETWORK (LAN)

This is the type of network that covers a small geographical area such as an office, classroom, company and allowing sharing of network resources such as printers, documents, scanner etc.



ADVANTAGES

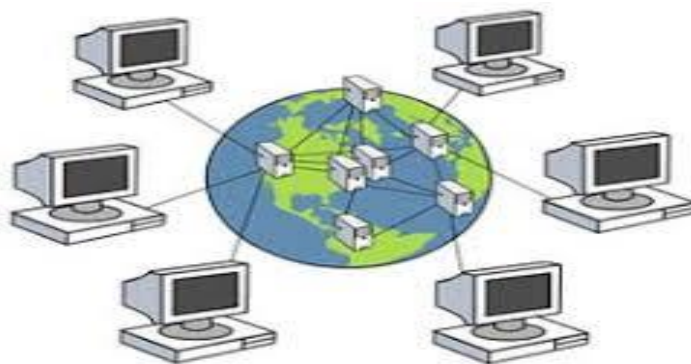
- Hardware and software sharing
- Workstation survival during network failure
- Addition of new computer to network is very easy
- High data transfer rate.

DISADVANTAGES

- Maintenance costs
- Covers a small geographic area

2) WORLD AREA NETWORK (WAN)

A World Area Network is a network that covers a wide geographical area such as a country, continent etc. it is the biggest of all types of networks.



ADVANTAGES

- ✓ It covers a wide geographical area separated businesses can be connected to do their work efficiently.
- ✓ Different software's and resources can be shared among computers on the internet.
- ✓ Messages can be sent easily and quickly to anyone else on the internet in different parts of the world.

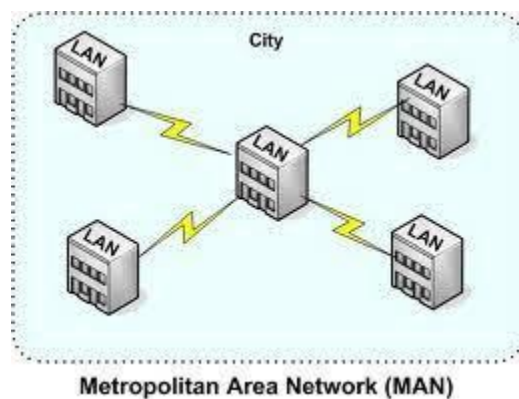
- ✓ One can research from the world within seconds.

DISADVANTAGES

- ✓ It is expensive to install as it requires a lot of equipment and technical knowledge on how to set it up.
- ✓ It can be insecure that outsiders might access to confidential data and information of the company, organization, or government.
- ✓ Maintenance is a full time job which requires technicians to be present at all time at the site.
- ✓ Relatively slow when there is network congestion.

3) METROPOLITAN AREA NETWORK (MAN)

A collection of LAN is in the same geographical local area for example a city. It can also be described as a network of computers located at different sites within a large physical area in a city.



ADVANTAGES

- ✓ It covers a wide area than LAN examples at airports, government Agencies and Libraries.
- ✓ Information can be shared and transferred more widely, rapidly and significantly

DISADVANTAGES

- ✓ It will only apply if the personal computer or terminal can compete.

4) PERSONAL AREA NETWORK (PAN)

A personal Area Network is a computer network used for data transmission amongst devices such as computers, telephones, tablets and personal Digital assistant.



5) DESCRIBE THE DIFFERENCE BETWEEN AN INTRANET AND AN EXTRANET

An intranet is a network where employees can create content, communicate, collaborate, and develop the company culture while an **Extranet** is like an intranet but provide access to authorized customers, vendors, partners or others outside the company.

7.2

Web browsers

(a) DEFINE THE TERM WEB BROWSER

Answer.

A web browser can be defined as application software that can be used to access the internet.

(b) LIST DOWN THE MOST COMMON USED WEB BROWSERS

- Google
- Internet Explorer
- Opera mini

(c) WHAT IS A SEARCH ENGINE?

A Search Engine is a web based tool used to search and locate specific information on the internet.

(d) LIST DOWN EXAMPLES OF SEARCH ENGINES

- Google
- Yahoo
- Bing

(e) DIFFERENTIATE BETWEEN WORLD WIDE WEB AND THE INTERNET

An Internet is a massive inter-connection of networks while a World Wide Web is a way of accessing information over the medium of the internet.

(f) WHAT IS URL?

URL stands for **Uniform Resource Locator**. It is the address to a resource on the internet.

(g) LIST DOWN THE MAIN COMPONENTS OF A URL

- i) **SCHEME:** Identifies the protocol to be used to access the resource on the internet.
- ii) **A HOST:** identifies the host that holds the resource
- iii) **PATH:** This is typically a file or location on the web server.
- iv) **PORT:** The port is used to connect to the location.

(h) LIST DOWN THE VARIOUS SERVICES AVAILABLE ON THE INTERNET

- Electronic Mail – more commonly known as email, electronic mail
- Healthy information access
- E-commerce
- Electronic learning tools

(i) DEFINE AN E-MAIL.

E-mail can be defined as an electronic messaging system, transmission of messages via the internet.

(j) WHAT IS AN E-MAIL ADDRESS?

An E-mail address defines the location of an individual's mail box on the internet. A mailbox is where your e-mails are stored over the internet when they are sent to you.

(k) BRIEFLY EXPLAIN THE STRUCTURE OF AN E-MAIL ADDRESS AND ITS COMPONENTS

An e-mail address consists of three elements which are the

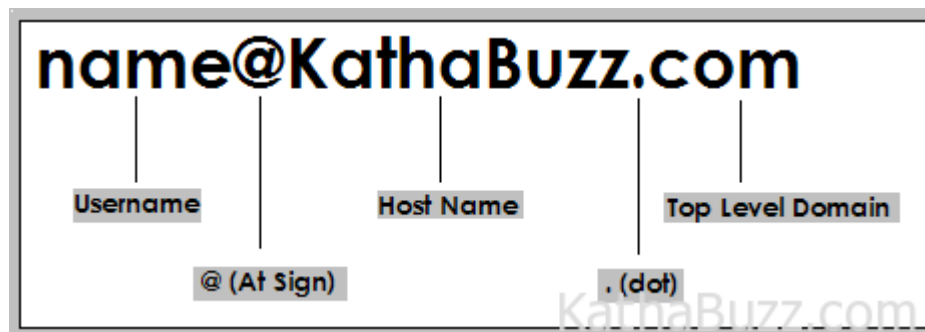
- **The username** – is the word you use to access your email account / address
- **@ symbol-**, the separator referred to as “at” indicates your email service provider.
- **The domain-** is the last part of an e-mail address and it is made up of three parts which are:
 - i) E-mail service provider- such as Zamtel, MTN, etc

- ii) Top level domain- specifies the type of email address such as COM- Commercial, Org – Organization, Net- Network, Gov - Government, Co- Company etc
- iii) Country code domain- specifies the location of a country you are operating from such as Zm- Zambia, Au- Australia, UK- United kingdom, US- United States, SA- South Africa etc.

(I) GIVE 2 EXAMPLES OF AN EMAIL ADDRESS AND LABEL THE PARTS.

1) bulangililosecscho@yahoo.Com.Zm

Username symbol domain



(m) LIST DOWN ADVANTAGES AND DISADVANTAGES OF E-MAIL

ADVANTAGES

- Emails are faster, convenient messages can be sent just by a click
- Emails are cheaper and reliable can be sent anywhere to any one at any time
- Email can be used to send and share multimedia files such as pictures, videos, text documents etc
- An email address can be sent to more than one person at once

DISADVANTAGES

- E-mails are a gate way to viruses
- E-mails can receive SPAM or JUNK mails. SPAM or JUNK mails are unwanted mails or unexpected mails that can be an advert or a scholarship.
- Only those with an internet connection can send and receive mails
- A person cannot have access to email services if they do not have an email address.
- Persons who are computer illiterate cannot manage to create e-mails.

Multimedia files

1. Introduction to multimedia files
2. Graphics
3. Video and audio

Learning objectives

After you have studied this chapter, you should be able to:

- ✓ Create a multimedia presentation
- ✓ Access available databases for images, sound clips or recorded voices
- ✓ Control the flow of the presentation

8.1 Introduction to multimedia

Question

(a) What is multimedia?

Answers

The term multimedia is coined from two terms: Multiple and Media. Hence multimedia means using multiple medias to communicate.

Multimedia is the combination of different media elements like text, audio, graphics, video and animations.

it is the use of more than one type of medium at the same time to convey a message or information. Like a television, a PC can present many media types simultaneously. For example a text, animation, music and narration can all play at the same time.

(b) What is the importance of using multimedia?

Answer

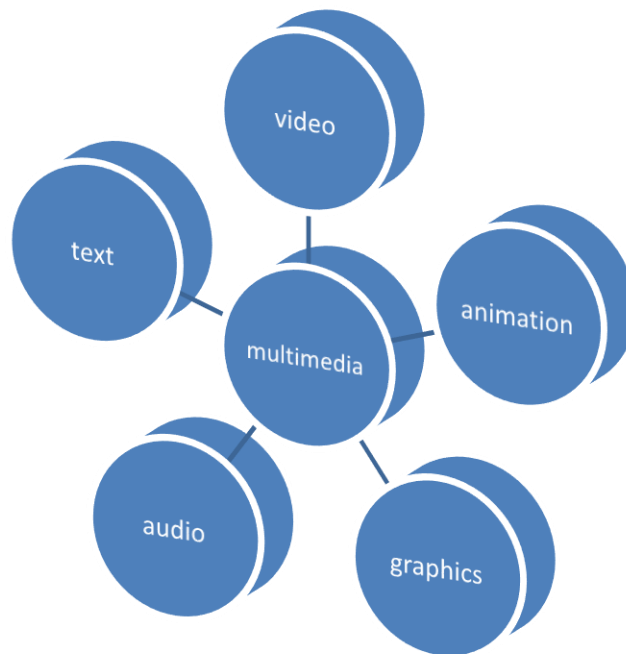
Multimedia presentation of any information greatly enhances the **comprehension capabilities** of the user as it involves use of more of our senses.

Questions

(a) What are the elements of multimedia?

Answers

- ✓ Text... alpha numeric characters
- ✓ Graphics... line drawings and images
- ✓ Animation.. moving images
- ✓ Audio... sound
- ✓ Video... video graphed real life events



(b) Write brief notes about the elements of multimedia

Answers**Text:**

Alpha numeric characters are used to present information in text form. Computers are widely used for text processing

Keyboards, OCRs, computer screens and printers are commonly used as hardware devices for processing text media.

Text editing, text searching, hypertext and text importing\exporting are some highly desirable features of a multimedia computer system for better presentation and use of text information

Hypertext is a text which contains links to other texts.

A typeface is a family of characters or letters which have similar looks. E.g. Arial-12 points, Times New Roman-14points, Algerian-18 points etc



Examples of types of Text

- Arial
- Times New Romans
- **ALGERIAN**
- **Impact**
- **Bauhaus 93**
- **Broadway**
- *Brush Script*

Video

- ✓ The term video refers to several storage formats for moving pictures e.g. digital video formats, including Blu-ray Disc, DVD, QuickTime, and MPEG-4; and analog videotapes, including VHS and Betamax. This is the Technology of electronically capturing, recording, processing, storing, and transmitting a sequence of still images in motion.
- ✓ Computer video deals with recording and display of a sequence of images at a reasonable speed to create an impression of movement. Each individual image of such a sequence is called a frame
- ✓ Video camera, video board, video monitor and video editor are some of the commonly used hardware devices for processing video media.
- ✓ Some desirable features of multimedia comp video clips and recording and playback capabilities.

Digital Video

Digital Video: Composed of a series of still image frames and produces the illusion of movement.

Animation

- ✓ This is a simulation of movement created by displaying a series of pictures.
- ✓ Animation is a visual change over time. ■ Computer animation deals with generation, sequencing, and display at a specified rate of a set of images called frames to create an effect of visual change or motion similar to a movie.
- ✓ Animation is used mostly in those instances where videography is not possible for animation can better illustrate the concept than video
- ✓ Animation deals with displaying a sequence of image at a reasonable speed to create an impression of movement. For a jerk free full motion animation, 25 to 30 frames per second is required
- ✓ Scanners, digital cameras video capture board interfaced to a video camera or vcr, computer monitors with image display capability, and graphics accelerator board are some common hardware devices for processing animation media.
- ✓ Some desirable features of a multimedia computer systems with animation facility are animation creation software's, screen capture software's, animation clips animation, file importing, and software support for high resolution, recording and playback capabilities and transition effects.

Graphics

- ✓ Graphics are visual presentations on some surface, such as a wall, canvas, computer screen. e.g. photographs, drawings, Line Art, graphs, etc.
- ✓ This is an image that is generated by a computer

- ✓ Computer graphics deal with generation, representation, manipulation, and display of pictures, line drawings and images.... With a computer

Audio

- ✓ Computer audio deals with synthesizing, recording and playback of sound with a computer
- ✓ In computers, audio is the sound system that comes with or can be added to a computer.
- ✓ An audio file is a record of captured sound that can be played back.
- ✓ Sound board, microphone speaker, MIDI devices, sound synthesizers, sound editor and audio mixer are some commonly used hardware devices for processing some audio media.
- ✓ Some desirable features of multimedia computer system are audio clips, audio file importing, and software support for high quality sound, recording and playback capabilities, text to speech conversion software and voice recognition software.

Images

- ✓ An image is an artifact that has a similar appearance to some subject.
- ✓ A digital image is a representation of a two-dimensional image using ones and zeros (binary).
- ✓ Computers store images in form of pixels map known as bitmap.
- ✓ A bitmap is simple matrix of tiny dots which forms an image on the computer screen.
- ✓ A Pixel (short for picture element) is the small dot on the screen.

Examples of images





8.3 Importing from external input devices

Questions

- (a) How can you create a digital image using a scanner or digital camera?

Answer

For digital camera, below is the process of creating a digital image:

- i. Connect the camera to your computer by using the camera's USB cable.
- ii. Turn on the camera.
- iii. In the AutoPlay dialog box that appears, click Import pictures and videos using Windows.
- iv . (Optional) To tag the pictures, type a tag name in the Tag these pictures (optional) box.

By default, the folder name includes the date the pictures and videos are imported and the tag name.

- v .Click Import. A new window opens and shows the imported pictures and videos.

- (b) **How can you record from a microphone?**

Answer

You can connect a microphone, portable music player, or other audio device to your computer by using one of the jacks on the front, back, or side of your computer. These jacks directly connect to your computer's sound card or sound processor

(c) How can you edit digitized images?

Answer

- 1) By Cropping. This is the removal of the outer parts of an image framing, subject matter and aspect ratio.
- 2) Enhancing pixels (brightness, sharpness, contrast etc).
- 3) Enhancing pixels is improving an image in lighting, difference in colour, having a clear picture and detail.
- 4) Colour Making the colour of a picture more pronoun
- 5) Saving images with appropriate file extensions
- 6) Edited images can be saved in the following formats:
 - a. TIFF
 - b. EPS
 - c. BITMAP
 - d. RW2
 - e. JPEG

8.4 Types of multimedia devices

Questions

(a) Give examples of multimedia devices:

Answer

- ✓ Microphones
- ✓ Speakers
- ✓ Digital Cameras
- ✓ Headphones.
- ✓ Computers
- ✓ DVD Players
- ✓ LCD Projector
- ✓ Video Games
- ✓ Home theaters
- ✓ TV

(b) State the features of a multimedia device:

Answer

- ✓ Very High Processing Power.
- ✓ Multimedia Capable File System
- ✓ Data Representations/File Formats that support multimedia
- ✓ Efficient and High Input / Output devices
- ✓ Special Operating Systems
- ✓ Storage and Memory

(c) What are the advantages and disadvantages of multimedia

Answer

Advantages of Multimedia

- Increases learning effectiveness.
- It improves personal communications.
- Is easy to use.
- Reduces training costs.
- It provides attention to students
- Multimedia is Entertaining as Well as Educational

Disadvantages of Multimedia

- It takes time to create and compile.
- The hardware and software are expensive
- Not always compatible
- Not always easy to configure