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Introduction to ICT

What is ICT?

ICT is an abbreviation that stands for **Information and Communication Technology**. It is a term which stresses the role of communications and computers as well as necessary software and hardware, which enable users to access, store, transmit and manipulate information. ICT is also the study of the development and usage of technology in the communication of information. Hence, ICT should be read as "Information Technology and Communication Technology" literally to make clear its meaning.

ICT education is basically our society's efforts to teach its current and emerging citizens valuable knowledge and skills around computing and communications devices, software that operates them, applications that run on them and systems that are built with them.

The term **Information Technology**, which is related to ICT, refers to an entire field that uses computers, networking, software, and other equipment to manage information electronically in a digital form.

Related Terminologies

Data

Data is anything in the form of numbers, text, images and sound that is suitable for processing and storage by a computer. It is the raw and unprocessed alphabets, numbers, sounds and pictures. Data is represented with the use of characters like alphabets (**Aa-Zz**), digits (**0-9**) or special characters (+, -, /, *, <, >, =, etc.).

Forms of data

- Text (alphabets, numbers & symbols) e.g. 6 + 4, book, etc.
- Images (Pictures)
- Motion pictures (Videos)
- Music (Audio)

Sources of data

- **Primary Source** is original research that is obtained through first hand investigation. It is a data collected by an organization for its own use. Primary data includes information collected from interviews, experiments, surveys, questionnaires, focus group discussions and measurement.
- **Secondary Source** is research that is widely available and obtained from another party. It is data collected outside an organization. Secondary data can be found in publications, journals, newspapers and internet.

Examples of data:

- The record of students in a school.
- The stock of goods in a supermarket.
- The amount of goods sold by a store.

- The number hours that an employee is supposed to work.

A collection of data organized for storage in a computer memory and designed for easy access by authorized users is known as **database**.

📌 **NB:** Data is meaningless unless fully processed. For example, $6 + 5$, is meaningless unless processed.

Information

Information is the processed data on which decisions and actions are based. It is organized or classified data which has some meaningful values for the receiver. For example, in our above data, $6 + 5$, the expected answer will be 6. Therefore, 6 is the information.

For decision to be meaningful, the processed data must qualify for the following characteristics:

- **Accuracy:** Information must be accurate. That is to say, it must be free from errors.
- **Reliable:** Information must be dependable, unfailing and trustworthy
- **Relevant:** Information must have logical connection to issues at hand.
- **Economical:** Information must not be expensive.
- **Completeness:** Information must be complete. That is to say, it must be full.
- **Timely:** Information must be available when required. In other words, it must not be a late.
- **Verifiable:** Information must be confirmable and approvable.
- **Meaningful:** Information must be easily understood.

Communication

Communication is the transfer or exchange of information between or among two or more persons via a media, such as the mobile phone, computer or a communication network. It is also the sending and/ or receiving information through a given media, such as telephone, computer or the internet.

Forms of communication

- **Verbal Communication:** Verbal communication is the use of sound and words to express yourself. It is spoken word, either face-to-face or through phone, voice chat, video conferencing or any other medium. It is also known as **Oral Communication**.
- **Written communication:** Written communication is any type of interaction that makes use of the written word. It includes traditional pen and paper letters and documents and anything else conveyed through written symbols such as language. E.g. letters, textbooks, newspapers, contracts, memos, and the like.
- **Electronic Communication:** E-communication refers to the transfer of writing, signals, data, sounds, images, signs or intelligence sent via an electronic device. Some examples of e-communication are email, text messages, social media messaging and image sharing.

Technology

Technology is any device or equipment that helps to make work easy e.g. computers, mobile phones, combine harvesters, etc. It is also the collection of techniques, skills, methods and processes used in the production of goods and services or in the accomplishment of objectives such as scientific investigation.

Importance of ICT

1. Online distance education helps students to attend classes and submit assignments at the comfort of their own home.
2. The internet is store house for all source of information. All that the student or teacher needs to do is to type in their questions or keyword, and every information on that subject will be displayed.
3. Virtual classrooms help students log on from home, school, etc, into a special computer-based classroom where information is presented to them just as in a real classroom.
4. Computer-aided teaching and learning helps students select subjects they want and also learn at their own pace.
5. School authorities can easily assess the information of teachers and students from their data base.
6. Students can also asses their WASSCE and BECE results online even before they become available at their school.
7. Making learning more interesting especially for hard-to-understand issues
8. Research and useful Information sharing – e.g. using Internet
9. Provide educational information (distance learning)
10. Access information on jobs/internships
11. To develop the interest of students in using ICT in learning other subjects.
12. Provide health information, including on sensitive issues
13. Creation of new employment opportunities
14. Enhance interaction with peers over long distances
15. Create entertainment opportunities (games, music, videos)
16. Bridging distances e.g. using e-mails, phone, video conferencing, etc.

ICT in Education

The usage of concepts in ICT in the education sector also varies on its application such as,

- ICT as a subject (i.e., computer studies)
- ICT as a tool to support traditional subjects (i.e., computer-based learning, presentation, research)
- ICT as an administrative tool (i.e., education management information systems/EMIS)
- ICT as a medium of knowledge exchange

Chapter 1 - Introduction to Computers

A computer is an electronic device operating under the control of instructions to accept data and performs arithmetic and logical operations to produce information.

Classification of Computers

- Generations
- Types
- Purpose (function)
- Capacity (size)

Classification by Generations

Generation in computer terminology is a term used to distinguish between varying hardware and software technologies which make up an entire computer system.

First Generation (1946-1959)

The computers of first generation used **Vacuum Tubes** as **circuitry** for **CPU (Central Processing Unit)**. These computers were too large. They produced a lot of heat. They also used a lot of electricity and were very expensive to acquire too. An example is the mainframe.

Second Generation (1959-1965)

In this generation **transistors** were used. These made the computers cheaper, consumed less power, more compact in size, more reliable and faster than the first generation.

Third Generation (1965-1971)

The computers of third generation used **Integrated Circuits (IC's)** in place of **transistors**. This development made computers smaller in size, reliable and efficient.

Fourth Generation (1971-1980)

The computers of fourth generation used **Very Large Scale Integrated (VLSI)** circuits. This made computers more powerful, compact, reliable and affordable. As a result, it gave rise to **Personal Computer (PC)** revolution. E.g. Desktop computers, laptop, notebook, etc.

Fifth Generation (1980-till date)

In the fifth generation, computers use **microprocessor chips** and **AI (Artificial Intelligence)** software. The three main functions of a microprocessor are fetch, decode and execute.



NB: **AI** is an emerging branch in computer science, which interprets means and method of making computers think like human beings. E.g. Robots, game consoles.

Classification by Types

- Analog computers
- Digital computers
- Hybrid computers

Analog computers

Analog computers are single purpose computers that operate data in the form of physical quantity such as temperature, speed, voltage, weight, pressure, distance and light. Examples of analog computers are:

- **Thermometer:** for the measuring of temperature.
- **Speedometer:** for the measuring of speed of moving objects such as cars, bikes, aeroplanes, etc.
- **Rain Gauge:** for the measuring of rainfall intensity.
- **Hygrometer:** for the measuring of atmospheric pressure.



Others are:

- Multimeter, Hydrometer, stenometer, manometer, voltmeter, etc.

Digital Computers

A computer that performs calculations and logical operations with quantities represented as digits, usually in the binary number system (**zeros (0s)** and **ones (1s).**)

Kinds of Digital Computers

- Mainframe Computers
- Super Computers
- Mini Computers
- Micro Computers

Mainframe Computers

Mainframe is very large in size and is an expensive computer capable of supporting hundreds or even thousands of users simultaneously.

Mainframe supports concurrent or simultaneous execution of programs. Mainframe computers are high speed and large storage capacity computers.



Mainframe Computer

Super Computers

Supercomputers are one of the fastest computers currently available. Supercomputers are very expensive and are employed for specialized applications that require immense amount of mathematical calculations. For example, weather forecasting, scientific simulations, (animated) graphics, electronic design, etc.



Super Computers

Mini Computers

Mini computers are computers used as **servers** in small networks to control the activities of micro-computers in a laboratory or Internet café. Mini computers are multi-user computer systems which are capable of supporting hundreds of users simultaneously.



Mini Computer

Micro Computers

Micro computers can be defined as small, relatively inexpensive computer designed for an individual user. They are based on the **microprocessor** technology that enables manufacturers to put an entire **CPU** on one **chip**. They are the **Personal computers (PCs)** used by individuals in homes, schools and offices. E.g. Compaq, Dell, Gateway, Acer, Toshiba, Hewlett Packard (HP), International Business Machine (IBM) Apple Macintosh, etc.



Microcomputer- Desktop

Although micro computers are designed as single-user systems, these systems are normally linked together to form a **network**.

Classification by Purpose

There are two main purposes of computers:

- **General Purpose Computers:** They are used to solve a wider range of problems. It is normally used for tasks such as budgeting, payroll, banking, scientific, analysis, watching movies and solving mathematics problems.
- **Special Purpose Computers:** These kinds of computer are designed to perform particular tasks or restricted classes of problems. They are employed in manufacturing and designing in a form of robots.

Classification by Capacity

The classification of computers according to capacity (size) resulted in computers been named Mainframe, Super, Mini and Micro - Computers.

Categories of Computers

- Desktop Computers
- Portable Computers
- Handheld Computers

Desktop Computers are computers made up of separate components such as keyboard, mouse, system unit and monitor, and are designed to be used at the desk or table. They are generally bulky. Micro Computers are examples of desktop computers.

Portable Computers are light weight mobile computers. They are a combination of keyboard, mouse, system unit and monitor in one whole unit. The two main types of portable computers are Laptops and Notebooks.



Laptop

☒ **Laptops** and **notebooks** may be similar in design but notebooks are smaller than laptops in size and in weight.

Handheld computers are computers that fit the palm and can be put into the pocket. They are also called palmtop computers or Pocket PC. The screens of handheld computers are touch sensitive and allow the users to use the fingers or stylus to operate them. E.g. iPads, tablets, phablets, smart phones and Personal Digital Computers (PDAs).



Examples of Handheld Computers

Hybrid Computers

A combination of computers those are capable of inputting and outputting in both digital and analog signals. They perform both analog and digital functions. E.g. Automated Teller Machines (ATMs), Money Counting Machines (MCMs), Point of Sale Terminals (PSTs), etc.



ATM and a Money Counting Machine

Characteristics of Computers

- **Speed:** Computers are very fast in performing work.
- **Accuracy:** Computers processed data with high degree of correctness.
- **Economy:** Computers reduce Labour cost in business.
- **Reliability:** Computers are reliable and consistent when used to do work.
- **Versatility:** Computers have the capacity to perform completely different type of work. That is, computers can adapt to all professions and environment.
- **Communication:** Computers are capable of sending and receiving information.
- **Diligence:** Unlike human beings, a computer is free from boredom, tiredness, lack of concentration, etc.
- **Storage:** Computers can store information on hard drive, pen drive, memory card, etc.
- **No Feeling:** Computers do not have emotions.
- **No IQ:** Computer is a dumb machine and it cannot do any work without instruction from the user.

Factors that Affect Computer Performance

- Arguably the single most important factor that determines a computer's performance is the **speed** of its CPU. The speed of the CPU is measured in **megahertz (MHz)** and **gigahertz (GHz)**. The faster the CPU, the faster the computer.
- The amount of **RAM** or memory is another very important factor in computer's performance. Generally, the more RAM a computer has the better its performance.
- The speed of the video card.
- The speed of the hard disk.
- Free space.
- The number of programs running at the same time.

Importance of Computers

Computers are now part of our lives, they play important role in business, education, healthcare etc.

- **Education:** Computers provide an invaluable tool in education, primarily in the acquisition and analysis of data used for research. Fields such as science, writing composition, mathematics and history all benefit from access to the Internet. It provides information. In short, for learning and research work.
- **Healthcare:** Diseases can be easily diagnosed with the help of computers and can also know about its cure.
- **Business and Banking:** Almost all banks and businesses are using computers to keep the record of all the money transaction and other calculations. Also, for advertisement.
- **Communication:** For sharing ideas through the internet and email.
- **Weather Predictions:** Weather predictions are also possible by the experts using supercomputers.
- **Daily Life:** We operate washing machines, microwave oven and many other products using software.
- For performing **complex calculation** quickly.

- For **entertainment**: E.g. playing games and watching movies.
- Computer is used for **keeping records**.

So, we can say that today computers are playing very important role in our lives. Now is the time when we cannot imagine the world without computers. So therefore, it has become necessary for everyone to have the basic knowledge about computers.

Limitations of a Computer

It is obvious that the computer has a variety of capabilities. Similarly, this man-made machine has some its own limitations as well. Such limitations are given below:

- The computer can do only what you tell it to do- you cannot expect the computer give you something which you did not ask.
- It cannot generate information on its own: the computer will work only if you operate it and give the instructions. It cannot give you information unless you feed it required data.
- It will give wrong information if you feed it with wrong data- the computer cannot identify what the correct data and what the wrong data are.
- It cannot correct wrong instruction- if you give the computer wrong instruction, it will not be able to do anything to rectify it. The only thing it can do is to stop functioning till you correct the mistake.

Chapter 2 - Parts of Personal Computers

Computers have two main parts. These are:

- Hardware
- Software

Hardware

Hardware is the physical and tangible components of a computer. It is the part of the computer that can be seen and touched. The term hardware is sometimes substituted with **peripherals**.

Main Hardware Components of computer

The hardware has four main components. These are:

- System Unit
- Monitor
- Keyboard
- Mouse



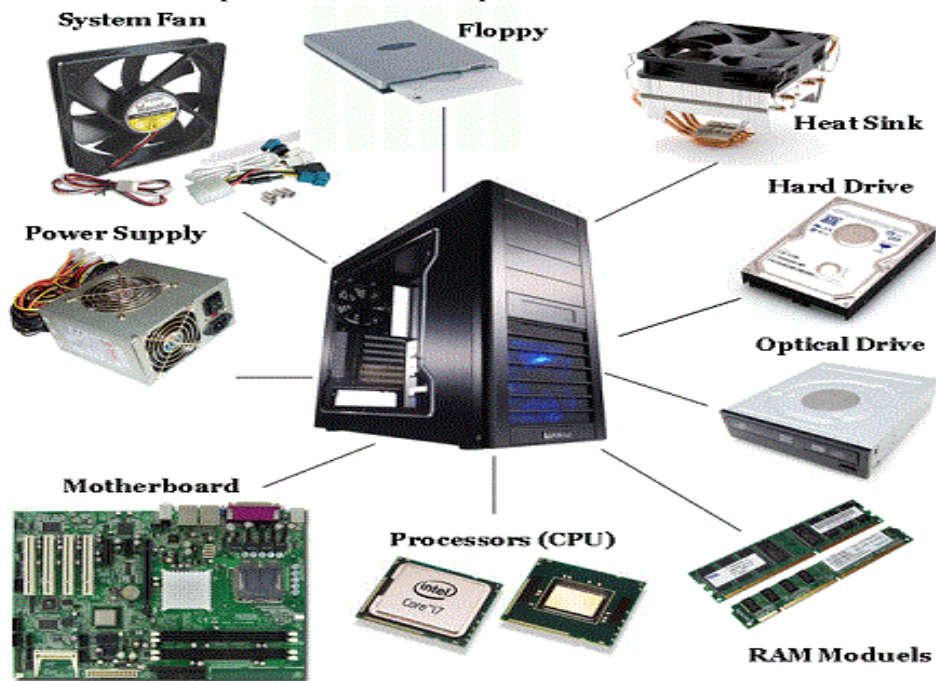
Components of computer

System Unit

The system unit is the plastic or metallic box that sits under your monitor or desk and is covered with slots, buttons and lights. It's the component of the computer that houses the motherboard, central processing unit (CPU) and the power supply unit. It's the control unit of the computer.

Anything outside of and connected to the system unit is called a **peripheral**. A **peripheral** is a device that extend their services to enhance the performance of the computer. You can add dozens of peripherals and accessories to make computers more useful and fun. **Common** peripherals include printers, scanners, external hard drives, CD-ROM drives, and digital cameras. Many peripherals are considered to be input or output devices.

Inside the system unit are these parts illustrated in the picture below:



Labeled System Unit

NB:

- ✓ **Motherboard:** The motherboard is the main circuit board in the computer that connects the parts of the computer. It's a sheet of plastic that holds the **circuitry** to connect the various components of a computer system.
- ✓ **Central Processing Unit (CPU):** it is the primary hardware device that interprets and runs the commands you give to a computer. The CPU is the brain of the computer. It does all the work: it calculates, it processes, it keeps things running smoothly. A CPU's speed is measured in megahertz (MHz) and gigahertz (GHz). Common CPUs include: Intel Pentium III, Intel Pentium 4, etc.
- ✓ **The CPU Speed** is the rate at which at which the CPU can perform a task.
- ✓ **Arithmetic Logic Unit (ALU)** is the part of the central processing unit responsible for performing all logical operations.



Ports at the back of the System Unit

Monitor

Monitor is the output device that displays the information on the computer to the user. It is a device that converts computer output into displayed text and graphics. The monitor is also called the **screen** or **Visual Display Unit (VDU)**. The monitor is like a television (TV).

Types of Monitors

1. **Cathode Ray Tube (CRT):** Cathode Ray Tube (CRT) monitor is a type of monitor that looks like the old type TV which is very heavy with a long back.



Cathode Ray Tube (CRT)

2. **Flat Panel Display:** Flat Panel Display is also called Liquid Crystal Display (LCD)



Flat Panel Display

NB:

- Most monitors are coloured (display more than one colour). A monitor which displays output only in one colour is called **monochrome**.
- A pixel is the smallest unit that can be displayed on the screen.

Keyboard

The computer keyboard is a wide rectangular object that is equipped with buttons on which there are **letters** (alphabets), **numbers** and other **characters** and **symbols**. The keyboard is like a **typewriter** and is available in the following models:

- Standard Model which has **83** or **84** keys
- Traditional Model which has **101** keys
- Enhance Model which also has **104** keys and more.
- Ergonomic Model

The keyboard is sometimes called **QWERTY** Keyboard. The name QWERTY is derived from the first six letters in the top- left alphabet row.



QWERTY Keyboard

NB: An ergonomic keyboard is a computer keyboard designed with ergonomic considerations to minimize muscle strain and a host of related problems.

Parts of a Keyboard

- Function keys
 - Typing (Alphanumeric) keys
 - Modifier (Control) and Toggle keys
 - Arrow (Navigation) keys
 - Numeric keys
 - Editing Keys
- Etc.



	Function Keys		Editing Keys
	Alpha-Numeric Keys		Arrow (Navigation) Keys
	Control (System) Keys		Numeric Keys

Parts of a Keyboard

Function Keys

Function keys are keys programmed to perform specific tasks, commands or operations. Function keys are labeled **F1**, **F2**, **F3**, **F4**, **F5**, and so on, up to **F12**. Function keys act as shortcut; perform certain functions like refreshing the computer. **F5** and **F1** are defaults for **refresh** and **help** respectively.

Alphanumeric (Typing) Keys

Alphanumeric keys are also known as **typing keys**. It consists of alphabet and numeric keys.

- **Alphabet Keys:** Alphabet keys include letters of the alphabets generally laid out in the same pattern as that of the typewriter. They comprise the alphabets **Aa - Zz**.
- **Numeric Keys:** Numeric Keys are handy for entering numbers quickly. The keys are grouped together in a block like a conventional calculator, which is named Numeric Keypad. It comprises the numbers, **0 - 9**.

Modifier (Control) Keys

Modifier keys are special keys on a keyboard that temporarily modifies the normal action of another key when pressed together. By themselves, most modifier keys usually do nothing when pressed. Modifier keys are also called **Control Keys**. E.g. **Shift**, **Alt** or **Ctrl** keys.

Arrow (Navigation) Keys

Navigation keys are keys used to move around in documents, webpages and in editing text. E.g. Arrow keys, Home key, Page Up key, Page Down key, Delete key, Insert key, etc.

Toggle Keys

Toggle Key is a key which is designed for people who have vision impairment or cognitive disabilities. When Toggle Keys are turned on, computer will provide sound cues when the locking keys (Caps Lock, Num Lock or Scroll Lock) are pressed.

Mouse

The **mouse** is a handheld pointing device that allows you to control the actions of the **cursor**. It is a funny looking object that frankly looks like a real mouse. Originally, computers came with keyboard without mouse. But in 1988, Dong Engelhardt invented the mouse.

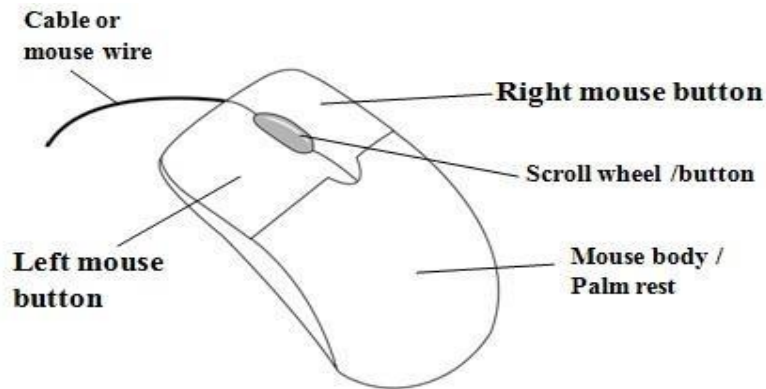
Types of Mice

- **The Standard Mouse:** The standard mouse has two buttons, namely, left click and right click buttons and a roller ball on the underside. Others have additional button called the **Scroll Wheel** for scrolling through pages and menus. Standard Mouse is also called **Mechanical Mouse**.
- **Optical Mouse:** Optical mouse is one of the latest innovations which operate by using an **infrared sensor**. You can identify an optical mouse by the tell-tale red glow emanating from its underside.
- **Cordless mouse:** A cordless mouse, also called a **wireless mouse**, is a mouse that connects to a computer without the use of wires. Instead, the mouse uses wireless technologies, like **Bluetooth** or **infrared radio waves**. Usually, a **USB receiver** is plugged into the computer and receives signals from the cordless mouse. Cordless mice need batteries to work.



Parts of the Mouse

- Left click button or primary button
- Right click button or secondary button
- Scroll wheel



Parts of a Mouse

NB: Underneath the mouse is either a **roller ball** or an **infrared**, depending on the type of mouse.

Other components of the computer hardware are printers. **Scanners, microphones, joysticks, trackballs, light pen**, etc.

Hard Drive Maintenance

- **Hard Drive Repair and Fragmentation:** Over time, small errors and fragmentation can degrade the performance of a hard drive. These problems can be corrected by a hard drive utility program.
- **Hard Drive Backups:** Should be performed to give you an extra copy of your files if your hard drive becomes damaged.
- **Virus Protection:** Software should be installed on every computer to protect against malicious computer viruses.
- **Compression:** Increases the space on a hard drive by compressing or squeezing together, its files.

Software

Software is the collection of instructions that enable the user to interact with a computer, its hardware or perform tasks. In other words, it is the set of instructions that tells the computer how to respond to the users of computers and control the hardware.

Types of Software

- System Software
- Application Software

System Software

System software is the software / program / set of instructions that is used to control and coordinate the operations of the computer. It is the set of instructions that controls and coordinate how the computer operates and allocates hardware resources. It is also a collection of programs designed to operate, control and extend the processing capabilities of the computer.

Types of System Software

- Operating System
- System Utilities
- Device Drivers

Operating System (OS)

An operating system is a software program that loads automatically and controls just about everything on your computer.

Here're what an operating system does:

- **Controls Your Computer's Hardware:** Windows controls the different devices of your computer system. It's what makes your printer print, what makes graphics and text appear on your monitor, and what makes your mouse point and click.
- **Runs Your Computer's Programs:** An operating system is what runs all your programs. Without an operating system, your word processor, Web browser (Internet), and games wouldn't work. An operating system lets your programs talk to your hardware, so, for example, your word processor can print things to the printer.
- **Organizes Files:** Operating system stores, retrieves, and copies information in files and folders on your computer'.
- **Managing multi programming.**
- **Managing resources of the computer efficiently.**
- Starting up the computer.
- Opening, executing and running applications.
- Formatting disks.
- Backing up the contents of a hard disk.

Examples of OS for Computers:

- MS-DOS, Microsoft Windows OS, Macintosh (Mac) OS, Linux OS, Unix OS, Chromium OS, Solaris, etc.

Examples of OS for Handheld Devices:

- Symbian, Android, iOS, Window CE, etc.



NB: MS- DOS is a text-based operating system that stands for **Microsoft Disk Operating System**. It was one of the earliest PC operating systems that displayed boring lines of text on the screen instead of icons and pictures. You performed tasks in MS-DOS by typing text commands.

Utility Software

Utility Software is system software designed to help analyze, configure, optimize or maintain the computer, its devices or its software. E.g. Antivirus Software, Backup Software, Data Compression Software, etc.

Here're what a Utility Software does:

- Viewing files
- Compressing files
- Diagnosing problems
- Scanning disks
- Defragmenting disks
- Uninstalling software
- Backing up files and disks
- Checking for viruses
- Displaying screen savers

Device Drivers

A device driver is software that enables the operating system to communicate with the hardware components of the computer. It links devices to the operating system.

Importance of System Software

- Operating system software controls the basic input and output devices.
- For communication among people through the internet.
- The operating system helps us to start or boot our computer.

Application Software

Application software is the software / program / set of instructions that is used by the user to perform specific tasks or operations on the computer such as creating a document, spreadsheet, sending emails, etc. Application software is mostly and simply called **application**. Examples of application software:

- Word Processing Programs e.g. MS-Word
 - Browsers e.g. Firefox, Chrome, Internet Explorer, Opera, etc.
 - Games e.g. Zuma, Mortal Combat, etc.
 - Media players e.g. VLC
- Etc.

How do you get software?

1. Purchase Software: Software can be purchased at a retail computer store or online and comes in a box containing all the discs (CD, DVD or Blu-ray), manuals, warranty, and other documentation.


2.Free software: Free software is software that does not require you to buy it before using it. The following are the categories of free software:

- **Shareware:** Shareware is software that gives you a few days to try the software after which you'll be asked to buy the software, enter a code or to register the product before you can continue to use it.
- **Freeware:** Freeware is free software that never requires payment, as long as it is not modified.
- **Open Source Software:** Open source software is completely free software that does not require payment and allows you to modify the Source Code (program) or view how it was made.

Software whether purchased or free can be downloaded to a computer over the Internet. Once downloaded, setup files are run to start the installation process on the computer.

Importance of Application Software

- Application software enables users to perform a specific task in our everyday activities.
- To facilitate communications: For communication among people through the internet.
- It is used for keeping records by storing the file for future use.
- As a productivity/business tool: Application software is used accounting purpose that is, business and financial
- packages.
- To assist with graphics and multimedia projects.
- To support household activities, for personal business, or for education
- For advertisement on radio and television.

 **NB: Firmware** is sometimes described as a type of software. Firmware is programmed information that is responsible for the operation of certain hardware.

Relationship between Hardware and Software

Hardware and software are mutually dependent on each other. Both of them must work together to make a computer produce a useful output. Software cannot be utilized without supporting hardware.

- Hardware without set of programs to operate upon cannot be utilized and is useless.
- To get a particular job done on the computer, relevant software should be loaded into the hardware.
- Hardware is a one-time expense. Software development is very expensive and is a continuing expense.
- Different software applications can be loaded on hardware to run different jobs.
- Software acts as an interface between the user and the hardware.

If hardware is the '**heart**' of a computer system, then software is its '**soul**'. Both are complimentary to each other.

Differences between Hardware and software

- Hardware is tangible (i.e. can be seen and touched) but software is intangible (i.e. cannot be seen and touched)
- Hardware cannot be affected by virus but software can be affected by virus

- Hardware cannot be transferred from one place to another but software can be transferred electronically from one place to another via networks
- Hardware cannot be duplicated (backed up) but software can be duplicated (backed up)
- Hardware can only be replaced when damaged but software can be reinstalled when there's a backup.

Summary

- **Hardware:** A computer item you can physically see or touch.
- A typical computer hardware includes the system unit, monitor, keyboard and mouse.
- **Software:** A computer program that tells computer hardware how to operate.
- An operating system loads automatically and controls just about everything on your computer.
- An application program helps you accomplish a certain task such as writing a letter, browsing the Internet, or playing a game.
- A programming language is a vocabulary and set of grammatical rules for instructing a computer to perform specific tasks.
- Main components visible from the outside of the system unit may include the floppy drive, CD-ROM or DVD.
- Main components inside the system unit may include the motherboard, CPU (Central Processing Unit), Random Access Memory (RAM), ROM-BIOS, expansion slots and cards, and PCMCIA cards in laptops.
- Ports on the back of a computer include: keyboard, mouse, serial or COM, printer or parallel, USB, video or monitor, line in, line out, microphone, joystick or game, phone or modem, Ethernet or network, etc.
- Computer performance is determined by CPU speed, amount of memory or RAM, the type and speed of the video card, the hard disk speed, free space, and fragmentation, and the number of programs running at the same time.

Chapter 3 - Information (Data) Processing Cycle

What is Information Processing Cycle?

Information Processing Cycle is a sequence of events that describe how data is processed, transformed or changed into information. It refers to the series of identifiable steps the computer goes through to accept and process data into information, store the information for future use, and/or share it with others. It is likened to the milling of **corn** into **corn dough** as shown in the picture below:



Grinding [Milling] of Corn into Corn Dough

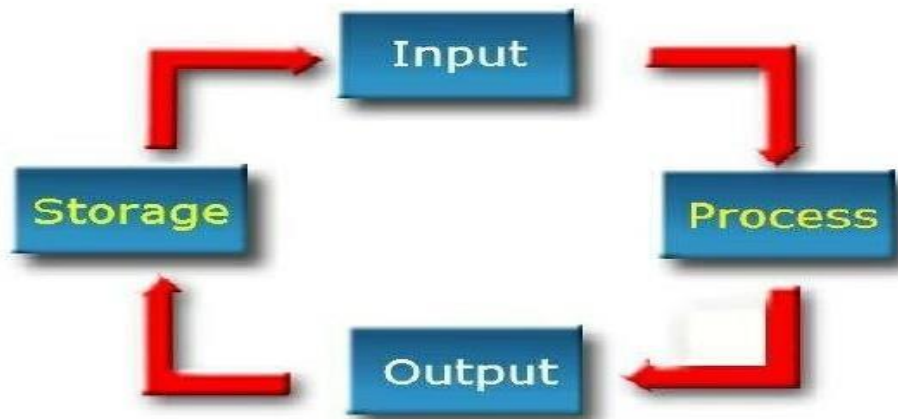
■ **Grinding of Corn into Dough Picture** – The Corn (**Data**) is poured into a cone shaped container on top while the man (**User**) seated by the Grinding Machine gradually feeds the grinder (**Processor**) with the grains (**Input**). The Dough (**Output**) will be received by a container (**Storage**) after it has been processed.

In short, the corn (**Input**) is grinded (**Processed**) into Dough (**Output**) and kept in a container (**Storage**). Remember that, all these were done with the help of an operator (**User**).

Stages of Information Processing Cycle

The stages of the Information Processing Cycle are also the **basic operations** performed by the computer. These stages or operations are normally four (4). These are:

- Input
- Processing
- Output
- Storage



Information Processing Cycle

☛ **NB:** A fifth stage known as **distribution** or **communication** is sometimes added.

Input

Input is the first stage of the cycle. Input is any data or instruction you enter into a computer. Data could be in the form of text, pictures, music, pictures, etc. this stage can be broken down into three (3) stages:

1. Acquisition (Collection) of Data
2. Entry of Data
3. Validation of Data

After the data has been acquired, it is entered into the system upon which the data is validated so that correct results are given at the end of the cycle. **Input devices** are used in this stage.

Input Devices

Input device is a device by which data is fed into the computer. It is any hardware device that sends data to a computer, allowing interaction and control the computer.

- **Examples of input device are;** Keyboard, Mouse, Microphone, Camera / Webcam, Scanner, Light Pen, Touchscreen (Finger), Stylus, Digitizer, Barcode Code Reader, Trackball, Biometrics (Finger Scanner), Joy Stick, etc.



Input Devices

Process

Process is the stage where the computer performs some operations on the data entered to make the data usable. At this stage, the operations transform the data into information. Processing devices are used to perform the operations.

Processing Devices

A processing is a hardware device that is responsible for transforming inputs (data) into outputs (information).

- **Examples of Processing Devices:** Central Processing Unit (CPU), Graphic Processing Unit (GPU), Motherboard, Network Card, Sound Card, TV Card, modem, etc.

Central Processing Unit (CPU)

The **Central Processing Unit (CPU)** is a device that interprets and runs the commands that you give to the computer. It is the control unit of a computer. The CPU is the main device that does all processing. Hence referred to as the **processor**. The CPU requires a lot of memory to enable it to function properly.



Central Processing Unit (CPU)

Components of the CPU

- **Arithmetic and Logic Unit (ALU):** An Arithmetic Logic Unit (ALU) is a combinational digital electronic circuit that performs **arithmetic** and bitwise operations on integer binary numbers.
- **Control Unit:** The control unit (CU) is a component of a computer's central processing **unit** (CPU) that directs the operation of the processor. It tells the computer's memory, arithmetic/logic **unit** and input and output devices how to respond to a program's instructions.
- **Registers:** Register is one of a small set of data holding places that are part of the computer processor. A **register** may hold an instruction, a storage address, or any kind of data.
- **Memory Unit:** Memory unit is the amount of data that can be stored in the storage unit.

■ **NB: Process** is the interpretation and manipulation performed on data and instructions to produce a result (information).

Output

Output is any data that has been processed into information. Output is the stage where the processed information is transmitted to the user. The computer at this stage will display the information to the user on the monitor in the form of a report, which may be printed out. The output can also be given in the form of audio and video as well. **Output devices** are needed to perform this action.

Output Devices

Output device is a device by which processed data (information) is obtained from the computer. It is any peripheral that receives data or information from a computer for display, projection or physical reproduction.

- **Examples of Output Devices:** Monitor, Printer, Speaker, Headphone, Projector, Television (TV), etc.



Storage

This is an area in or an attachment to a computer that can hold data and information for future use. After the data has been processed and the output displayed to the user, the output can also be stored.

Storing the information serves purpose, which is, you may not have to repeat the entire cycle again. Often the storage is done in both **digital (softcopy)** and **hardcopy** formats. At the same time, backup of the digital format is also maintained which can be retrieved in case of system crash. The devices used in this stage are called **storage devices**.

Storage Media / Devices

A storage media is any hardware capable of holding information either temporarily or permanently and a storage device is a device that read and write the information from the storage media.

- **Examples of Storage Media:** Hard Disk (HD), Floppy Disk (FD), CD / DVD ROM, Pen drive, Memory Card, Tape Cassette, Zip Diskette, etc.



Storage Devices

Distribution

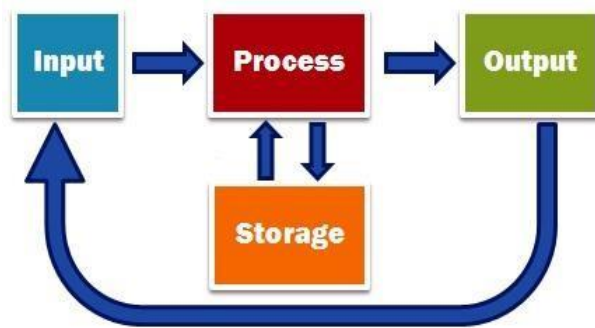
Distribution is the stage where information stored can be distributed or sent to another place or someone through email messaging, fax messaging, post office mailing, etc. This is termed **communication** and some people call this stage **Communication**. The devices used in this stage are called **communication devices**.

Communication Devices:

Communication devices are devices that are used to transfer (send and receive) information.

- **Examples of communication devices** are mobile phones, computers, modem, router, fax machine, satellite, etc.

NB: Information Processing Cycle is not always a cycle, that is to say, it is not always that information has to move from input to processing, then to output and then to storage; and then to data stage for the process to continue.



Information Processing Cycle

Chapter 4 - Keyboard and Mouse Skills

Keyboard Skills (Keyboarding)

Whether you are writing alphabets or numeric data, you need a keyboard. The keyboard is the main way to enter data or information into the computer.

NB: Typing is the act of pressing the keys of the keyboard with the fingers to send alphabets, numbers and symbols to the computer.

Arrangement of Keys on the Keyboard

To use the keyboard, you need to know how the keys are arranged on the keyboard. As you learnt earlier, the keys on the keyboard consist of alphabets (letters), numbers and other characters including special keys.

The typing keys are arranged in three rows, namely:



Upper Row Keys (URKs)



Home Row Keys (HRKs)



Bottom Row Keys (BRKs)

Learning to Type

Learning to type will take a lot of self-discipline and patience. It is important that you do not get frustrated. You need to view the process as a skill you are attempting to master. It takes practice to achieve good technique. It is also important that you establish the foundation of having the correct technique rather than speed. Speed and accuracy are results of establishing a good technique. Here are some tips to typing:

- Memorize the letters by not looking at your hands while typing.
- Good posture helps your form. Keep your feet flat on floor, hips touching the back of chair, back straight, and sit up tall.

- Additionally, the way you position your arms, wrist, and fingers will help deter any discomfort from typing. Remember to keep your fingers curved, arms close to body, and wrists straight and not touching keyboard.
- Strike the keys with the proper finger, and then return those fingers to home row keys.

How to Position Fingers on the HRKs

As a beginner in typing, it is very important to position your fingers on the **middle row** of your keyboard which is known as **Home Keys**. Start with your left hand placed on the keyboard as shown below with your **little finger on key 'A', ring finger on 'S', middle finger on 'D' and index finger on 'F'** respectively.

With your **right hand**, place your **index finger on 'J', middle finger on 'K', ring finger on 'L' and little finger on the next key**. Your thumb (s) must rest on the **spacebar**. Press the **enter key** with the **little finger** of your right hand. At this position, stretch fingers upward to type the **URKs** and downward to type the **BRKs**. Always put your fingers back on the **Home Keys** after pressing keys on the **Upper and Lower Rows**.



QWERTY Keyboard Picture – Look at the colour code as shown above. Pay attention to how the hands are positioned. Keys of one colour are typed by the corresponding home row key finger. For example, the left hand's little finger is above the home row key “A” and handles all the keys of the same color: **A, Q, 1, Z, Shift, Tab, Caps, and `** (the back-quote key).

Improving Your Typing Speed

Typing is an art that requires constant improvement. The best way to improve your typing speed is by using a typing software application.

- **Examples of typing software applications are:** Typing Tutor, Mavis Beacon, Ktouch, Typing Master Pro., Mac typing software, Rapid Typing, TypeSmart typing tutor, etc.

How to Use Mavis Beacon Typing Program

1. Open Mavis Beacon Typing Program by double clicking on the Mavis Beacon icon.

2. Click on “**Run**”.
3. If this is your first time, **Sign In** by typing your first and last name and selecting your age group. If it’s not your first time, click on your name on the **Class List**.
4. Click on “**Enter Classroom**”.

In the Classroom

1. Follow the directions that Mavis gives you on the screen.
2. Use the head phones to hear both music and the praise that Mavis gives.
3. To move to the lesson or the next set of instructions, either press “Enter” on the keyboard or click on “Start Lesson” on the screen.
4. Move at your own pace.
5. Remember, to type well, you need to work on both your speed and your accuracy.

Finishing

1. Before you sign off, print a certificate to keep a record of how well you did:
 - Using the mouse, click on “**Info**” at the bottom of the screen. A menu will appear.
 - Click on “**Progress**” in this new menu box.
 - Click on “**Print Certificate**” at the bottom of the Progress box.
 - Pick up your certificate at the printer.
2. Close the program by clicking “**Quit**” at the bottom of the Mavis Beacon screen.
3. When it asks you if you really want to quit, select “**Yes.**”



Mavis Beacon Typing Program

NB: **Typing Speed** is the measure of correct number of words that a typist can type in one minute. The unit for measuring typing speed is **Word per Minute (WPM)**.

Mouse Skills

A mouse is a palm-sized device used to control the movement of an object on the computer screen called a **cursor** or **pointer**. The cursor (on the screen) acts as our virtual finger inside the computer screen, allowing us to press buttons, to select items from menus, and to interact with other objects on the computer screen. We move the cursor or pointer on the screen by moving the mouse (in our palm) over a flat surface, such as a **mouse pad** or a clear part of a desk.

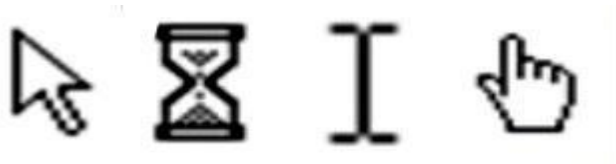
NB: A **mouse pad** is a special surface, usually made of rubber, plastic or fabric for placing and moving a computer mouse. The mouse pad enhances speed, precision and comfort for the user. It also reduces collection of dust or dirt under the mouse.

Mouse Buttons (Parts)

The typical mouse will have two buttons, though some may have additional buttons or a wheel. To interact with objects on the screen, we move the cursor or pointer over the object and click a button (usually the left button) on the mouse.

Cursor

The cursor is an **arrow** on the screen that moves as you move the mouse. The cursor, though majority of the time it is an arrow, but sometimes it can be a **busy cursor**, an **I-cursor**, a **pointing finger**, or a **blinking vertical line**. The mouse controls the motion of the cursor.



Types of Cursors

The mouse turns movements of the hand backward, forward, left and right into equivalent electronic signals that in turn move the pointer. **Clicking** or **hovering** can select files, programs or actions (operations) from a list of names, through small images called icons.

Positioning the Mouse

The mouse rests on the mouse pad (or desk) next to the keyboard with the cord pointing away from you toward the back of the desk. Right-handed people usually position the mouse on the right side of the keyboard. Left-handed people sometimes keep this position but may be more comfortable moving the mouse to the left side of the keyboard.

Holding the Mouse

Rest your wrist on the mouse pad or desk, with the palm of your hand resting on the back portion of the mouse. Hold the sides of the mouse with your thumb and last two fingers, keeping your wrist on the surface of the desk or mouse pad. Place your index finger on the left button, middle finger on the right button.

Moving the Mouse

Slide the mouse around on the mouse pad or desk. Watch the screen to see what happens to the cursor. If you run out of room to move the mouse, you can lift it up and set it down a few inches over as needed. The cursor will not move while the mouse is in the air.

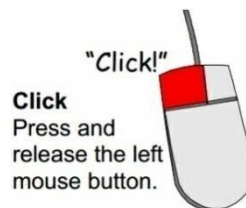
Operations of the Mouse

Different ways of operating the mouse causes specific actions to happen on the **Graphic User Interface (GUI)**. E.g. click, drag, drop, point and select.

1. Clicking the Mouse: Clicking the mouse button is one way of sending commands to the computer (another is using the keyboard). Click simply means pressing and releasing any button of a mouse.

Below are the various ways of clicking the mouse:

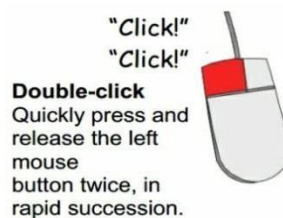
- **Left Click** or **clicking** is the pressing and releasing of the left mouse button once without moving the mouse. It is usually performed to select or deselect an object on the computer screen. The secret is to keep your hand relaxed on the mouse as you press down and release the button. The left button is the main button and the most important button of the mouse. Left click is also called single click. Sometimes it is just refer to us **click**.



- **Right Click** means pressing and releasing the right button of the mouse. This normally brings out a menu with different options depending on the site or application.



- **Double Click** means pressing and releasing the left button twice in quick successions (i.e. simultaneously). In other words, it's the act of pressing the mouse button twice quickly without moving the mouse.



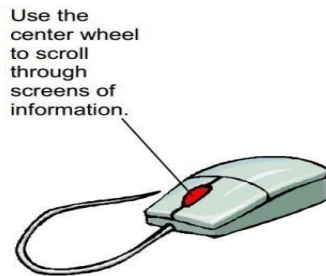
2. Selecting means pressing the left button on a file, folder, icon or program. Text can also be selected by highlighting.

3. Highlighting is the process of placing the mouse cursor at one end of a text or object, hold down the left button and drag to the end of the text or object.

4. Dragging means pressing and holding the left button on a selected item while moving the mouse.

5. Pointing means moving the mouse pointer until it rest on item of your choice.

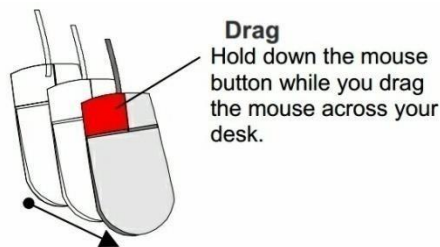
6. Scrolling means moving the scroll wheel forward and backward in order to display hidden parts of a document or a **Pop-Up Menu**. It is the process or act of moving different portions of a document, webpage or menus on the screen in order to view different parts of them.



7. Dragging and Dropping is a way to move certain objects (e.g. icons, files, folders, etc.) on the screen of a computer.

To move (drag and drop) an object:

1. Place the cursor over it.
2. Press and hold down the left mouse button.
3. Then move the mouse while still holding down the left mouse button.
4. When you have "**dragged**" the object to the location you want, let go of the mouse button.



NB: A screen/tool tip is a small informational text box / pop-up that appears when a mouse pointer is moved over an icon / button / link. It provides further information on the item or control being pointed to.

Becoming Comfortable Using a Mouse: The Solitaire

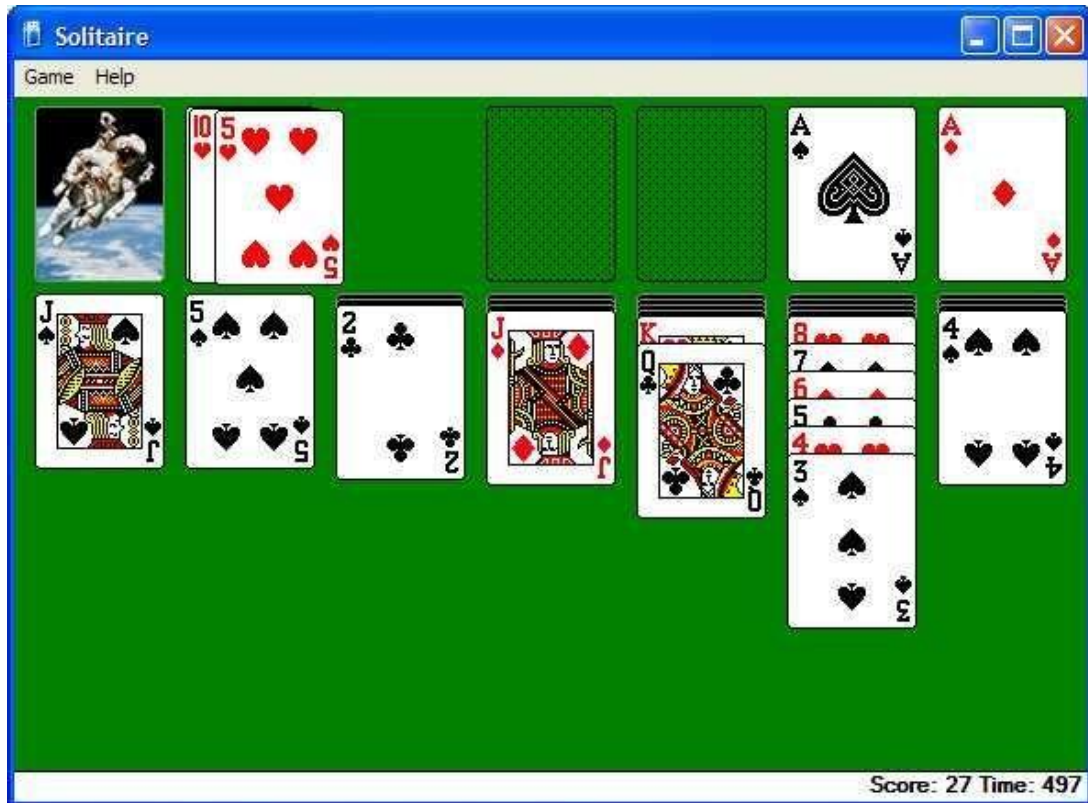
It's important to become comfortable with the mouse. To do this, we'll use a computer game called Solitaire. This will probably be the most entertaining lesson in the book, because your assignment is to master dragging and dropping by playing the game!

Access Solitaire by clicking on:

Start → **All Programs** → **Accessories** → **Games** → and then **Solitaire**.




Launching Solitaire



Launching and using Solitaire

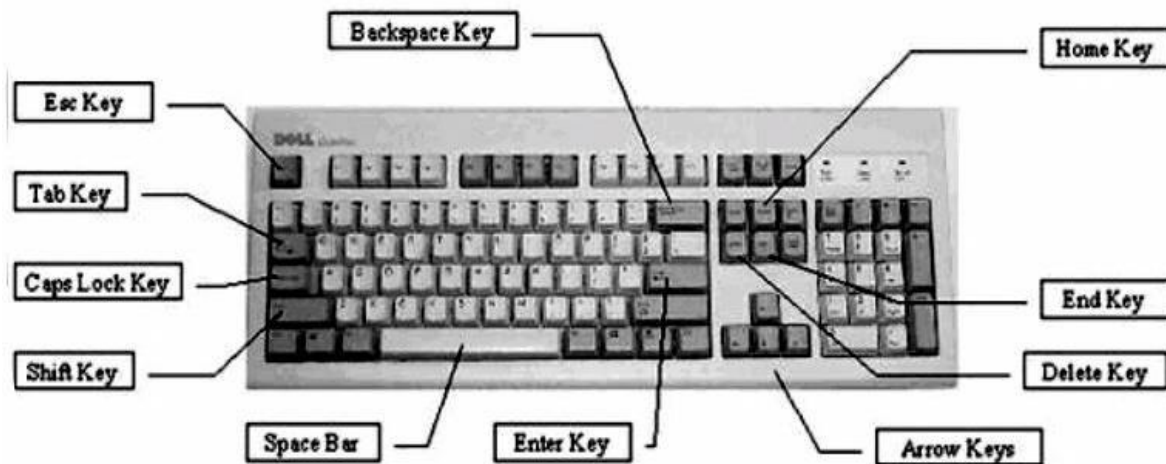
Summary

- **Point:** Move the mouse so that the pointer () is over the object.
- **Click:** Point to the object and press and release the left mouse button.
- **Double-click:** Point to the object and click the left mouse button twice in rapid succession.
- **To Drag-and-Drop:** Point to the object you want to drag and drop and click and hold down the mouse button. While you're still holding down the mouse button, drag the object to the desired location on the screen, and then release the mouse button.
- **To Display an Object's Shortcut Menu:** Point to the object and click the right mouse button.
- **To Close a Menu without Selecting Anything:** Click anywhere outside the shortcut menu with the left mouse button or press the <Esc> key.
- **To Use a Keystroke Combination:** Press one key while holding down the other key. For example, press the <Tab> key while you're holding down the <Alt> key.

Chapter 5 - Manipulative Keys

What are Manipulative Keys?

Manipulative keys are special keys on the keyboard which are not used to type alphabets, numbers and symbols. They are rather used to manipulate data in the document. They are also keys that are used to send instructions to the computer through the keyboard. E.g. Shift, delete, backspace, Tab, insert, etc.



Manipulative Keys

Types of Manipulative Keys

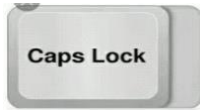
Shift Key: The shift key is a modifier key used to type capital letters and other alternative 'upper' characters. Most keys on the keyboard have two symbols on them, top and down. To type the top key, press and hold the shift key and press the identified key. The keyboard has two shift keys.



Functions:

- Shift + alphabet key will type the alphabet in uppercase (capital) when the caps lock is off.
- Shift + alphabet key will type the alphabet in lowercase (small) when the caps lock is on.
- Shift key + arrow keys is used to select series of text.
- Shift + keyboard key with two (2) characters will type the character at the top. e.g.: Shift + 2 = @; Shift + 5 = %; Shift + 8 = *.
- Shift key is also used to play games, etc.

Caps Lock Key: Caps lock is a toggle key. It's the key used to produce alphabetic upper-case letters. When pressed, light will be indicated on the top right corner of the Keyboard and when pressed again, the light turns off.



Functions:

- When turned on, all alphabets will be typed in capital letters (uppercase).
- When turned off, all alphabets will be typed in small letters (lowercase).

Enter Key: Enter key also known as 'return key'. It is a 'carry out my order key' and it is the same as clicking on 'OK' in a dialog box. You can find two enter keys on a keyboard.



Functions:

- Enter is used to execute or process a command.
- Enter is also used to end a paragraph and start a new one i.e. moving the cursor to the next line.

Escape Key: Escape is located at the top left corner of the Keyboard. The escape is the 'wait, I have changed my mind' key and is the same as clicking the 'OK' on a dialog box. It is shortened as Esc.



Functions:

- Escape is used to close dialog box.
- Escape is also used to stop the loading of a webpage

Tab Key: The Tab key is used to move the cursor to the next 'Tab Stop'. Tab is the abbreviation for TABulator. To tabulate (tabulating) means putting something into a table or chart.



Functions:

- Tab is used to align text and in the creation of paragraphs in word processing.
- Tab is also used to highlight options in a dialog box.
- Tab is also used to move from one cell to the other in spreadsheet.

Insert: Insert sometimes displayed as 'ins', is a key that allows text to be 'inserted' in a document



Functions:

- **Insert Mode:** When insert is enabled, the text inserted in a document will not overwrite any other text.

- **Overwrite Mode:** When insert is disabled, text will be overwritten i.e. erased and replaced.

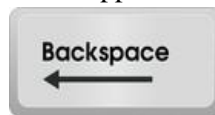
Delete Key: The delete key is shortened as 'Del'.



Functions:

- Delete is used to erase text to the right of the insertion point.
- Delete key is also used to erase or remove items such as files and folders from the computer.

Backspace Key: The backspace key behaves the opposite of the delete key when used to edit text.



Functions:

- Backspace is used to erase to the left of the insertion point.
- Backspace is also used to go back one page in a window or web browser.

Spacebar Key: Spacebar is the long horizontal key at the center bottom of the Keyboard.



Function: Spacebar is used to create spaces between words and other characters in a document.

Control Key: Control is also a modifier key. It is abbreviated as Ctrl.



Function:

Control is pressed with other keys to perform specific actions. When using a Ctrl key, press and hold the Ctrl before pressing other keys. E.g. Ctrl + B = Bold; Ctrl + C = Copy; Ctrl + F = Find, etc.

Ctrl does not do anything when pressed alone.



Alternate Key: Alternate or Alt Key is another modifier key.

Function:

- Alt key does not do anything like Ctrl when pressed alone. It needs another key to make things happen. E.g. Alt + F4 = Close Window; Alt + Tab = Switch between windows, Ctrl + Alt + Del = Task Manager, etc.

Num Lock Key: Num Lock is also a toggle key.



Function: Num Lock is used to activate and deactivate the numeric keypad.

Page Up Key: PgUp key is used to scroll up pages in a document. It is also used to move up one screen.



Page Down Key: PgDn is used to scroll down pages in a document. It is also used to move down one screen.



Windows Key: The Windows key is a standard key on most keyboards on computers built to use windows operating system. It is labeled with a Windows logo, and is usually placed between the Ctrl and Alt keys on the left side of the Keyboard. Windows key (also known as Windows logo key, start key, logo key, flag key, super key, command key or flag, home).



Functions:

- Windows key is used to display the start menu.
- Windows + D are used to minimize the desktop.
- Windows + E are used to launch Windows Explorer.

Home Key: The home key is found on the keyboard usually above the End key.

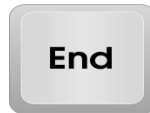


Functions:

- The home key is used to return to the beginning of the line, document, page, cell or screen of where your cursor positioned. E.g.
- Ctrl + Home - will go to the very beginning of the text.

- Shift + Home - highlights all text from current position to the start of the line.
- Ctrl + Shift + Home - highlights all text from the current position to the beginning of the text or page.
- While browsing, pressing the Home Key will move to the top of the page.

End Key: The End key moves the cursor to the end of the line, document, page, cell or screen of where your cursor is positioned.



Functions

- End - Goes to the very end of the line, paragraph or document.
- Ctrl + End - Goes to the very end of the page, document or text.
- Shift + End - highlights all texts from the current position to the end of the line,
- Ctrl + Shift + End - highlights all texts from the current position to the end of the text or page.

Chapter 6 - Health and safety in using ICT Tools

What is ICT Tool?

ICT tool is a device or equipment that makes it possible for information to be sent and received from one place to another with ease. Examples of ICT tools are Computers, Mobile phones, Public address systems, Televisions, Radios, Microphones, Calculators, Cameras, modems, Pen (Flash) Drives, etc. Computers such as desktops, laptops, notebooks, iPads, tablets, phablets and smart phones are the most widely used technology (ICT) tools in the world today. Continuous use of ICT tools can cause lots of health problems to the user.

Health Hazards of ICT Tools

Hazard is anything that serve as a source of danger to the health of those exposed to it or use it.

- **Backache and Waist Pain:** Sitting behind a computer for a long period of time can cause backache and waist pain.
- **Eyes Problems:** Long exposure to television and monitor may affect your sight or vision. The light rays from the television and monitor can cause irritation in the eyes.
- **Hearing Problems:** You can over work your eardrums by listening to loud music from ICT tools such as Public-Address System, speakers, headphones etc., which may weaken your eardrums, induce ringing in your ears and eventually damage your hearing.
- **Radiation Exposure:** Some ICT tools such as mobile phones are believed to be emitting radiation which is very harmful to our health. Long term exposure to scanning machines, ultra- sound equipment and others can kill some cells and cause cancer.
- **Straining of the Body:** Using mobile phones for hours and typing on the Keyboard for a long time can lead to a strain in the fingers, wrists and the back of the hand. The neck, shoulder and the arms can also be affected by strain.

Safety Precautions in using computers and other ICT Tools:

- Adopt correct sitting position
- Take regular break from working on your computer.
- Position monitor to avoid glare (not directly in front of the window)
- Blink your eye anytime when you are using the computer.
- Repair monitor whose pictures cannot be seen properly.
- Use screen shield or filters for monitors.
- Use Uninterruptible Power Supply (UPS) and other electricity guard (stabilizer).
- Do not use damage socket.

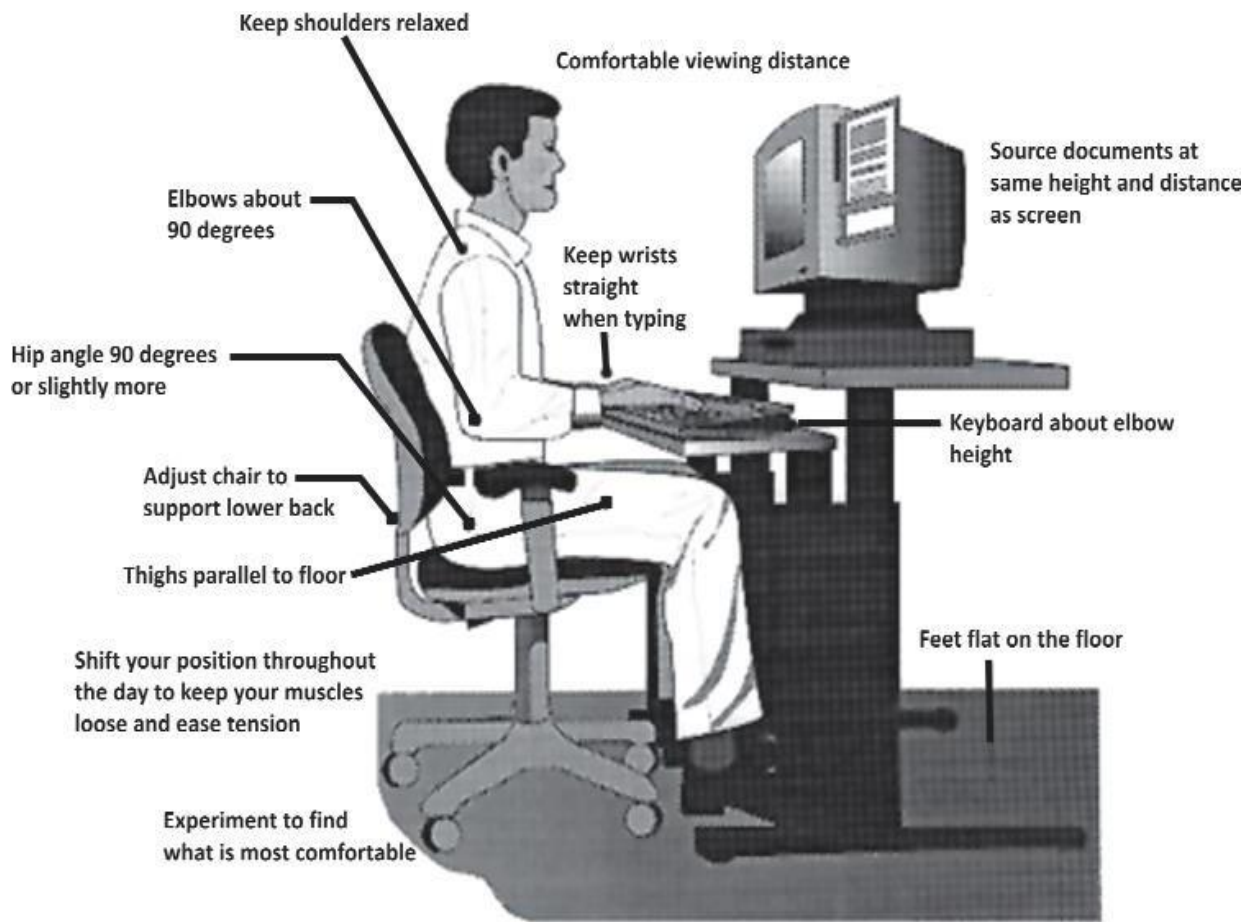
Taking Care of ICT tools

A computer and other ICT tools represent a significant investment, so it's a good idea to know how to take care of them. Regular maintenance and care will ensure you get many years of good service. Check out the tips below:

- **Keep liquids away from your laptop:** Keep your drinks away from your computer. Even if you are careful, someone else might spill your drink.
- **Keep food away from your laptop:** Don't eat over your laptop, the crumbs can fall between the keys and provide an invitation to small bugs or damage the circuitry. Worse yet, the laptop will look dirty if there are crumbs on it.
- **Ideally keep the computer in a clean and dust free room:** Don't put your laptop on the floor or the bed. The fans that suck in air to cool down internal components can also suck up dirt, clogging up the inside and reducing performance. Cover the computer when not in use.
- **Keep magnets away from your computers:** The hard drives of computers can be wiped out or damaged by running magnets over them.
- Having antivirus software available is the best defense against a virus. Regularly scan your computer with certified, up-to-date anti-virus/ anti-spyware software.
- Avoid placing heavy materials, such as books, on top of your laptop: This can push the LCD screen into the keyboard and will eventually damage it. Also, the CD-ROM insert will be squished and, eventually, will break.
- Avoid answering calls when charging phone.
- Do not over load socket
- Avoid over staying in front of television.
- Minimize the volume of the radio and other ICT tools

Ergonomics

The term "ergonomics" is derived from two Greek words: ergon, meaning work, and nomoi, meaning natural laws. Ergonomics is a science that deals with designing and arranging things so that people can use them easily and safely.



Ergonomics is also a design of workplace or equipment for comfort, efficiency, safety and productivity. The purpose of ergonomics is to make working conditions and equipment safer and more efficient.

- Keep your arms and wrist stable.
- Keep your elbows and hand distance from your body.
- Sit back in your chair comfortable and relax.
- Keep your fingers close to the keyboard
- Keep your foot flat on the floor never close your legs.

Chapter 7 - Turning ON / OFF the Computer

One thing a computer definitely needs to work is electricity. A desktop computer must always be connected to a power outlet, while a laptop may operate on its own internal battery for a few hours. In any case, without power the computer is pretty useless.

The Power Button (s)

A desktop computer has two power buttons. One is on the Monitor for turning on the monitor and the other is on the front of the System Unit for turning on the system unit. The laptop, because its system unit and monitor are built in one unit, has only one power button which is mostly at the top right corner of the Keyboard.

Booting

Booting is the process of pushing and releasing the power button of the computer to load the very first software that starts and control the computer. In other words, **booting** is a process of turning on the computer. Alternatively, it is referred to as **boot up**. When a computer is booted or is on, it's normally termed **running**. Without an **operating system**, a computer can not be booted. Hence, a computer user needs an operating system to boot a computer.

Types of booting

- Cold Booting
- Warm Booting

Cold Booting

Cold booting is the process of switching on the computer from the main switch. It involves the pressing of the power buttons on the system unit and the monitor to on the computer.

How to Turn On your Desktop Computer (Cold Booting)

1. Ensure that the monitor, keyboard, mouse and other device connectors are connected to the System Unit.
2. Remove all attached secondary storage devices like flash drive and modems.
3. Now turn on the main power supply
4. Press the power button on the System Unit.
5. Press the power button on the Monitor.
6. Observe the booting process of the computer.


During the boot process, the computer will perform a self-diagnostic known as a **POST**. **POST** stands for **Power- On Self-Test**. **POST** is a test the computer must complete to verify all hardware are working properly before starting the remainder of the boot process.

After the **POST**, the computer will display the **Boot Screen**, **Welcome Screen** and **Desktop**. Actually, the welcome screen only appears on computers protected by passwords and computers being used by multiple users with accounts on the computer.

Warm Booting

Warm booting is the process of restarting the computer. It is also known as **restarting**. It involves clicking on the **restart** on the **turn off computer** button.

How to Restart your Computer (Warm Booting)

1. Click on the **Start Button** . **The Start Menu** appears on the screen.
2. In the Start Menu, click on the **Turn Off Button**. Instantly, a shutdown windows dialog box appears.
3. In the shutdown windows dialog box, click on the down arrow. A small drop-down menu appears.
4. In the drop-down menu, click the restart option.
5. Select **OK**.

You can also restart your computer by using the keyboard shortcut of restarting the computer. This is by pressing **Ctrl + Alt + Del** simultaneously on the keyboard. During booting process, you would see light on the **System Unit** and hear a noise like a fan or a vacuum cleaner.

Reasons for restarting a computer

- When computer does not respond to commands from the user
- When some new programs are installed on the computer
- When default settings of the computer are changed
- When some new hardware devices are installed on the computer
- When some programs are uninstalled from the computer
- When there is computer hardware or software problem

After starting or restarting a computer and the problems of the computer are not fixed, the computer can be restarted into **Safe Mode**.

Safe Mode

Safe Mode is a troubleshooting option for windows that start your computer in a limited state. Only the basic files and drivers necessary to run the windows are started.

How to Restart your Computer in Safe Mode

1. Restart the computer from the start menu. (As done above)
2. While the computer is restarting, keep on pressing the **F8** key until the various options to start the computer appears.
3. Use the **Arrow Keys** to move the cursor on the **Safe Mode option**.
4. Press the **Enter Key**. Computer Restarts in Safe Mode.

After restarting in Safe Mode, the words '**Safe Mode**' appear on the corners of the screen to identify which Windows mode you are using. When the existing problem(s) does not reappear in Safe Mode, you can eliminate the default settings and basic device drivers as possible causes.

Log on to a Computer

When you start the computer and Windows displays a **Welcome Screen** containing links to each of the computer's active user accounts. One will have to log on to his or her account. The process of starting a computer session is called logging on.

To log on, one will have to select his or her user account and if the account is password protected, enter his or her password to log on to the computer.

Windows provides two main types of user accounts such as *administrator* and *standard*.



- The **Administrator** account is for the person who needs to make changes to anything on the computer as well as manage user accounts. An administrator can install programs and hardware, make system-wide changes, access and read all non-personal files, create and delete user accounts, change other people's accounts, change the own account name and type, change the own picture, and create, change, or remove the own password.
- The **Standard user** account is for the person who needs to manage personal files and run programs. The standard user can change system setting that do not affect other users or the security of the computer.
- The **guest account** is disabled by default and needs to be turned on. You can also create a user group, which is a collection of user accounts that all have the same security rights.

Turning Off a Computer

After turning on and using a computer, the computer should not be left on when not in use. There is the need to switch off the computer to save electricity.

Turning Off is the process of switching off or shutting down a computer using the **turn off dialog box**. Therefore, it is also known as **Switching Off** or **Shutting Down**.

How to Turn Off / Shut Down the Computer (windows XP)

1. Close all programs/application
2. Click on the Start Button 
3. Select Turn Off Computer
4. Click on the Shutdown Menu 
5. Press on the power button of the monitor to turn it off.
6. Switch off the main power supply/source.



How to Turn Off / Shut Down the Computer (windows 8)

- Click on **Windows** key
- At the top right corner of the screen, click on the **Power Button Options**
- And select **Shut Down**

Buttons on Turn Off Dialog Box

- Turn Off
- Restart
- Stand By
- Hibernate



Turn Off: To Turn Off, shut down or Power Off a computer is to remove power from a computer's main components in a controlled way. After a computer is shut down, main components such as **CPU, RAM** modules and **HDD** are powered down, although some internal components, such as an **internal clock**, may retain power.

Restart: Restart briefly Turns Off the computer and instantly turn the computer on again. There are many instances in which you may need to restart your computer, including the installation of new software, Windows updates, or the need to correct issues with performance.

Standby: Standby turns (cuts) off power to monitor and hard drive. It is also called the **Sleep Mode**. This uses very little power, your PC starts up faster, and you're instantly backed to where you left off. You don't have to worry that you'll lose your work because Windows automatically saves all your work and turns off the PC if the battery is too low. Use sleep when you're going to be away from your PC for just a little while like when you're taking a coffee break. For a lot of PCs (especially laptops and tablets), your PC goes to sleep when you close your lid or press the power button.

Hibernate: Hibernate is powering down a computer while retaining its state. Upon hibernation, the computer saves the contents of its RAM to a hard disk. Upon resumption, the computer is exactly as it was before entering hibernation.

Hibernate uses less power than sleep and when you start up the PC again, you're back to where you left off (though not as fast as sleep). Use hibernation when you know that you won't use your laptop or tablet for an extended period and won't have an opportunity to charge the battery during that time.

 **NB:**

- **Standby** and **Hibernate** commands will not be displayed together on the same dialog box in some older **OS** like Windows XP.
- A **Dialog Box** is a secondary window that allows users to perform a command, asks users a question, or provides users with information or progress feedback.
- When a computer is **shutdown incorrectly**, it may lead to damage of files.

Summary

- **Desktop:** Work area on which you see your programs.
- **Start Menu:** Let you open programs available in your computer:
- **Task Bar:** Let you launch and monitor running programs.
- **Notification area:** A portion of the taskbar that provides a temporary source for notifications and status.
- **Task Buttons:** Currently opened programs/applications.
- **Desktop Icons:** Icons that belongs to and leads you to important parts of the computer.
- **Shortcut Icons:** Easy way to access programs.
- **Windows Gadgets:** Popular mini-programs.

Chapter 8 - Introduction to Desktop

Desktop

The **desktop** is the on-screen work area where you can access everything you need to operate your computer. It is the large background area of the screen after booting the computer. It is also the monitor's **Graphical User Interface** that appears after booting a computer.



You can customize the desktop by adding '**shortcuts**' of your favorite programs, documents, folders and files. You can also change the look of the desktop to fit your mood and personality. The desktop is one of the elements (features) of the **Graphical User Interface (GUI)**.

Graphical User Interface (GUI)

Graphical User Interface is an interface that allows a computer user to communicate with the computer using **graphics** (such as icons, menus, dialog boxes and windows) and which are manipulated by **pointing devices** (such as mouse, Touchpad, stylus, light pen, etc. and often to a limited extent by a keyboard as well).

NB: Menu is a list of options from which a user can select an action to perform a desired action. **GUI**, makes computers easier to operate by using pictures and icons to represent files and programs. **GUI** interface consists of the following elements or features: dialog box, icons, menu, window, tabs, cursor, etc. **GUI** stands in sharp contrast to **Command Line Interface (CLI)** that existed before it.

Command Line Interface (CLI)

Command Line Interface is interface that enables a computer user and the computer to communicate using text and is manipulated solely by a keyboard.

Operating System that uses the **CLI** is the **Disk Operating System (DOS)** and the most familiar example of a **CLI** is **Microsoft Disc Operating Software (MS-DOS)**.

The first **windows OS** to use **GUI** was **Windows 95**. Since then, Windows OS such as Windows 2000, Windows XP, Windows Vista, Windows 7, Windows 8 (or 8.1), Windows 10 and above use GUI.

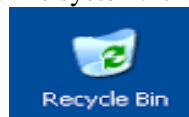
Features (elements) of the Desktop

- The Icons
- Taskbar
- The Free Space

Icons

Icon is a small picture button on the desktop that represents programs, applications, folders, documents, etc. By default, Windows OS displays Recycle Bin, My Computer, My Documents and Internet Explorer.

Recycle Bin: Recycle Bin is a temporary storage for files that have been deleted in a file manager by the user, but not yet permanently erased from the file system. It is a location where deleted files are stored.



The Recycling Bin also allows users to recover files that have been deleted in Windows.

My Computer: My Computer is an icon on the desktop of a computer that allows you to access, explore and manage the contents of your computer's local drives, USB disks, CD/DVD drives and other files.

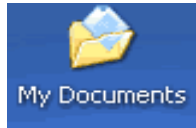


My Computer Icons

The picture above shows examples of the **My Computer** icon in Microsoft Windows XP, Windows 7 and Windows Vista, as well as the "**This PC**" icon in Windows 8, 10 and above. Although the name has changed from "**My Computer**" to "**This PC**", the icon still has the same functionality.

My Documents: My Documents is a Microsoft Windows folders that store computer documents and other files associated with programs on your computer. For example, when saving a file in Microsoft

Word, the default folder is **My Documents**. Saving all of your personal files into the My Documents folder makes them easier to backup and locate.



NB: Microsoft has changed "My Documents" to "Documents" in the most recent versions of Windows.

Internet Explorer (IE): Internet Explorer is one of the first graphical-based web browsers that are used to surf the internet. Initially called Microsoft Internet Explorer (MSIE), Internet Explorer (IE) has long held the title of most popular browser in use, despite strong competition from the likes of Mozilla Firefox, Apple's Safari, Opera and Google Chrome.

My Network Places: You can double-click the My Network Places icon to browse through the on the network. If you're connected to the Internet, the My Network Places icon will appear on your desktop, since the Internet is actually a network too

Other icons that may appear on the desktop are shortcuts of programs, files and folders.

Shortcut Icons: Shortcut Icons are icons on your desktop that represent (are links to) folders, files and programs and with little arrows in the left corner. Shortcuts are normally added (created) on the desktop by users for easy access to files, folders and programs.

Creating a shortcut of an Application on the desktop

1. Click on **Start Button**.
2. Select **All Programs**.
3. Locate the application (e.g. Point to accessories and select WordPad).
4. Right click on the application (e.g. WordPad).
5. Move mouse pointer to **Send To** on the command menu and
6. Click on **Desktop** (create shortcut).

Creating a shortcut of a folder or file on the desktop

1. Locate the folder or file.
2. Right click on the folder or file.
3. Move mouse pointer to **Send To** on the command menu and
4. Click on **Desktop** (create shortcut).

Program Icons: Program icons are icons placed on the desktop by application software installed on the computer. They are used to open or launch the installed application software.

File Icon: File is a data stored electronically by a computer as a document, worksheet or program. This stored data when displayed on the desktop is represented by an icon called file icon. File icon is used to access the electronically stored data.

Folder Icon: Folder is a container in which files and other folders are kept. Folder icon is icon which contains group of files, documents and/or programs.



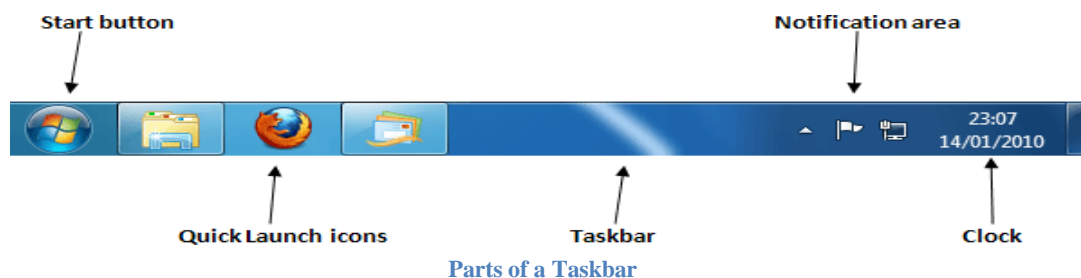
The folder icon is used to access the files and other folders in the folder. A folder is represented by a yellow icon.

NB: All icons (default and shortcuts) can be deleted without affecting the computer.

Taskbar

The taskbar is a long horizontal bar that usually appears at the bottom of the screen. The taskbar contains (from left to right):

- Start Button
- Quick Launch Toolbar
- Launched Programs Area
- Notification Area
- Clock (Time)



Start Button: The Start button is on left-hand side of the taskbar that allows you to open menus, view all installed programs and start applications. You can also use the start button to find files and programs.

When you click the **Start Button**, a menu called **Start Menu** will appear. The Start menu is your gateway to the applications on your computer. The Start Menu is a user interface element that provides a central launching point for computer programs and performing other tasks. The **left side** of the Start menu lists **programs**, while the **right side** allows access to common **Windows folders** (My Documents, for example). It also provides access to Help and Support, Search, and Run.

To explore the Start Menu:

1. Click the **Start Button**.
2. Move the mouse pointer to each **option** and view the various cascading menus.
3. Click (or roll your mouse pointer over) **All Programs**.
4. Move the mouse pointer to the right and view other cascading menus.
5. To exit the menus, click outside the menu area or press **Esc Key** on your keyboard.

Quick Launch Toolbar: Is a bar which contains icons for Internet Explorer, Windows Media Player, etc.

Launched Programs Area: Is an area on the **taskbar** that displays the icons of all windows and applications that have been launched and are currently running. It allows you to easily switch between open windows and applications.

Notification Area: **Notification Area** is the area on the right-hand side of the taskbar that contains several icons, depending on programs and applications that have been installed. Other icons appear in the Notification Area detailing the status of your activity. For example, when you're printing a document, a printer icon appears. Microsoft also uses the Notification Area to remind you when software updates are available for download.

Clock: The clock displays the time on the computer. It is located at the extreme right-hand corner of the taskbar, near the Notification Area.

Free Space

Free space is the space on the desktop without icons. It is also an area where icons will appear when programs are installed or shortcuts created. It is used for the free movement of the mouse pointer and for file related operations such as copying or moving icons.

Desktop Background

As said earlier, you can change the look of the desktop to fit your mood and personality by changing the wallpaper. Changing the desktop wallpaper of a computer is termed **Customizing the Desktop**. Below are the various ways (approaches) of changing the desktop background under Windows XP:

Approach 1 (Through Control Panel)

1. Click on the **Start Button**
2. Click on **Control Panel**
3. Click on **Appearances and Themes**
4. Click on **Display**
5. Click the **Desktop tab**
6. Click your preferred background
7. Click **OK**

Approach 2 (Through the Desktop)

1. Right-click an empty area on your desktop
2. Click on **Properties**

3. Click the **Desktop tab**
4. Click your preferred background
5. Click the **OK** button

Approach 3 (Directly through an image)

1. Navigate to the image you wish to use as Desktop background
2. Right-click on the desired image
3. Click on open with
4. Click windows picture and fax viewer
5. Right-click on the image
6. Click on **Set as Desktop Background**

Importance of Taskbar

- It provides access to all installed programs.
- It shows opened programs.
- It provides shortcuts to some installed applications or programs.
- It displays the system date and time.

Chapter 9 - Launching Applications

What is Application?

Application is the software designed to be used by the computer user to perform specific tasks or operations on the computer such as creating a document, spreadsheet, sending emails, etc. Application software is mostly and simply called **application**.

Launching Applications

Launching application means opening a program or application for use. Basically, we have two (2) ways of launching applications:

1. Launching an application **using the start menu**.
2. Launching an application **from the desktop**. Under this, we have:
 - Double click method
 - Right click method
 - Enter key method

Start Menu method

1. Click on the **Start Button** located on the **Taskbar**.
2. Select **All Programs** from the start menu.
3. Double click on the application you want to launch from the **Pop-Up Menu**.



Launching Application Using Start Menu

Double Click Method

1. Locate the icon of the application on.
2. Double click on the icon to launch the application.

Right Click Method

1. Locate the icon of the application.
2. Right click on the icon.
3. Click on **open** to launch the application.

Enter Key Method

1. Locate the icon of the application you want to launch.
2. Click on the icon to highlight or select it.
3. Press the **ENTER** key to open the icon.

NB:

- **All Programs** is a menu that lists all programs available on your computer.
- **Installation** is the process of preparing and setting up software on a computer.
- **Uninstalling** is the process of removing a program or application properly from a computer.
- A computer is said to be **running** when a user is using a program or application.

Multitasking

The computer has been designed in such a way that it can allow the user to do more than one tasks or processes at the same time. This is achieved by launching more than one application to do the tasks.

Multitasking is the working with more than one application at the same time.

A simple example of multitasking is listening to music while creating (typing) a document or browsing the internet.

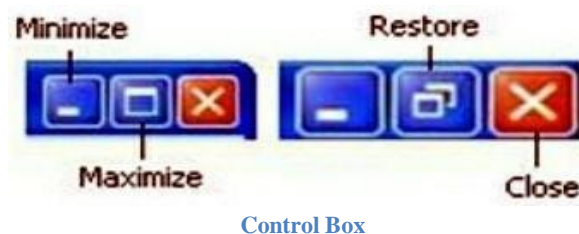
Chapter 10 - Managing Windows

What is Window?

A **Window** refers to a rectangular area of the screen within which you may view programs, folders and files. It's the portion of the desktop screen in which a program with all its content is displayed. At the top of a window interface is the **Title Bar**. The title bar displays the name of the program or window (Window Title) and contains the tools for resizing and closing a window known as the Control Box.

Control Box


The Control Box is in the upper right-hand corner of the interface and consists of tools for **sizing** and **closing** a window or program. The title bar contains three buttons. The button with the flat piece (—) is the **Minimize** button. The button in the middle is the **Resize** button which also has two buttons, **Maximize** (one square) and **Restore** (two squares) on it. The last button has an **X** on it and is called the **Close** button.



Minimize Button

The minimize button drops programs or windows on the **Taskbar**, where it will only be represented by an **icon**. It hides a program or window from the screen but keeps it running in the computer's memory, ready for quick use. You can minimize a program you're not using so that it is still running but is out of sight.

How to Minimize

- Click the **Minimize Button**  to minimize the window/program. The window/program shrinks to an icon located in the Windows taskbar. The window/program is still open and running. It's just hidden from view, tucked away and ready for future use.

It's easy to redisplay a minimized program or window when you're ready to use it again by **restoring**.

How to Restore a Minimized Window

- Find and click the window/program icon that you have minimized in the taskbar. The window/program springs back to life and appears on the screen.

Function/Use of the Minimize Button

It is used to drop an opened window to the taskbar so that you can work on other windows.


Resize Buttons

The resize button will either make the program or window large enough to fit the screen (the single square) or small enough to where you can see it and other programs or windows that you have opened simultaneously (the two squares).

Maximize

Maximize Button: Enlarges the window so that it fills the entire screen. This lets you see more of the window's contents. The Maximize button only appears when the window isn't maximized (doesn't fill the entire screen).

How to Maximize


- Click the **Maximize Button**  of a program/window that you have launched. The window/program maximizes, filling the entire screen.

You can change a maximized window back to its original size by clicking the **Restore Button**. The Restore Button appears in place of the **Maximize Button** whenever a window is already in a maximized state.

Restore Button

When a window is maximized (fills the entire screen), clicking the **Restore Button** returns the window to its previous size.

How to Restore

- Click the **Restore Button**  of a program/window that you have maximized to restore the window/program back to its previous size.

NB: A double click on the **Title Bar** maximizes or restores a window/program depending of the state of the window/program.

Functions/Uses of Resize Button

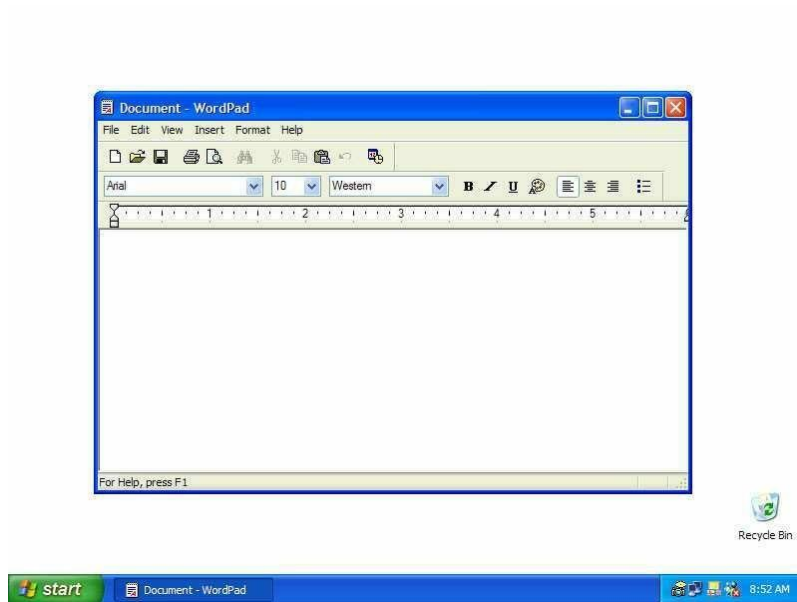
- The **maximize** button is used to enlarge the window to take its maximum size.
- The **Restore** button resizes the window to take its minimum size.

Close Button

The close button will close a program or window, just as if you went to **FILE | CLOSE** on the menu or **FILE | EXIT** on the menu. It closes window or program when you're finished working with it, removing it from the screen and the computer's memory. Let us launch the WordPad.

To close a window:

- Click the WordPad icon window's **Close Button** . The WordPad program closes.



Opened Window



Closed Window

NB: If a program has more than one window open, you can close all of its open windows by holding down the **Shift** key when you click the Close button for any window.

Function/Uses of the close Button

- It is used to close window and exit the application window.

Moving a Window

When you have several programs or windows open, you may find that one window covers the other windows. When this happens, you can simply move a window to a new location on the screen. In this case, let us launch WordPad program again.

Here's how to move a window:

1. Position the mouse pointer over the title bar of the window or program (e.g. WordPad).
2. Click the title bar and move the mouse while still holding down the mouse button. [Yep, it's that drag and drop stuff you learned earlier].
3. Release the mouse button to drop the window to a new location.

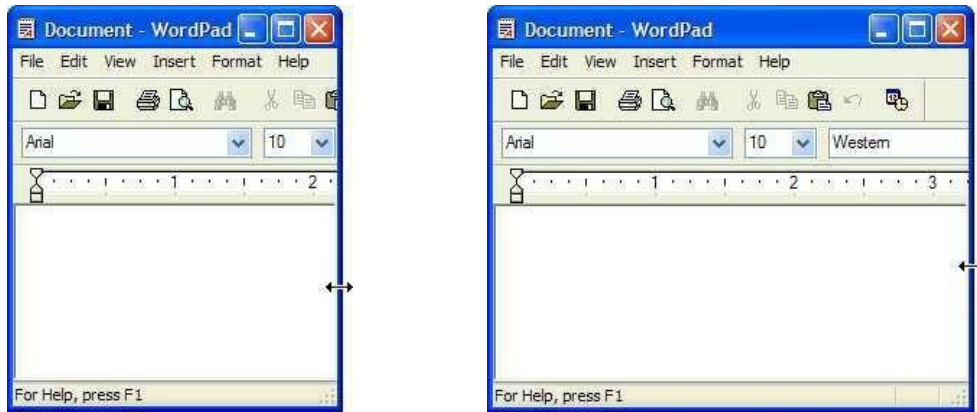


Moving a window

Changing the Size of a Window

After moving a window, you may need to fine-tune the size of a window to meet your own specific needs. To do this, launch a program. E.g. WordPad

1. Make sure the WordPad program appears as a window and doesn't fill the entire screen.
2. Position the mouse pointer over the right border of the WordPad window until it changes to two arrows (↔) pointing in the directions that you can drag the window's border, in this case, left or right.
3. Click and hold down the left mouse button and drag the mouse to the right to move the window border. [**NB:** As you drag the mouse, the window stretches].
4. When the window is the size you want, release the mouse button.



Changing the size of a window

Making a Window Active

As earlier said, computer screen can contain many programs or windows. Each window has its boundaries and the windows can be placed on top of each other. Every opened window is represented on the taskbar by a window tab or taskbar button (icon).

To do this you need to have more than one window or application launched. That's to say, the window will be displayed on top of all the other opened windows and will respond to inputs and command from the computer user.



Making a Window Active

Click the Title bar of the window

OR

Click any visible portion of the window

OR

Click the taskbar icon of the window (program)

OR

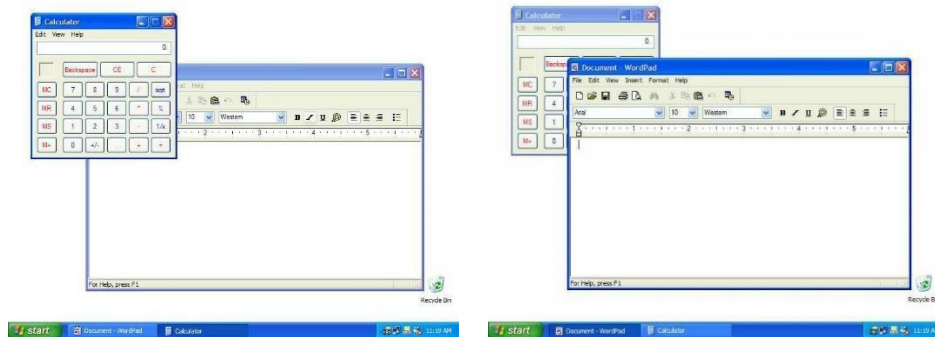
Use the shortcut keys Alt + Tab of the window.

Switching between Windows

When you have several programs or windows opened and running simultaneously, you can only work in one window at a time. The window you're working with is the active window and always appears on top of the other windows. Switching between windows is like making a window active.

Here's how to switch between windows running:

1. Make sure the WordPad program is still opened.
2. Start a new program (e.g. calculator) by clicking the Start button and selecting: All Programs→ Accessories→ Calculator
3. Click the title bar of the WordPad. [The WordPad program appears in front and its icon on the taskbar is depressed.]
4. Click any portion of the Calculator window.
5. If you can't see the Calculator window at all, it's because the Calculator window is completely covered by the WordPad window. In this case, you will have to click the Calculator icon on the taskbar.



Switching between windows

Using Alt + Tab keys

Yet another method of switching between windows is the most famous keystroke combination in Windows:

- Press and hold down the **Alt** key, press and release the **Tab** key, but don't release the **Alt** key. The task window lists all the windows and programs that are currently running.

Move on to the next step to see how you can retrieve a program or window from the task list.

- While still holding down the <Alt> key, press and release the <Tab> key until the WordPad program is selected, then release the <Alt> key. When you release the <Alt> key, the selected window or program is activated and displayed in front of all other windows.

Summary

- Be able to identify a window's title bar, menu, minimize, maximize, and close buttons.
- Minimizing, Maximizing and Restoring a Window

- Maximize a window so that it fills the entire screen by clicking its Maximize button or by double-clicking its title bar.
- Restore a window to its previous size by clicking its Restore button or by double-clicking its title bar.
- Minimize a window so that it only appears as an icon on the taskbar by clicking the window's Minimize button.
- Restore a minimized window by clicking its icon on the taskbar.
- Close a window by clicking its Close button, or by pressing <Alt> + <F4> .
- Close all open windows by holding down the <Shift> key while you click the Close button of any window.
- To Move a Window: Click and drag the window by its title bar. Release the mouse button to drop the window in the desired location on the screen.
- To Change a Window's Size: Point at the window's borders or corners until the pointer changes to a double-arrow (like).
- Click and hold down the mouse button and drag the border or corner to a new location until the window is the size you want.
- You can only work on one window at a time. The window you're working on is the active window and appears in front of all the inactive windows.
- To Switch between Open Programs: There are three ways to switch between open programs:
 1. Click on the program's icon on the taskbar.
 2. Click on any visible part of the window that you want to appear in front.
 3. Press and hold down the <Alt> key and press the <Tab> key to display the task list. Press the <Tab> key until the program you want is selected, then release the <Alt> key.

Chapter 11 - Common Keyboard Symbols

We are using the symbols available in the computer keyboard in our daily life. But we may not be aware of the name of the all symbols used in the keyboard. The symbols can be grouped into two. These are:

- Primary Characters
- Secondary Characters

Primary Characters

These are symbols on the keyboard that does not involve the application of **Shift Key** to type them. They are typed with one finger.

Below is a list of the special symbols and punctuations available in a computer keyboard and their names that do not require the application of Shift Key to type them:

Symbol	Name
.	Full Stop / Period / Dot
,	Comma
‘	Apostrophe / Single Quote
;	Semi- Colon
`	Back Quote
/	Slash / Forward Slash
\	Back Slash
[Open Bracket
]	Close Bracket
=	Equal
-	Minus / Hyphen / Dash

Secondary Characters

These are symbols on the keyboard that involve the application of **Shift Key** to type them. They are typed with two fingers. One finger pressing and holding down the shift key, while the other fingers pressing the key.

Below is a list of the special symbols and punctuations available in a computer keyboard and their names that require the application of Shift Key to type them:

Symbol	Name
&	And / Ampersand
?	Question Mark
@	At
"	Double Quotation Mark / Inverted Commas / Quote
:	Colon
+	Plus
%	Percent
*	Asterisk / Multiplication
^	Exponential / Caret /circumflex
!	Exclamation Mark / Bang
(Open Parenthesis
)	Close Parenthesis
{	Open Brace / Curly Bracket
}	Close Brace / Curly Bracket
#	Hash / Pound / Number Sign / Sharp
_	Underscores
\$	Dollar
>	Greater than
<	Less than
~	Tilde/ Dwindle
 	Pipe / Bar

Chapter 12 – Introduction to Word Processing Applications

Word Processing Application

Word Processing Application is software used to create word-based documents (such as letters, reports, memos and any word-based document) on the computer that can be printed out onto paper using a printer. Word Processing Applications are simply called **Word Processors**. A word processor provides components such as paper, pen (typewriter), eraser and a dictionary.

Examples of Word Processors

- Notepad
- WordPad
- Microsoft Office (MS-Word)

Other examples are Writer, WordPerfect, WordStar, Pages, AbiWord, KWord, Jarte, Kingsoft Writer, Bean, Calligra Word, Groff, JW Pee, LyX, Ted, WordGraph, Able Word, WriteMonkey, Focus Writer, RoughDraft, Judoom, AEdit, etc.

Notepad and **WordPad** are integrated features of all versions of Windows OS. They are features found in Windows Accessories. So, you do not have to install Notepad or WordPad after installing any Windows OS.

Microsoft Word is a word processing program that allows for the creation of both simple and sophisticated documents. The program is equipped with templates and wizards to help you create useful documents such as resumes; letters and fax cover sheets. There are also features that allow you to add professional looking graphics to your documents. Other **Word Processing Applications** are Word Perfect, Office Suite, AbiWord, Polaris, OpenOffice, etc.

With the exception of **WordPad** and **Notepad**, all other examples of word processors including MS-Word are application software that must be installed on the computer after installing any **Windows OS**.


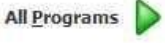

MS-Word can't be installed separately. It is part of **Microsoft Office Suite** software which contains other applications such as **MS-Excel**, **MS-Power Point**, etc. Microsoft Office suite software is in many versions. Some of the versions are Microsoft Office XP, Microsoft Office 2003, Microsoft Office 2007, Microsoft Office 2010, etc.

NB:



- ✓ A collection of separate windows applications sold as a group is called **suite**.
- ✓ The default extension for the following file formats are: Notepad/WordPad - **.txt** and MS Word - **.doc/.docx**.

Launching Word Processing Applications

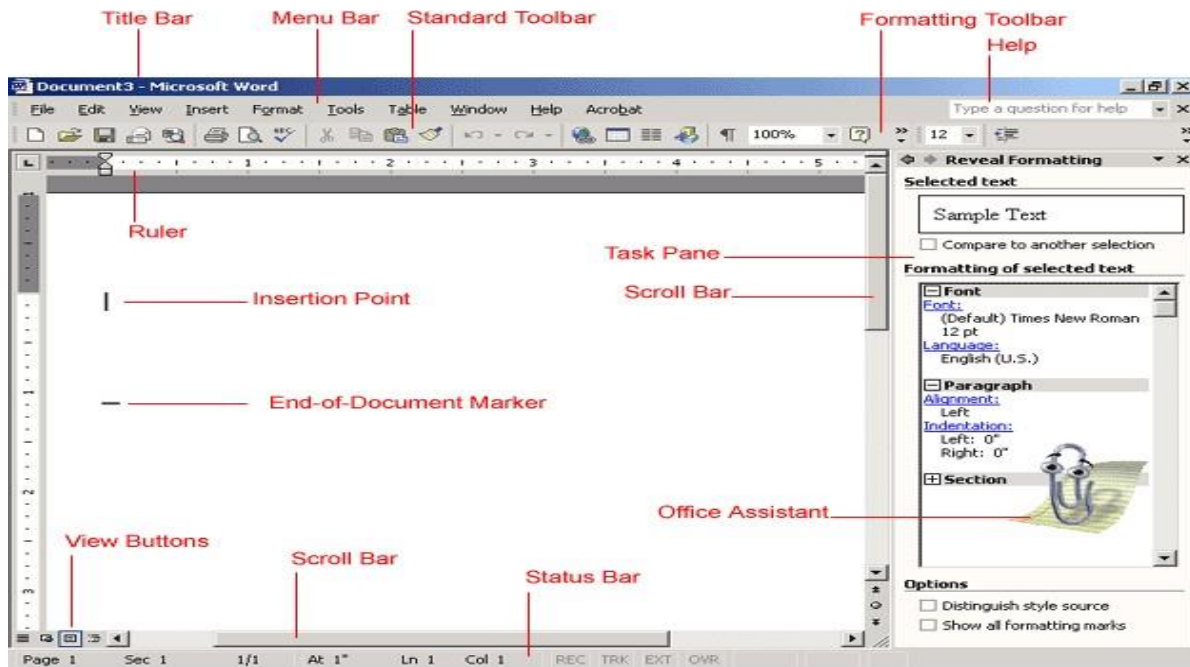
Steps to follow to launch Notepad or WordPad

1. Click the Start Button . [Remember that the Start button resides in the bottom-left corner of the computer screen. The Start menu pops up].
2. Point to All Programs . [A menu listing the different program categories pops out above the Start menu].
3. Point to Accessories  Accessories. [Another menu shoots out to the side of the All Programs menu. The program you may want to launch; WordPad or Notepad is in the Accessories menu. Can you find them?]
4. Click the Notepad or WordPad. [The program clicked appears on the screen in its own window].

Steps to follow to Launch MS-Word from the Start Menu

1. Click the Start Button  to open the Start Menu.
2. Click on All Programs . [A menu listing the different program categories pops out above the Start menu].
3. Point to Microsoft Office Suite. [The Microsoft Office Suite menu pops out above the Start menu. The Microsoft Office Word is part of the menu. Can you find it?]
4. Click on Microsoft Office Word. [Microsoft Office Word will finally open in its own window].

Parts of Word Processors



Labelled MS-Word

Title Bar

The title bar is a horizontal bar at top of the window interface that displays the name of the application being used and the title of the file being worked at as well as the tools to be used to manage the window. In this particular example, the name of the application is Microsoft word and the title of the file is **Document1** (NB: The document has not been named so it has the default name of Document1).

In the upper right-hand corner of the Interface you will notice a set of 3 buttons. The button with the flat piece (—) on it is the minimize button. The button in the middle is the resize button and may have one square or two squares on it. The last button has an X on it and is called the close button.



NB: By double click on the Title bar, you can restore or maximize the window.

Functions of the Title Bar

- Window title- shows the logo, name of application and the title of a file.
- Control menu (box)- resize and move.
- Minimize- drops window on task bar.
- Maximize- enlarging a window.
- Close- ending application.

Menu Bar

The menu bar is horizontal bar that appears below the title bar. menu options. When you click on any of these options (File, Edit, View, Insert, Format, Tools, Table, Window or Help) a drop-down menu of commands will appear below it.



Below are brief descriptions of each of the above menu bar options:

- **File:** This menu has all the commands related to the file operation like creating a new document, saving, opening, printing etc.
- **Edit:** This menu has all the commands related to the editing the document like cut, copy, paste, delete etc.

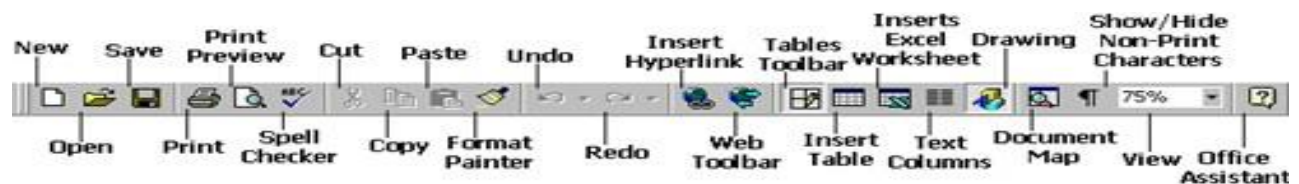
- **View:** This menu has all the commands related to the controlling of the view to the document like print layout, web layout, zoom etc.
- **Insert:** This menu has the commands related to inserting objects, date & time, page number, footnotes, header & footer etc.
- **Format:** This menu is related to formatting of the document like text formatting, column & paragraph formatting etc.
- **Tool:** This menu has all the options related to the word processing tools namely, spelling & grammar checking, word count, thesaurus, macro, protection etc.
- **Table:** This menu has all the commands related to inserting & modifying tables.
- **Window:** This menu has all the commands related to working in the windows.
- **Help:** This menu has all the commands related to getting help for MS-Word.

Standard Toolbar

Standard toolbar contains quick access tools used for frequent operations such as open, save, copy, cut, paste and print.



Standard Toolbar



Labeled Standard Toolbar

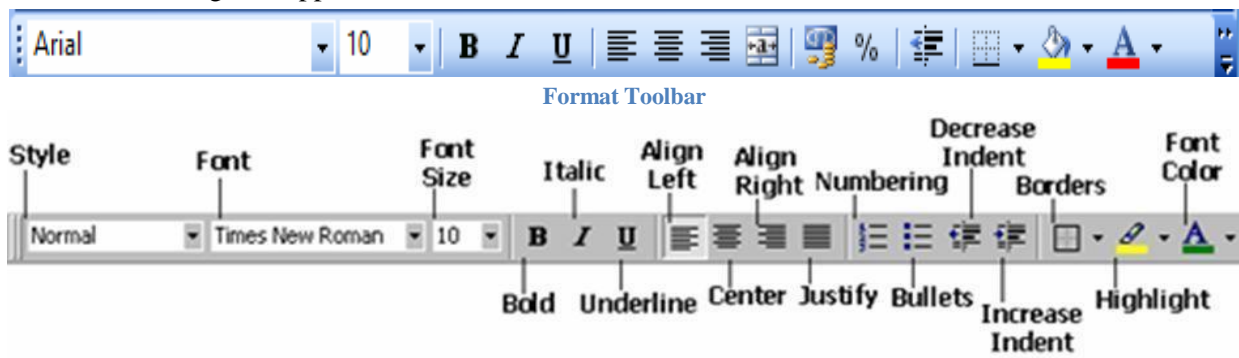
Below is a list of the tools offered on the Standard Toolbar and their functions:

- **New:** Creates a new, blank document.
- **Open:** Opens a document previously created and saved in Word.
- **Save:** Saves the active document to a specified location.
- **Print:** Prints active document.
- **Print Preview:** Displays what the document will look like when you print it.
- **Spell Checker:** Checks active document for spelling and grammatical errors.
- **Cut:** Cuts the selected text and places it on the clipboard.
- **Copy:** Copies the selected text and places it on the clipboard.
- **Paste:** Pastes the contents of the clipboard to a new location.
- **Format Painter:** Copies the formatting of the selected text to a new text selection.
- **Undo:** Undoes the last document change.
- **Redo:** Redoes the last action that was undone.
- **Insert Hyperlink:** Creates a hyperlink from the selected text. That is, inserts a website in a document.
- **Web Toolbar:** Shows web toolbar.
- **Tables Toolbar:** Shows tables' toolbar.

- **Insert Table:** Inserts a table.
- **Insert Excel:** Worksheet Inserts an Excel Worksheet.
- **Text Columns:** Changes the number of text columns per page.
- **Drawing:** Shows drawing toolbar.
- **Document Map:** Changes the view of the document.
- **Show/Hide:** Shows and hides non-print characters.
- **View:** Magnifies or reduces the document contents by the specified zoom percentage.
- **Office Assistant:** Help function

Formatting Toolbar

The Formatting toolbar offers shortcut buttons to help format a document quickly. It consists of tools used to select and change the appearance of text in a document.



Labelled Formatting Toolbar

Below is a list of Formatting toolbar buttons and a brief description of each.

- **Font Style:** Changes the style of the selected text.
- **Font Type:** Changes the typeface of font for the selected text.
- **Font Size:** Changes the point size of the selected text.
- **Bold:** Makes the selected text dark (bold) to help emphasize the text.
- **Italic:** Makes the selected text slanted forward (italic) to help emphasize the text.
- **Underline:** Underlines the selected text to help emphasize the text.
- **Align Left:** Aligns the selected text/paragraph(s) to the left margin. It creates a straight line of text on the left-hand side of the page.
- **Center:** Centers the selected text/paragraph(s). It puts text in the middle of a page horizontally.
- **Align Right:** Aligns the selected text/paragraph(s) right. It creates a straight line of text on the right-hand side of the page.
- **Justify:** Justifies the selected text/paragraph(s). It creates a straight line of text on both the left and right-hand sides of the page.
- **Numbers:** Creates a numbered list or numbers the selected paragraph(s).
- **Bullets:** Creates a bulleted list or adds bullets the selected paragraph(s).
- **Decrease:** Indent Decreases the space (indentation) between the left and right margin of selected paragraph(s).
- **Increase:** Indent Increases the space (indentation) between the left and right margin of selected paragraph(s).

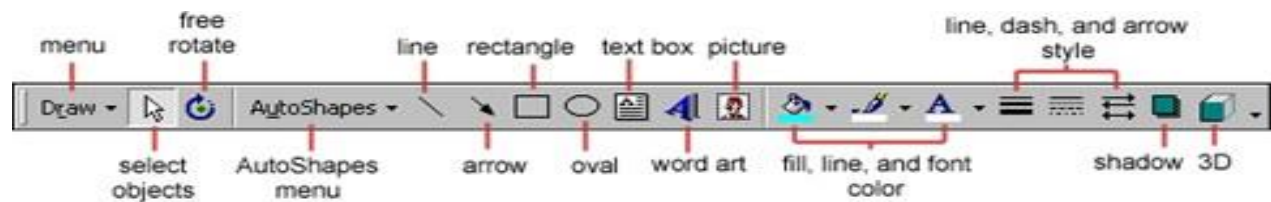
- **Increase:** Indent Increases the space (indentation) between the left and right margin of selected paragraph(s).
- **Borders:** Creates a border around the selected text/paragraph(s)
- **Highlight:** Allows you to select (highlight) specified text.
- **Font Color:** Allows you to change the color of the text.

Drawing Toolbar

The Drawing toolbar is located at the bottom of the window, between the Horizontal Scroll bar and the Status bar.



Drawing Toolbar



Labeled Drawing Toolbar

The Drawing Toolbar holds buttons/tools used in creating drawings. It also offers tools for inserting organizational charts and ready-made pictures and Clip Arts from their different locations.

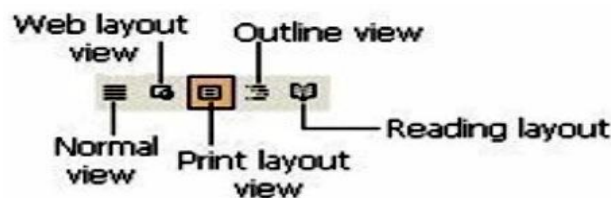
Click [Drawing Toolbar](#) for more!!!

View Toolbar

These change the layout view of the document to normal, web layout, print layout and outline view.



View Toolbar

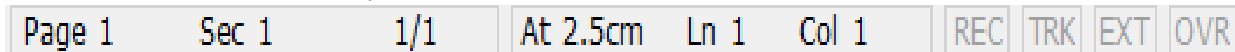


Labeled View Toolbar

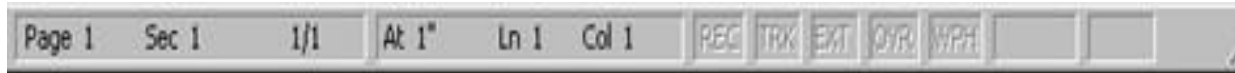
Status Bar

At the bottom of the Word interface is the status bar. This bar displays information about your document such as the page that is currently displayed on the screen (**Page 1**), the total number of pages in the

document (**1/1**, i.e. 1 of 1) and the line in which the cursor is currently positioned (**Ln 1**). The right side of the status bar shows whether keys such as **OVERTYPE** are active or inactive.



Status Bar 1



Status Bar 2

Other Parts of Word Processors

- **Ruler:** This is a bar marked off in units that is displayed across the top of the document window. It is used to set page margins, column widths, paragraph indents and tabs.
- **Insertion Point:** This is the location where the next character appears.
- **End-Of-Document Marker:** This indicates the end of the document.
- **Scrollbars:** These are used to view parts of the document.
- **Task Pane:** This provides easy access to commonly used menus, buttons and tools.
- **Help:** This provides quick access to **Help topics** on how to use **word**.
- **Office Assistant:** This links to the Microsoft Office Help feature.

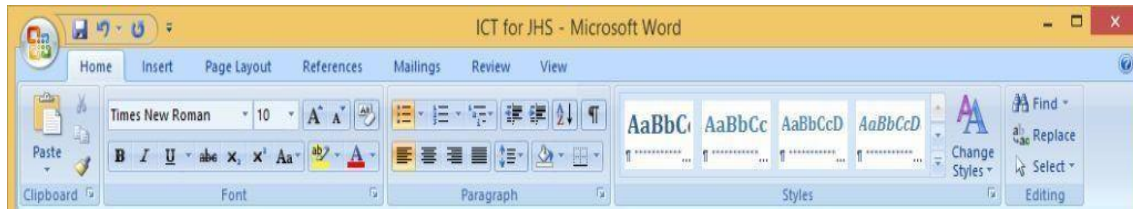
Finding Help

1. Click on **Help** on the **Menu Bar**.
2. Click on show the **Office Assistant**.
3. Click on the **Office Assistant**.
4. Type a question (e.g. **How do I open a document**) in the **Question Box**.
5. Click on search to start searching.
6. Click **Open a file** in the list of alternative **Help** results.
7. Read the information
8. Click **Close** button on the **Help** window.

The Ribbon

The Ribbon is the set of toolbars at the top of the windows in office programs designed to help you quickly find the commands that you need to complete a task. The ribbon replaced the toolbars and menus in **Office XP** such as standard, format, view and drawing toolbars with **Tabs**.

The tabs are seven: **Home**, **Insert**, **Page Layout**, **References**, **Mailings**, **Review**, and **View**. Each tab is divided into **groups**. The groups are collections of features designed to perform functions. 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. The ribbon was introduced in Office 2007.



The Ribbon

Below are the tabs on the Ribbon and their functions

- **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

☒ To remove the ribbon, right click on the **blue section** beside the tabs (after the view tab) and the choose **Minimize the Ribbon**. To view again, do the same.

Quick Access Toolbar

The quick access toolbar is a customizable toolbar that contains commands that you may want to use frequently. It is normally on top-left corner of the ribbon. You can add items to it by:

1. Right click on any item in the **Office Button** or the Ribbon and
2. Click on **Add to Quick Access Toolbar** and a shortcut will be added to the **Quick Access Toolbar**.

Importance of Word Processor

- It helps to create the documents fast than the traditional type writer.
- Typing errors can be easily corrected, as the text can be pre-viewed on the screen.
- It helps in automatic checking of spelling and grammar errors in the document.
- Graphics, diagrams, charts, and tables can be easily inserted in the document to make it more communicative.
- The documents can be saved in the computer's memory for future use.

Chapter 13 - Creating Word Documents

What is a document?

A **document** is user created work on the computer. Word document is text-based document created with Word Processor such as Microsoft Word. Actually, word document can also contain pictures, tables and charts.

NB: Word Processing is the production, storage and manipulation of text on a computer using word processor software, such as Microsoft Word. Examples of Word processing processes include **composing, editing, formatting** and **printing text**.

Creating Document

Before you can create a word document, you first have to launch a word processor such as Microsoft Word. When Microsoft is launched, a new blank document is provided for the user to begin typing to create a word document.

NB: New Blank Document is an empty paper that does not contain any text or picture.

Launching MS Word

To launch a new blank document, if the icon (shortcut) of MS-Word is on the desktop, follow these steps:

1. Move the mouse cursor to the **icon** of **MS-Word** on the desktop
2. Double click on the icon to launch an **MS-Word**.



OR

1. Move the mouse cursor to the **icon** of **MS- Word** on the desktop
2. Right click on the icon
3. Select **Open** from the **Pop-Up Menu**




MS-Word icon

If the icon (shortcut) is not on the desktop, follow these steps to open a new blank document using the Start Menu as explained in the previous chapter. That is:

1. Click the **Start Button**  to open the **Start Menu**.
2. Click on **All Programs** . (A menu listing the different program categories pops out above the Start menu).
3. Point to **Microsoft Office Suite**. (The Microsoft Office Suite menu pops out above the Start menu. The Microsoft Office Word is part of the menu. Can you find it?)
4. Click on **Microsoft Office Word**.

How to launch a new blank document if Microsoft Word document is already opened

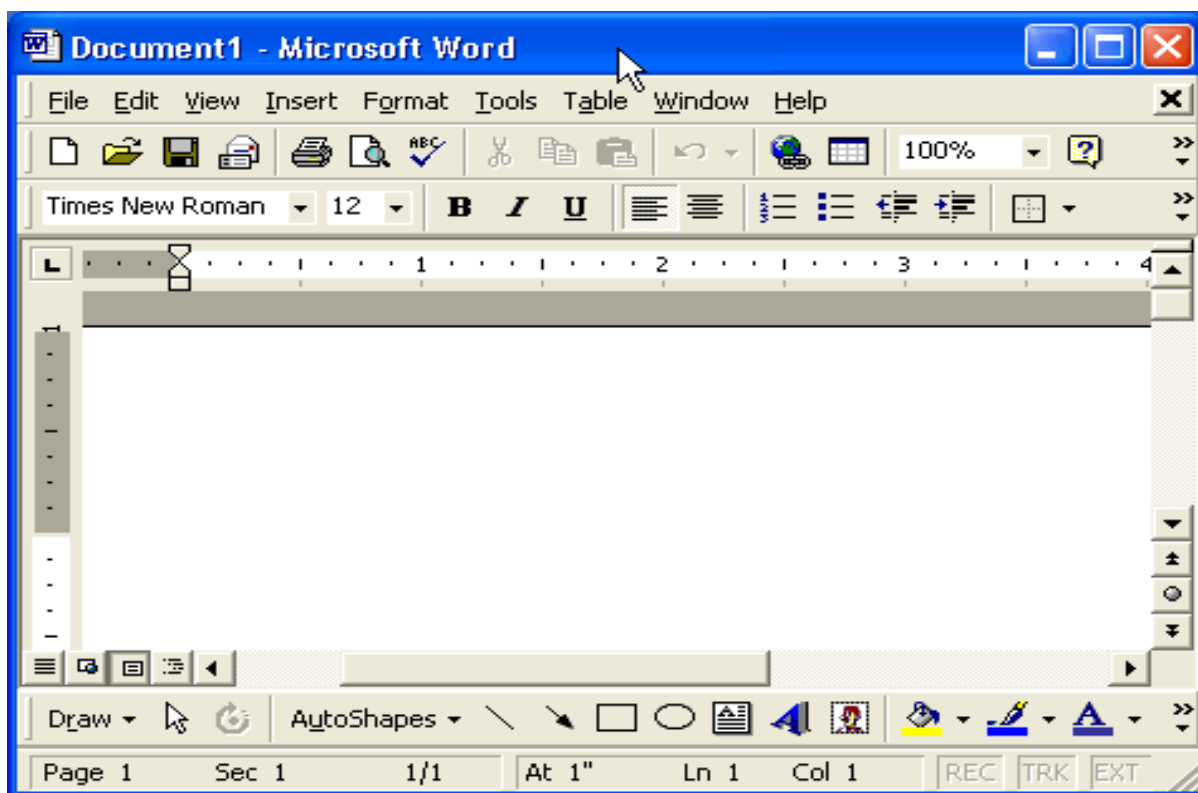
1. Click File from the Menu Bar or Office Button .
2. In the left column, you click **New** option. [A prompt should open that presents you with several options].
3. Select **Blank Document**.

OR

- Click the **New** tool on the **Standard Toolbar** to open a new blank document.

OR



- Use the shortcut keys, **Ctrl + N** (Depress and hold **Ctrl**, Press and release 'N') to open a blank document.



New Blank Document

Insertion Point

After launching a new blank document, the user can now enter text in the **document area** using the keyboard. Remember the text you type will appear at the location of the **blinking vertical bar** called **insertion point**.

Insertion Point is the blinking vertical bar in the document area that marks the location where text will appear when typing begins. It is the mouse pointer changes that from an **arrow**  to an **I-beam**  shape as you work within a file.

Moving the insertion point

To move the insertion point:

- Use your mouse to move your insertion point **anywhere** within the file.
- Use your keyboard's **arrow keys** to move your insertion point up, down, left, or right.
- Hold the **Control key (Ctrl)** and press the up or down arrow keys to jump up or down a paragraph at a time.
- Press the **Page Down** key to jump down the document one page at a time.

Special features of some Word Processors

While typing you can make use of some special features of some word processors to aid you type accurately and faster. Examples of these special features are explained below:

- **Spacing:** During typing, remember to press the **spacebar** ones any time you want to create a space between words.
- **Erasing:** Press the **backspace** key to erase to the left of the insertion point or press the **delete** key to erase to the right of the insertion point.
- **Word Wrap:** As you type in **MS-Word**, the insertion point moves to the right and when it reaches the end of the line, the insertion point moves automatically to the next line. That is what is termed as **Word Wrap**.

■**NB:** Word wrap is a feature of word processors that automatically move the insertion point to the next line when the insertion point reaches the end of the margin.

- **Paragraphing:** Press enter to end or begin a paragraph. By pressing enter, the insertion point moves from its current line to the next line to create a paragraph.
- **Page Break:** When the user fills a page, with text, pictures, graphs and charts, the insertion point automatically moves to the next page. This feature is called **Page Break**. Page break ends the current page of a document and begins at top of the next page. The user can intentionally insert page break without filling the page by:

Clicking on **Insert** from the **Menu Bar** and select **Page Break**.

OR

Use the shortcut, **Ctrl + Enter** on the keyboard.

- **Auto Complete:** As you type, the computer provides word suggestions tips when you have not finished typing the word. This feature is called **Auto Complete**. When a user is provided with auto complete word suggestion tip, the user presses **Enter** on the keyboard to accept suggested **word tip** or continue typing to reject **Auto complete tip**.



■**NB:** **Auto Complete** is a feature of word Processors that provide suggestion tips of complete words as the user types the words.

- **Punctuations:** Strictly observe typing instructions and rules in using punctuations so that you can create a near perfect document.


Saving Document

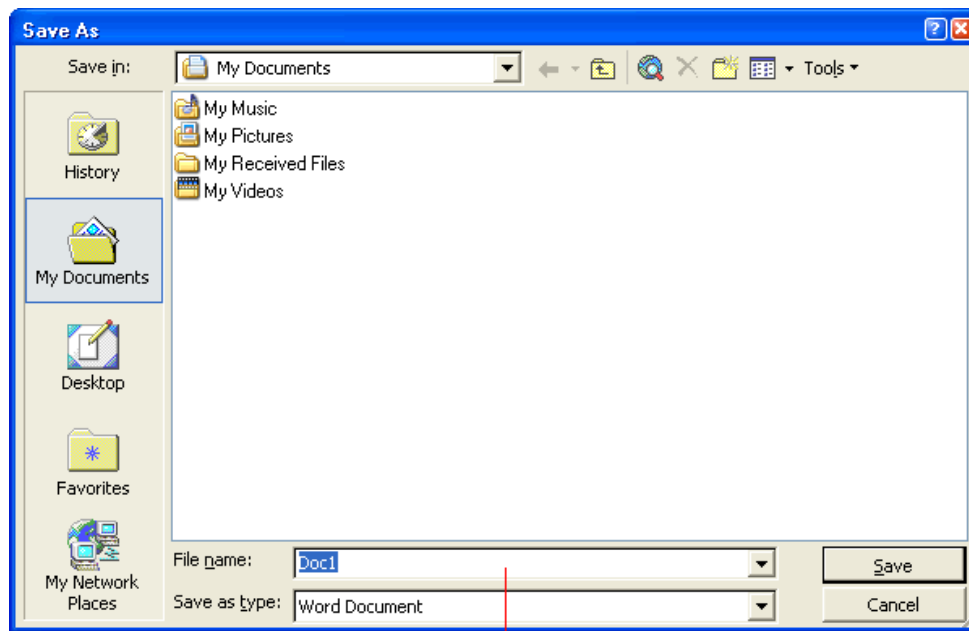
At some point you may have a finely tuned sentence or several paragraphs of ideas, facts, or figures that you would regret losing if power failure shuts your computer off. To keep your work, you have to save it, and it's never too early to do that.

Save Command

1. Click **File** from the **Menu Bar** or **Office Button** .
2. In the left column, you click **Save**. [A smaller window, called a dialog box, opens. You use this box to tell Word where you want to store the document on your computer].
3. Move the cursor to **Save**  and click it or press **Enter Key**.

Save As Command

1. Click **File** from the **Menu Bar** or **Office Button** .
2. In the left column, click **Save As**. [A smaller window, called a dialog box, opens. You use this box to tell Word where you want to store the document on your computer and the names you want give the document].
3. Type the new name into the space for '**File Name**'.
4. Move the cursor to **Save** and click it or press **Enter Key**



Word 2003's Save As dialog box

File name box


Shortcut (Ctrl + S)

1. Depress and hold **Ctrl**, press and release '**S**'.

2. In the left column, click **Save** or **Save As**. [A smaller window, called a dialog box, opens. You use this box to tell Word where you want to store the document on your computer and the names you want give the document].
3. If you select **Save As** (in step 2), type the name into the space for 'file name'. If you select **Save** (in step 2), move to **step 4**.
4. Move the cursor to **Save** and click it or press **Enter**.

After you save your document, and you continue to type, you should save your work as you go by using the shortcut, **Ctrl + S**.

Saving on desktop:

1. Click **File** from the **Menu Bar** or **Office Button** .
2. In the left column, click **Save / Save As**.
3. If you select **Save As** (in step 2), type the name into the space for 'file name'. If you select **Save** (in step 2), move to **step 4**.
4. Select Desktop from the dialog box.
5. Move the cursor to **Save** and click it or press **Enter**.


Closing Document

When you are through with the document and have saved your work, close the file.

1. Click **File** from the **Menu Bar** or **Office Button** .
2. In the left column, you click on Close.

OR


- Click on the **Close Button** on the top right corner of the window.

 **Tip:** To find your document after you close it, look in the **Recent Documents list**. Click a document in the list to open it.

Chapter 14 - Editing Word Document 1

What is editing?


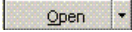
After typing a document, you will often discover that you need to make some changes to your text. Perhaps you want to rephrase or even delete a sentence.

 **Editing** is the process of correcting mistakes and making changes to the content of a document.

Editing is done with the use of tools that are found on the **Standard Toolbar, Menu Bar** or **Office Button**. Examples of these tools are; **undo, redo, cut, copy, paste**, etc. To be able to edit a document, you need to open the document.

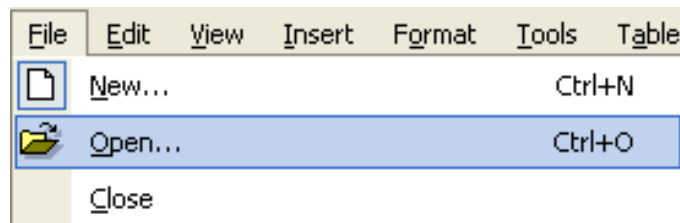
Opening Document

Using the Menu Bar to Open a Document

1. Launch **MS- Word**.
2. Click **File** from the **Menu Bar** or **Office Button** .
3. In the left column, click on **Open** [A dialog box will be displayed].
4. Locate the document to be opened.
5. Single-click on the document (**file icon**), then
6. Click the **Open** button .

OR

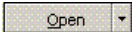
Double click on a selected document to open it.



Backstage


OR

Using the shortcut, **Ctrl + O** to Open a Document.

1. Launch **MS- Word**.
2. Press on **Ctrl + O** [A dialog box will be displayed].
3. Locate the document to be opened.
4. Single-click on the document (**file icon**), then
5. Click the **Open** button .

OR

Double click on a selected document to open it.

 **NB:** The process that is used to recall a document previously saved is termed **OPEN**.

Ways of Editing Documents

- Inserting Text
- Moving Text
- Deleting Text
- Undo
- Redo
- Spelling and Grammar Check

Inserting Text

To Insert Text,

1. Move the **Insertion Point** (the blinking bar) to where you want to insert the text.
2. Click to place the insertion point.
3. Start typing the text.

Moving Text

When a user clicks within a selected text by holding down the left mouse button, and then transfers the cursor to a different location within the same document, the text will be moved.

To Move Text

1. Select the text.
2. Click within the selected text and drag to the location where you want the text to be moved within the same document.
3. Then release the mouse.

Deleting Text

To Delete Text

1. Select (highlight) the text to be deleted.
2. Press the **Delete** key or the **Backspace** key.

OR

1. Without highlighting, move the insertion point, to the beginning of the text to be deleted.
2. Press the **Delete** key several times, until the text is deleted.



OR

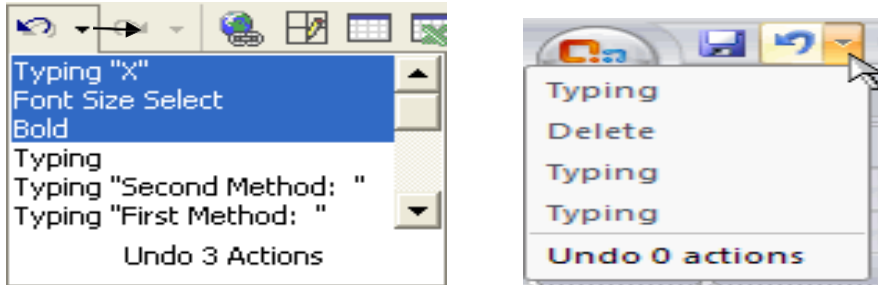
1. Without highlighting, move the insertion point, to the end of the text to be deleted.
2. Press the **Backspace** key several times, until the text is deleted.

Undo

Undo is simply a tool that is used to reverse action(s) already taken during the creation and/or editing of a document. In other words, it's a feature that lets you delete the last change made to your document. Word remembers up to 300 actions in a document and allows you to undo any or all of them as long as you haven't closed the document first.

Steps to Undo:

1. Click **Edit** on the **Menu Bar**
 2. Click **Undo**  from the **Pop-Up Menu**
- OR
- Click **Undo**  on the **Standard Toolbar**
- OR
- Use the shortcut, **Ctrl + Z**
- OR
- Click **Undo** on the **Quick Access Toolbar**



Quick Access Toolbars (word 2003 and 2007)



IMPORTANT:

✓ You cannot choose to undo one action in the middle of the list. To undo something, you did several steps back, you will have to undo everything you did after that action. If you only want to undo one action in the middle of your document, select it and delete it or type the corrected text over it.

Redo

Redo is a tool that is used to restore action(s) of the undo command / tool during the creation and/or editing of a document. The **redo** feature allows you to reverse the last undo.

Steps to Redo

1. Click **Edit** on the **Menu Bar**
 2. Click **Redo**  from the **Pop-Up Menu**
- OR
- Click **Redo**  on the Standard Toolbar
- OR
- Use the shortcut, **Ctrl + Y**
- OR
- Click **Redo** on the **Quick Access Toolbar**



Quick Access Toolbars (word 2003 and 2007)

Notice the small list arrow next to the **Redo** button. When you click it, a list of the actions you have undone appears. Remember, you cannot choose to redo one action in the middle of the list. To redo something, you did several steps back, you will have to undo everything you did after that action.

Spelling and Grammar Checker

Spelling and Grammar Checker is a feature of word that allows you to check and correct spelling, grammatical and consistency mistakes in documents.

Most word processing applications come with an in-built **dictionary** that can verify any word that you type for **spelling, grammar** and **consistency errors**. These grammars, spelling and consistency errors may not all be correct, so you can choose to ignore these error markings and keep typing or you can correct the mistakes and/or add the corrections to the Word's dictionary.

Spelling Mistakes

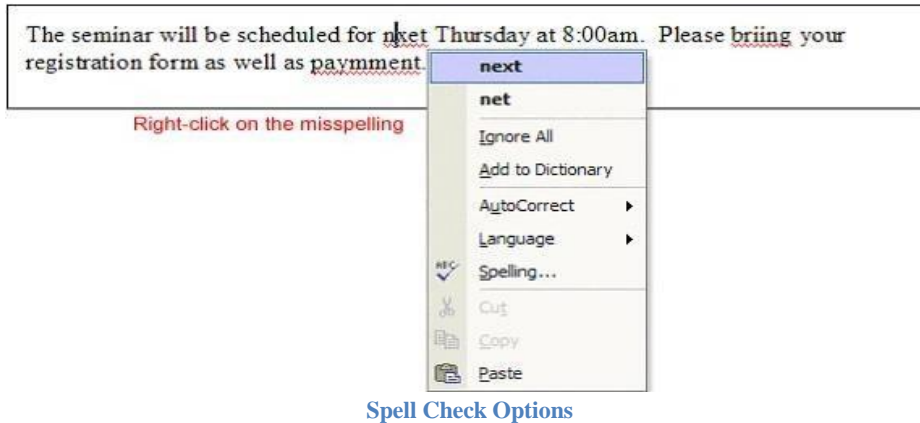
Word puts a **red wavy line** under possible spelling mistakes. If you click on the suspected misspelling, Word gives you one or more suggested corrections.

The seminar will be scheduled for nxet Thursday at 8:00am. Please briing your registration form as well as paymment.

Misspelling Example

How to Use the Spelling Mistake Checker

1. Place your I-beam over the misspelled word and right-click.
2. Select the correct spelling from the list of options that is displayed by word.

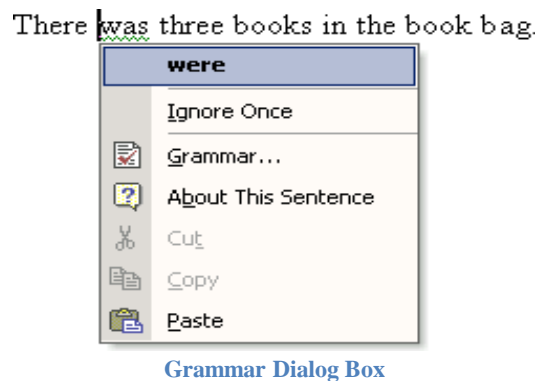


Grammatical Mistakes

Word also puts a **green wavy line** under possible grammar mistakes.

To work on suspected grammatical mistakes:

1. Place your I-beam over the misspelled word and right-click.
2. Select the correct grammar from the list of options that is displayed by word.

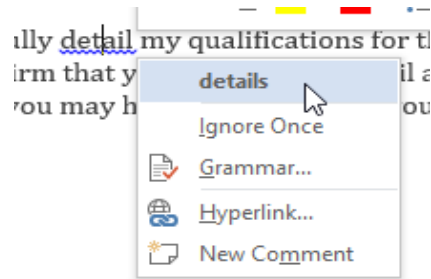


Consistency Checker

Blue wavy line that appears under text in a document indicates that the consistency checker has detected an inconsistency that you may want to look and correct.

To correct this:

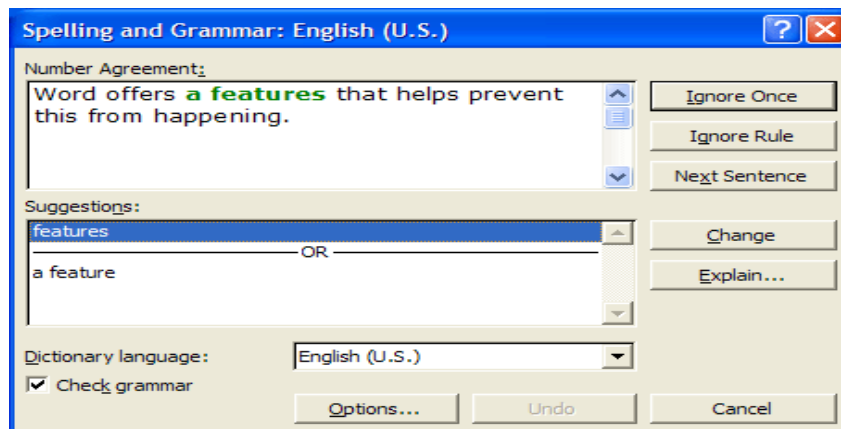
1. Right click the underlined word or phrase. [A menu will appear].
2. Select the correct spelling or phrase from the list of suggestions. [The corrected phrase will appear in the document].



Consistency Checker

Spelling and Grammar Dialog Box

Spelling and grammar dialog box can also be used to correct spelling, grammatical and consistency errors in documents.



Spelling and Grammar Dialog Box

Spelling Checker Options

- Select **Error Box** to display the error.
- Select **Bold-Faced Suggestion** to replace the incorrectly spelled word in the document. **Suggestions Box** is the box that gives you some suggestions relating the error in the error box.
- Select **Ignore** and Word ignore all future instances of this spelling in this document.
- Select **Ignore Once** to ignore reported error only once.
- Select **Ignore All** to ignore an error which has occurred several times in a text.
- Select **Change** to change all errors in the error box.
- Select **Change All** to change all errors which are the same as the one reported in the error box.
- Select **Add To Dictionary** and Word adds the underlined word to the dictionary so it won't be flagged as an error in any other document you create.
- Select **Auto Correct** to add the correct spelling to your list of words that Word automatically corrects as you type. **Auto Correct** is a feature of word processors that automatically correct misspelled words and in correct capitalization as you type. Corrections can be rejected or reversed by clicking on the Undo button on the standard toolbar immediately after the automatic correction.
- Select **Language** to specify a word as part of another language, preventing Word from seeing this word as a mistake.

- If you select **Spelling**, the Spelling and Grammar dialog box appears.

Grammatical Checker Options


- Select **Ignore** and Word ignores the grammatical mistake it believes to exist.
- Select **Grammar** and the **Grammar Dialog Box** appear. Grammar button is used to check grammatical errors as well as spelling.
- Select **About This Sentence** and the **Office Assistant** will offer you reasons as to why Word believes this to be a grammatical error.

Spelling and Grammar Dialog Box Options

- Click **Ignore Once** to ignore this one instance of the grammatical error in your document.
- Click **Ignore Rule** to ignore this grammatical error and all other grammatical errors of this type in the document.
- Click **Next Sentence** to take you to the next grammatical error listed in your document.
- Click **Change** to replace the error with what is in the Suggestion box.
- Click **Explain** to open the Office Assistant, which will offer you reasons for this error.

Resaving Edited Document

To Resave an Edited Document:

1. Click **File** from the Menu Bar or Office Button .
2. In the left column, you click **Save**.

OR

- Click **Save** on the **Standard Toolbar**

OR

- Use the shortcut, **Ctrl + S**

Difference between Save and Save As

Save and **Save As** option do the same work of saving a document but the difference between both options is that the **Save As** command every time gives you the **Save As dialog box** and you can save the file with different names also. But the **Save** option will give you the **Save As** dialog box when you are saving the document for every first time. Other times it will save the document with the previous name without giving any dialog box.

Chapter 15 - Formatting Word Document

What is formatting?

Formatting is the process of changing the appearance of text in a document. Formatting is done with the use of tools that are found on the Format Toolbar or Format Menu. Examples of these tools are; font type, font size font style (bold/italic/underline), etc.

Selecting Text

Whenever you want to edit or format text, you must select it first. **Selecting** is the process of a user placing the cursor at one end of a text, holds down the left mouse button and drag to the other end of the text.

How to Select Text

1. Position the **Insertion Point** before or after the text that you want to select.
2. Click and drag the left mouse button across the text you want to select and then release the mouse button.

OR

1. Position the **Insertion Point** before or after the text that you want to select
2. Press and hold the **Shift Key**
3. Press the **Arrow Keys** until the text is selected

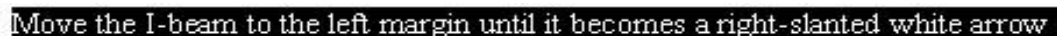
Click and drag to select text

OR

How to select a single line of text:

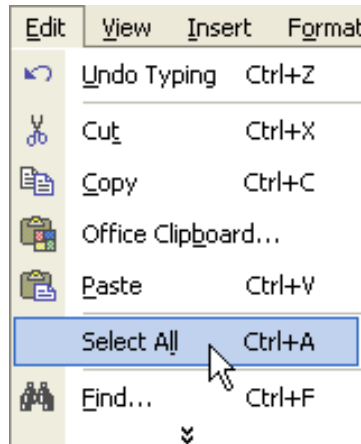
1. Move the **I-beam** to the left margin until it becomes a right-slanted white arrow pointer.
2. Position the **arrow pointer** to the left of the line you want to highlight.
3. Click once to highlight a single line.



Move the I-beam to the left margin until it becomes a right-slanted white arrow

How to select an entire text:

1. Position the **insertion point** at the beginning or at the end of the text that you want to select.
2. Click and drag up or down to select as many lines as you want to edit.



OR

- Use the shortcut, **Ctrl + A**, to highlight or select entire text.

First Method: Click and drag to select text

Second Method: Move the I-beam to the left margin until it becomes a right-slanted white arrow

Third Method: Select All

NB: Double clicking on a word in a word processing program selects the **word**.

Differences between Selecting and Highlighting

- **Selecting** is the process of placing the mouse cursor at one end of a text, hold down the left button and drag to the end of the text. It also means pressing the left button on a file, folder, icon or program.
- **Highlighting** is the process of placing the mouse cursor at one end of a text, hold down the left button and drag to the end of the text to add colour on the background of or emphasis the text.

The words selecting and highlighting are sometimes used interchangeably but they are not the same. Some of the differences are:

Selecting	Highlighting
1. Meant for Formatting purposes	1. Laying emphasis on points
2. Background vanishes after formatting	2. Background stays after highlighting
3. Temporary action	3. Permanent / long lasting action
4. Not dependent on colour	4. Dependent on colour
5. Involves one steps to accomplish	5. Involves multiple steps to accomplish

Formatting Tools

Font Type

Font type refers to how the font (or texts) will appear when a user typed them. Examples of font types:

Times New Roman
Arial
Cambria
Calibri
Broadway
STENCIL
Lucida Handwriting
Lucida Calligraphy

Examples of Font Types

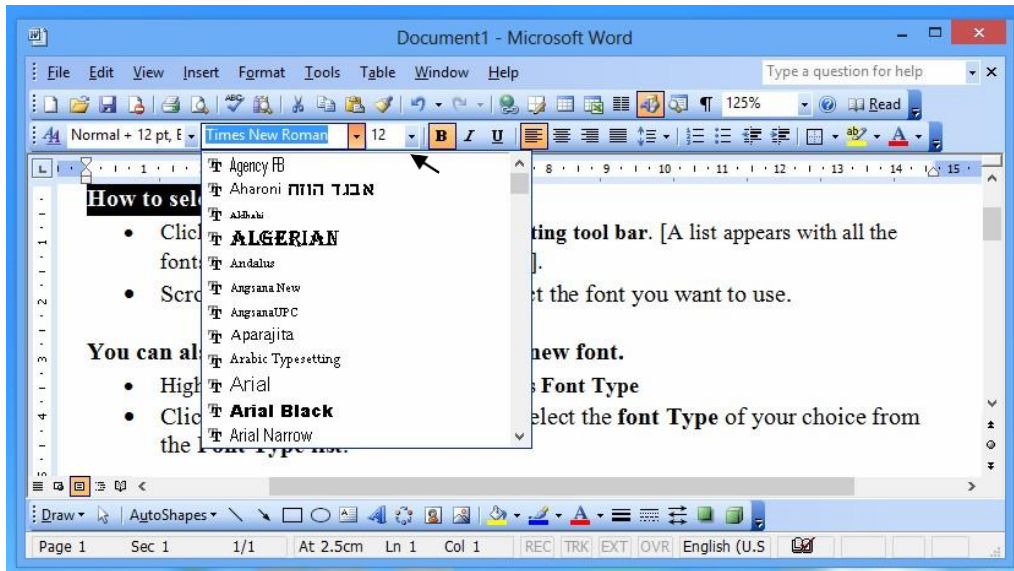
Changing the Font type of Text

1. Highlight the texts you want to change its **Font Type**
2. Click the **Font Type list arrow** and
3. Select the **font Type** of your choice from the **Font Type list**.

Selecting Font Type

1. Click the **Font list arrow** on the **Formatting tool bar**. [A list appears with all the fonts that are available on your computer].
2. Scroll up/down the **Font list** and
3. Select the **font type** you want to use.

NB: A **font** is a set of letters, numbers and symbols that share a unified design or a design of letters, numbers and symbols that are displayed in a word processor.



Changing Font Type

Font Size

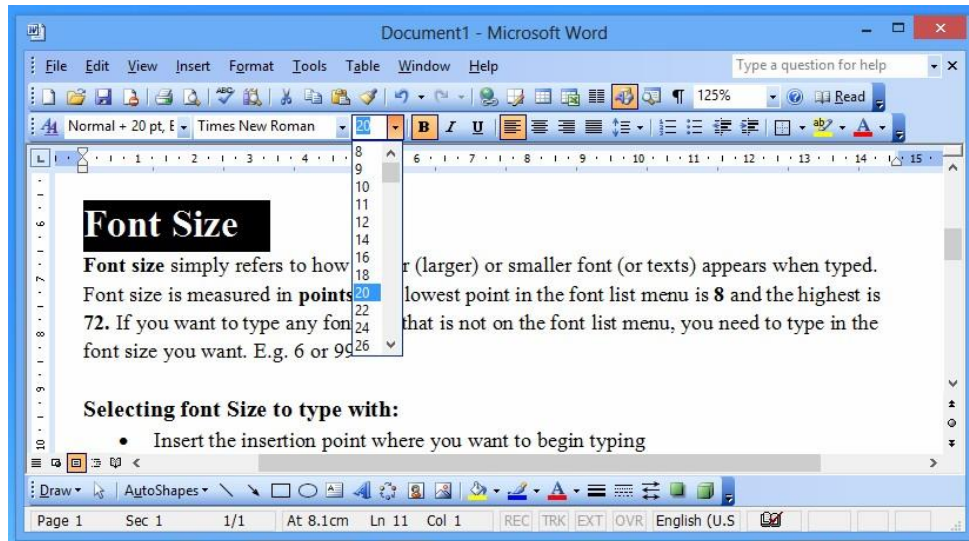
Font size simply refers to how bigger (larger) or smaller font (or texts) appears when typed. Font size is measured in **points**. The lowest point in the font list menu is **8** and the highest is **72**. If you want to type any font size that is not on the font list menu, you need to type in the font size you want. E.g. 6 or 99

Changing Font Size of Text

1. Select a text
2. Click the **Font Size list arrow**. [A list of font sizes appears].
3. Select **font size** from the **Font Size list**. [The font for the selected text will change to the font size chosen].

Selecting font Size to type with:

1. Insert the **insertion point** where you want to begin typing.
2. Click the **Font Size list arrow**. [A list of font sizes appears].
3. Select **font size** from the **Font Size list**
4. Start typing



Font Size list

Font Size - 8 points
Font Size - 12 points
Font Size - 18 points

Examples of Font Sizes

Font Style

Font style refers to emphasizing a font (or texts) in a document by making the texts darker and heavier (bold), slanted (italics) or by adding underlining.

Bold

This is selected when the user intends to make the texts darker and heavier. It's represented by the alphabet **B** on the formatting toolbar and **BOLD** in the format menu.




To Bold

1. Select (highlight) the text you want to **Bold**.
2. Click the **Bold** button **B** on the **Formatting toolbar**.
3. Click inside the page to remove the highlight.
4. The selected text will appear in **Bold**.

Typing in Bold

1. Insert the **insertion point** where you want to begin typing.

2. Click on the **Bold** button  on the **Standard Toolbar**.
3. Begin typing and the text will appear in **Bold** as you type
e.g.

Normal Text

Bold Text


Example of Bold Text

Italics


Italic is selected when the user intends to slant (make it slope to the right) a text. It is represented by the alphabet I on the formatting toolbar and Italic in the format menu.



To Italic

1. Select (highlight) the text you want to Italic.
2. Click the **Italic** button  on the **Formatting Toolbar**.
3. Click inside the page to remove the highlight.
4. The selected text will appear in *Italics*.

Typing in Italic

1. Insert the **insertion point** where you want to begin typing.
2. Click on the **Italic** button  on the **Standard Toolbar**.
3. Begin typing and the text will appear in *Italic* as you type. e.g.

Normal Text

Italic Text

Example of Italic Text

Underline

Underline simply put a line under (or underlines) a selected text. It is represented by u (an underline u) on the formatting toolbar and underline in the format menu.

To Underline

1. Select (highlight) the text you want to **underline**.
2. Click the **Underline** button on the **Formatting toolbar**.
3. The selected text will appear in Underline.

Typing in Underline

1. Insert the **insertion point** where you want to begin typing.

2. Click on the **Underline** button on the **Formatting Toolbar**.
 3. Begin typing and the text will appear in Underline as you type.
- e.g.

Normal Text
Underlined Text

Example of Underlined Text

You can apply two or all commands: Bold, Italic and/or Underline formatting to text by using the same method, except you would click the **Bold**, **Italics** and/or **Underline** buttons as done below:

Normal Text
BoldItalic
BoldUnderline
ItalicUnderline
BoldUnderlineItalic

Font Styles

To remove Bold / Italics / Underline

1. Select (Highlight) the text.
2. Click the **Bold / Italics / Underline** button on the **Formatting** toolbar.
3. The **Bold / Italics / Underline** style is removed from the selected text.

Shortcuts

- Bold – **Ctrl + B**
- Italic – **Ctrl + I**
- Underline – **Ctrl + U**

Using shortcuts

- Select the text.
- Click on **Ctrl + B/ Ctrl + I/ Ctrl + U** to **Bold/Italic/Underline** respectively

Font Color

The use of colour can add emphasis to your words and make your document easier to read.


To change the font colour, follow the steps below.

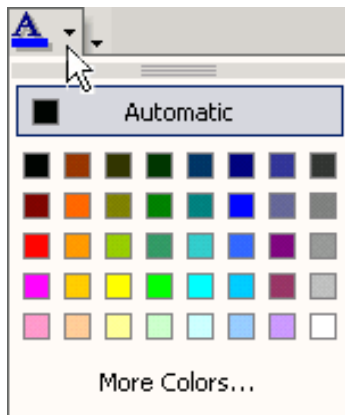
1. Highlight the text you want to change font colour.

2. Click the **down arrow** next to the **color**  icon. [It is usually displayed as the letter "A" with a red underline].
3. Select the colour you want from the **pop-up font color menu**.

NB: Moving your cursor over the various font colors. A live preview of the color will appear in the document.

Typing in Colour

1. Insert the **insertion point** where you want to begin typing.
2. Click on the **arrow** next to the **color**  icon on the **Formatting Toolbar**
3. Select the colour you want from the **pop-up font color menu**.
4. Begin typing and the text will appear in **Colour** as you type.



Font Colour Menu

E.g.

Normal Text

Changing font colour


Changing font colour

Changing font colour

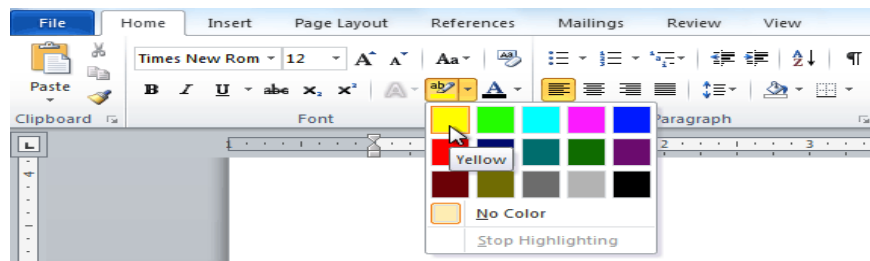
Highlighting Colour

Text Highlighting Colour tool is used to highlight points in text for easy identification.

To highlight text with color, follow the steps below.

1. Select the text you want to highlight with colour.
2. Click the **down arrow** next to the **Text Highlighting Color**  tool.
3. Select the colour you want from the **pop-up highlight color menu**.

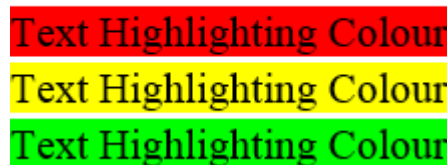
NB: Moving your cursor over the various colors. A live preview of the color will appear in the document.



Highlight Color Menu


E.g.

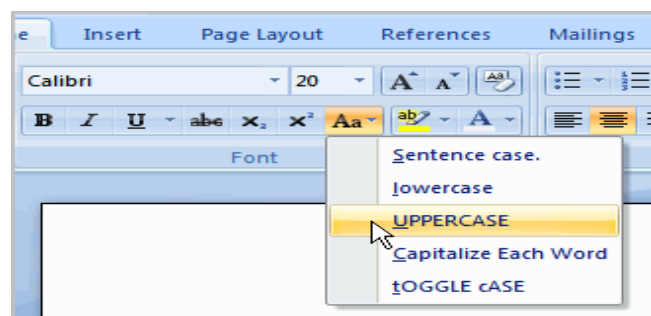
Normal Text



Text Case

Have you ever realized after typing a long paragraph that you accidentally left the caps lock on and all of your letters are in uppercase? Fortunately, you will not have to retype the text to correct this mistake. Word offers a quick solution by allowing you to choose the correct option from the Change Case dialog box.

1. Select the text you want to change the case.
2. Click the **Change Case**  command in the **Font Group** on the **Home Tab**.
3. Select one of the **Text Case Options** from the list.



Text Case Options

Text Case Options

- To capitalize the first letter of a sentence and leave all other letters as lowercase, click **Sentence case**.

- To exclude capital letters from your text, click **lowercase**.
- To capitalize all of the letters, click **UPPERCASE**.
- To capitalize the first letter of each word and leave the other letters lowercase, click **Capitalize Each Word**.
- To shift between two case views (for example, to shift between Capitalize Each Word and the opposite, cAPITALIZE eACH wORD), click **tOGGLE cASE**.

OR


- Select the text and pressing **Shift + F3**.

Font Effects

- **Superscript**: It's a text that is raised above other text on the same line and is reduced in font size.
 - **Subscript**: It's a text that is lowered beneath other text on the same line and is reduced in font size.
 - Strikethrough
 - Shadow
 - Outline
 - Emboss
 - All caps
- Etc.

Resaving Document Using the “Save As” Command

After formatting a document, the document can be resaved in the name of your choice. To save a document Using the “Save As” Command:

1. Click **File** from the **Menu Bar** or **Office Button** .
2. In the left column, click **Save As**. [A smaller window, called dialog box, opens. You use this box to tell Word where you want to store the document on your computer and the names you want give the documents].
3. Type the new name in to the space for '**File Name**'.
4. Move the cursor to **Save** and click it or press **Enter** Key

Chapter 16 - Threats to Computers

Computers are vulnerable to many threats. The main and most serious threat to computers are **viruses**.

Computer Virus

A computer virus is a program or a code that is loaded onto your computer without your knowledge and against your wish. In fact, it is a malware when executed, replicates by producing itself or infecting other programs by modifying them. Viruses infect computer programs as well as data files and boot sector of the hard drive.

All computer viruses are man-made. A simple virus can make copies of itself over and over again. Even such a simple virus is dangerous because it will quickly use all available memory and bring the system to a halt. An even more dangerous virus is capable of transmitting itself across networks and by-passing security systems.

No matter how careful you are, you can pick up computer viruses through normal web activities.

❑ Viruses do not only attack computers. They also attack phones, phablets, tablets and iPads.

Types of Viruses

- **Retro:** Retro is a virus designed to attack anti-virus software designed to delete them. It can circumvent or disable Antivirus software.
- **Boot Sector Viruses:** Boot sector viruses are viruses that infect the boot sector and make the computer or media unbootable. Once the Boot sector becomes infected, it will infect any other media such as floppy disks drive, zip drive, etc. it comes into contact with. Boot sector is the part of the hard drive that actually starts the operating system.
- **BIOS Viruses:** BIOS stands for Basic Input /Output System. It is an area of the memory that controls everything including input and output devices. It controls devices such as keyboard, mouse, CD ROMs, hard drives, video cards, etc.
- **File Viruses:** They're the most common type of viruses. They infect existing files (sometimes replacing them), causing the virus to load into memory whenever you execute an infected file.
- **Worms:** A worm is a special type of virus that can replicate itself and use memory but cannot attach itself to other programs. While regular viruses spread on the local device, worms spread quickly through existing networks.
- **Trojan Horses (Trojans):** Trojans are viruses pretending to be normal application software while performing their destructive behaviors behind the scenes. E.g. is a game that deletes files while the game is played.

❑ Other viruses are resident viruses, overwrite viruses, direct action viruses, etc.

How Computers get infected by Viruses

- Accepting without reading the ad, pop ups or prompts before proceeding. E.g. While browsing the Internet, an ad, a pop up or prompt appears that says, "Your computer (or phone) is infected with a virus, download this to clear the virus". Without fully understanding the pop-up or prompt, you quickly "accept".
- Downloading any infected software such as programs, utilities, games, updates, etc.
- Opening email attachments: As a general rule, do not open email or attachment you were not expecting to receive. Computers can get infected through that.
- Inserting or connecting an infected disk, disc or drive: Any disk, disc or drive are writable media and are susceptible to virus attacks.
- Not running latest updates: Many updates, especially those associated with Microsoft Windows are security oriented. Always keep your operating system and programs up to date.
- Pirating software, music or movies: Stop downloading pirated software, books, music or movies. You may run the risk of downloading a virus as those files and programs sometimes contain viruses.
- No Antivirus Scanner in your computer: If you are running a computer with Microsoft Windows, it's highly recommended you have some form of Antivirus software and Spyware or malware protection. This software can remove any existing viruses, spyware or malware and also help prevent future infections.

Effects of computer viruses

Some computer viruses are programmed to harm your computers by damaging programs, deleting files or reformatting the hard drive. Others simply replicate themselves or flood network traffic, making it impossible to perform any Internet activity. Even less harmful viruses as said earlier, can significantly disrupt your system performance, sapping computer memory and causing crashes.

Symptoms and Effects of Viruses in a Computer

1. Slow computer performance
2. Computer not starting
3. Erratic computer behavior
4. Unexplained data loss
5. Frequent crashes
6. Unexplained memory used up
7. Pop up ads
8. Computer restarts for no reason
9. Hijacked accounts and sending messages
10. Lockdown warnings
11. Anti-virus software won't work
12. Corruption of programs
13. Corruption of operating system

Virus protection / removal

- Use virus protection program / antivirus
- Don't open email that is suspicious
- Scan all storage media and files before opening them
- Scan all programs or applications before installing them
- Avoid opening email attachment that are not familiar
- Download from trusted websites
- Scan email attachments before opening them
- Avoid copying files and programs from untrusted sources

Antivirus Software

An antivirus is computer software that is designed to detect, prevent and remove malicious software and files from computers. It is sometimes referred to as Anti-Malware.

Antivirus were designed to detect and remove viruses hence the name. Nowadays, antivirus also provide protection from other threats such as browser hijackers, ransomware, keyloggers, backdoors, rootkits, trojans, worms, adware, spyware, etc.

Antivirus software work silently in the background and receive updates automatically. They provide scan engines that use virus definitions to examine files and programs to determine whether they are infected by viruses. The virus definitions are the key to identifying known viruses.

Computers are always vulnerable to new malware or virus attacks. This is the reason you should always use Antivirus software that update itself and definitions frequently.



Examples of anti-virus software:

1. Avast
2. Norton
3. Avira
4. McAfee
5. Kaspersky
6. AVG
7. ESET
8. Dr. Web
9. Panda
10. BitDefender
11. The Shield
12. CM Security

Other Threats to Computers

- Electricity
- Rodents
- Dust
- Liquids or humidity
- Excessive Heat
- Attempting to correct problems on your computer

Electricity (Power Faults)

Desktop Computers need power from a direct source to operate. Laptops and notebooks operate with batteries which need to be recharged when it runs down. Electric power especially from the direct source is not always reliable. Fluctuations and frequent electric power failures and faults are threats that can damage computers.

Some other similar power related problems are briefed below:

- **Brownout:** Lower voltages at electrical outlets.
- **Voltage Spikes:** Temporary voltage increases are fairly common.
- **Frequency Shifts:** While infrequent, if the line frequency varies from the normal 60 Hertz (or 50 Hertz in some countries), the power supply on the computer can be affected and this, in turn, can reflect back into the computer causing data loss.

UPS, voltage guards and regulators are used to protect computers and other appliances from electric faults.

- **UPS** stands for Uninterruptible Power Supply. UPS is used to ensure constant supply of electric power to the computer system and also used to sustain power for some time when the mains goes off. In other words, it's a gadget that provides emergency power to the computer when electric power fails.



Uninterruptible Power Supply (UPS) Gadgets

- **Voltage Regulator (Stabilizer)** is a gadget designed to maintain a constant voltage level from a source of electricity. It is used to protect the computers and other electronic appliances from power fluctuations.



Voltage Regulator Gadgets

Dust

Dust can cause short circuit and damage the computer when it settles on the circuit board. So, there is the need to protect the computer from dust by:

- Covering the computer with **Dust Cover**.
- Not setting up a computer in a dusty environment.
- Keeping computer laboratory clean.



Computers protected with Dust Covers

Rodents

Rodents such as mice and rats can attack and chew cables inside and outside the computer especially desktop computers. To prevent the computer from rodents, do not eat or litter the computer laboratory or the computer setup.



Rodent Chewing Cables

Liquids

Liquids in the form of water and drinks can also damage the computer. A drop of liquid in a computer can break the circuit board and render the computer useless. Avoid drinking near the computer setup.

Chapter 17 - Managing Files

This chapter explains how to manage files by opening, renaming, moving (cutting and copying), deleting and retrieving (restoring) files.

File management is organizing and keeping track of files and folders, helping you stay organized, so information is easily located.

File System

A **file system** is a method for storing and organizing computer files and the data they contain to make it easy to find and access them. There are two file systems used by the windows such as:

- FAT (File Allocation Table)
- NTFS (New Technology File System) file systems. The **FAT** filing system

Window Explorer

Window explorer is a tool used to manage files, folders and programs on the computer.

How to Use Windows Explorer

- Click on the start button on the taskbar.
- In the search area of the **start menu**, type **windows explorer** and press the enter key.
- The windows explorer program will open the default folder for saving files, which is called **documents**.
- Files and folders of similar contents then can be moved from one folder into another using **drag and drop** action of the mouse or **copy** or **cut** and **paste** commands.


Files

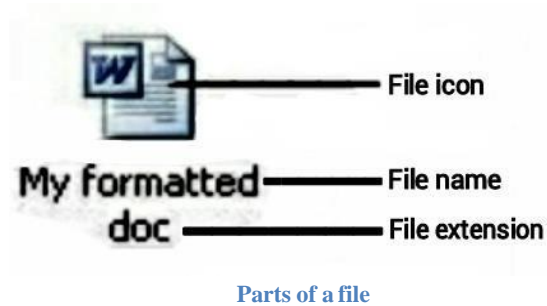
A **File** is a data stored electronically by a computer as a document, worksheet or program. This stored data when displayed on the desktop is represented by an icon called file icon. **File icon** is used to identify and access the electronically stored data.

A Closer Look at Files

There are three parts to a file. These are:

- **File icon** (picture)
- The **file name**, which can be up to 255 characters. [NB: File names cannot contain the following characters: \ / : * ? " < > |]
- The **file extension**, which is three characters long and tells Windows what type of file it is. It is preceded by a period or full stop (.) E.g. .doc, .docx, .pdf, .jpg, .png, .mp3, .mp4, etc.

 **NB:** File extension can be disabled from being displayed.



Creating a file

There are many ways to create a file on your computer. Microsoft Windows offers a way to create a **blank file**, without having to open an application, by using the **context menu**.

1. Navigate to the **folder** or **desktop**, you would like to create your file. For example, My Documents.
2. Right click an empty section of the **folder** window or **desktop**.
3. Select "New" from the **context menu**.
4. Select the **type of file** you'd like to create.
5. Enter a **name** for the newly created file.
6. Press **Enter** key or click on any free space.



Creating a Folder

Opening a file

1. Locate the file to be opened.
2. Double-click the file to open the file in the program that created it.

OR

1. Locate the file to be opened.
2. Right click the file.
3. Select **Open** from the **Pop-Up Menu**.

Ways of Managing Files

- Renaming
- Moving (copying, cutting and pasting)
- Deleting
- Restoring from Recycle Bin
- Emptying Recycle Bin

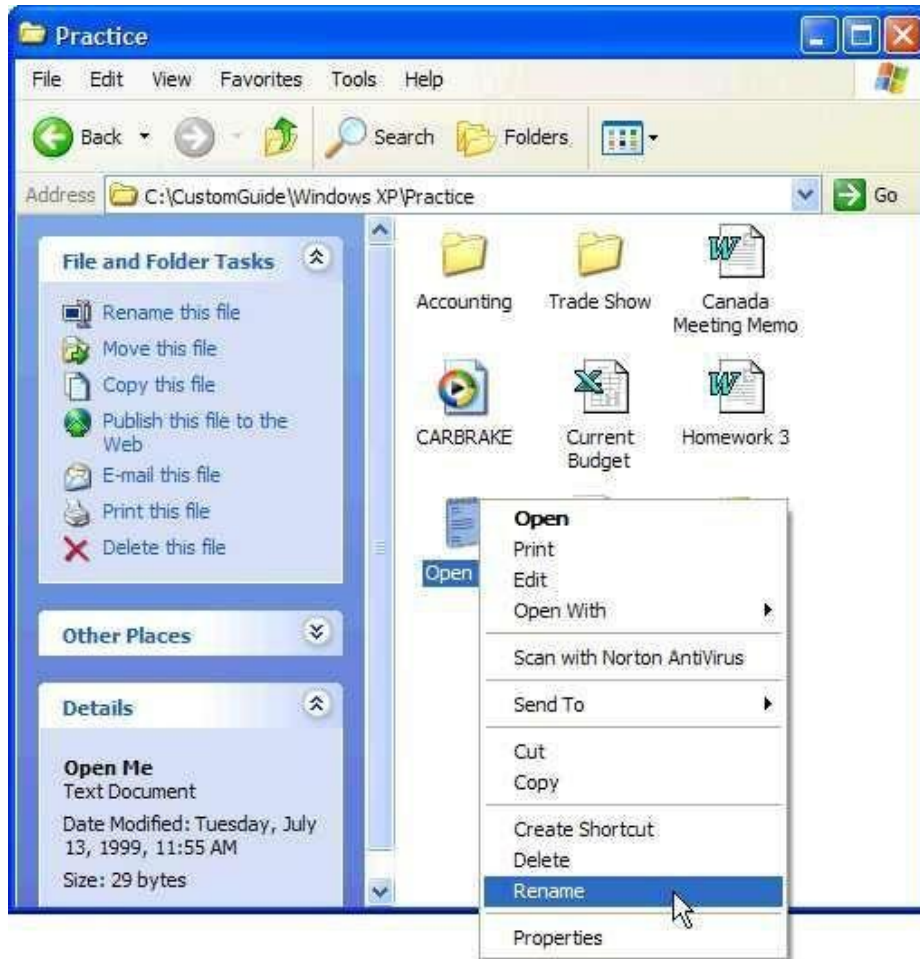
Renaming a file

Renaming means changing the name of a file. Files can be renamed in the following ways:

- Using the right click button (Rename).
- Using the right click button (Properties).
- Using the left click button.

To rename using the right mouse button:

1. Locate the file you want to **rename**.
2. Right click the file.
3. Select '**Rename**' from the **Pop-Up Menu**.
4. Type the new name. [**NB**: You may have to delete the highlighted old name before typing the new name].
5. Press **Enter** key or click on any free space.



Renaming a File

To rename using the right mouse button (Properties):

1. Locate the file you want to **rename**.
2. Right click the file.
3. Select '**Properties**' from the **Pop-Up Menu**.
4. Select General.
5. Type the new name. [**NB**: You may have to delete the highlighted old name before typing the new name].
6. Press **Enter** key or click on **Ok**.

To rename using the left mouse button:

1. Locate the file you want to **rename**.
2. Click to select the file.
3. Left click on the name of the file.
4. Type the new name. [**NB**: You may have to delete the highlighted old name before typing the new name].
5. Press **Enter** key or click on any free space.

NB: A file name can contain up to **255** characters, including spaces. File names cannot contain the following characters: \ / : * ? " < > |




Reasons for renaming a file

- To reflect the content of the file
- When two or more files have the same names
- It's less confusing when shared
- Easy to find files later
- Easy to search for

Moving (Copying / Cutting) a file

1. Locate the file you want to **Move**.
2. Right click the file.
3. Select '**Copy**'/ '**Cut**' from the **Pop-Up Menu**.
4. Locate the **folder** or **disk** you want to place the file into.
5. Right click the folder
6. Select '**Paste**' from the **Pop-Up Menu**.

OR

1. Locate the file you want to Move
2. Click the file to select it
3. Click '**Copy**'  / '**Cut**'  from the **Standard Toolbar**
4. Select the folder or disk where you want to place the file into.
5. Click **Paste**  from the **standard Toolbar**.

Copying or moving a file from one drive (e.g. Local Drive) to another (e.g. Floppy Disk)

1. Right-click the file
2. Select **Send To Floppy disk** (or any other drive) from the **Pop-Up Menu**.

Drag and Drop Method

Hold down the **Ctrl** key while you drag the file to the desired location (you might have to open another My Computer window if you want to copy it to another folder or disk).

NB:

- To **copy** a file is to make a duplicate of a file:
- To **cut** is to remove a file from one place to another and
- To **drag and drop** file from one drive to a window on the same drive is equivalent to a moving operation.

Reasons for moving a file

- To secure files.
- Get files anywhere.
- To creates a backup by copying a file.

- Save time in creating new one.
- Reclaim space by moving it to another disk.

Deleting a File

Deleting a file is a process of clearing or removing a file from the computer. To delete:

1. Locate the file.
2. Right click on the file to be deleted.
3. Select '**Delete**' from the **Pop-Up Menu**.
4. Click **Yes** from the **pop-up menu** (if prompted).

OR

1. Select the file you want to **Delete**.
2. Press on the **Delete** key on the keyboard.
3. Click **Yes** from the **pop-up menu** (if prompted).

Reasons for deleting a file

- To create a space on the disk space
- When file is infected by virus
- Removing duplicate file
- When the file is not needed
- Making sensitive information unavailable

Restoring a Deleted File

Just like a wastebasket, the Recycle Bin stores all of the files you have deleted. If you change your mind and decide you need a deleted file, it's easy to find and retrieve it.

To Restore a Deleted File

1. Right-click on the deleted file to be restored.
2. Select **Restore** from the shortcut menu.



Restoring a Deleted File

OR

1. Double Click on the file in the **Recycle Bin** to select it
2. Click **Restore** from the Pop-Up Dialog Box

Emptying the Recycle Bin

1. Right-click the **Recycle Bin**  and
2. Select **Empty Recycle Bin** from the shortcut menu.



Emptying the Recycle Bin

Chapter 18 - Intellectual Property (IP)

Intellectual Property (IP)

Intellectual Property (IP) is the property that is as a result of the creativity of the mind of a person.

Intellectual Property Right (ILR)

Intellectual Property Right is the exclusive right given to inventors for their Intellectual Property. It is also the exclusive right given to inventors on the production, sale, hiring, etc. of the things they have invented.

Types of Intellectual Property Rights (IPRs)

- Trademark
- Patent
- Trade Secrete
- Copyright

Trademark

Trademark is formally registered name, word, logo, symbol or image that is used to identify the manufacturer or distributor of products or services. The symbol for trademark is **Tm** or **®**.

Patent

Patent is an exclusive right given to inventors to manufacture, use or sell inventions for limited period of time.

Trade Secret

Trade Secret refers to the right to elements such as distinctive formula, design, pattern or strategy which may not be disclosed or used by other organizations to gain business advantage.

Copyright

As earlier on defined, **copyright** is the legal right given to inventors of original works on the **use, production, reproduction, rental** and **sale** of their works. In other words, it's the right that does not allow individuals to copy intellectual property of the original owner. It controls the production of intellectual property right.

Copyright and copyright laws are used to protect original works of inventors from unauthorized reproduction, sale, rental and use of part or entire work. To use, reproduce, rent or sell, part or entire copyright material, you need the permission of the inventor, creator or originator.

Remember that before an inventor will be protected by copyright in Ghana, the invention must be registered at the Ghana Copyright Office. The symbol for Copyright is **©**.

Product Protected by Copyright:

- Poems, plays and stories.
- Paintings, sculptures, maps, and other architectural models.
- Music albums and audio recordings in the form of cassettes and CDs.
- Movies, films and audio-visual recordings on cassettes and DVDs.
- Information broadcast by television and radio stations.
- Others are books, games, application software, pictures, podcast, logo, etc.

Copyright Laws

Copyright law is the law that protects original workers of inventors from unauthorized copying, rental, sale or distribution.

Copyright Infringements

Copyright infringement is an act of reproducing, copying, imitating, selling, distributing, using, exhibiting, etc. a copyright product or material without permission from the inventor. It is simply the act of breaking the copyright law. E.g.

- **Piracy:** Piracy is the unauthorized copying and distribution of copyrighted materials. A person who is copying and distributing without authorization is a PIRATE. Pirates produce the counterfeits of the original materials and sell them at low prices.
- **Plagiarism:** Plagiarism is the taking of someone's work or idea and claiming it as your own. It is a criminal act and is punishable under the copyright laws of Ghana.

So **Bluetoothing** music, video, application, game or picture to someone without the permission of the inventor is copyright infringement.

Reasons for Copyright Protection (Laws)

- To encourage people to be innovative and invent new things.
- To ensure that inventors gain financial benefits from their hard work.
- To increase the revenue of the Nation as it is easy to tax copyrighted materials.
- To protect the works of inventors.
- To promote development because new things will always be produced.

Consequences of Breaking Copyright Laws

- Fine, imprisonment or both on the culprits / offenders.
- Confiscation of items.
- Discourages people from inventing new things.
- Inventors lose financial rewards from their inventions.
- Government loses revenue in the form of taxes and levies.

Chapter 19 - The Internet

The world is now a global village. The Internet and other Networks have brought people and countries much closer to one another.

What is the Internet?

The Internet is the global system of interconnected computer networks that use the Internet Protocol Suite (TCP/IP) to link billions of devices worldwide. It is a network of networks that consists of millions of networks of local to global scope, linked by a broad array of electronic, wired, wireless and optical networking technologies.

Internet is simply a global network connecting millions of computers that communicate using wire or wireless technology. It is the largest network in the world and it is also called the Net.

With the Internet, it's possible to access almost any information, communicate with anyone else in the world, and do much more. You can do all of this by connecting a computer to the Internet, which is also called going online.

Network

A Network is the collection of two or more computers and hardware components that are linked together such that they can communicate using wire or wireless technology.

NB:

- ✓ **Wired Network** is a network that uses network cables or wires to connect the computers in the network. It's also called **Cable Network**.
- ✓ **Wireless Network** is a network that does not use wires or cables to connect computers in a network. It uses wireless technologies such as **GPRS, EDGE, Wi-Fi, WiMax, HSPA, infrared** and **Bluetooth** to connect the computers in the network.

The Main Types of networks

- International Network (Internet)
- Local Area Network (LAN)
- Wide Area Network (WAN)

The International Network (Internet)

Internet as defined earlier is a global network connecting millions of computers that communicate using wire or wireless technology.

Local Area Network (LAN)

Local Area Network (LAN) is a network of computers that are geographical close together (in a single building) such as school building, computer laboratory, office building, etc.

Wide Area Network (WAN)

Wide Area Network (WAN) is a combination of two or more Local Area Networks (LANs). The computers are farther apart and are connected by telephone lines or radio waves.

Other Types of Networks

- **Wireless Local Area Network (WLAN)** is a network that is geographical close together (in a single building) that uses wireless technology. That is, no wires or cables are used to connect the computers. It uses radio waves to connect the computers.
- **Personal Area Network (PAN)** is the network around a person for his/her personal use. PAN involves the use of USB cables, Bluetooth or Infrared in connecting the computers for communication.
- **Home Area Network (HAN)** is the network of digital devices in a user's home. Devices may include computer, printer, mobile devices, game consoles, remote control, etc.
- **Campus Area Network (CAN)** is a network within a limited geographical area such as university campus, company, government agency, etc.
- **Metropolitan Area Network (MAN)** is a network that spans a city or a metropolitan area.
- **Botnet** is a network of zombie computers that perform large scale malicious acts on the internet.
- **Intranet** is a restricted private network within an organization that is only used by authorized users.
- **Extranet** is a private network of an organization or company or bank that can be accessed by customers. It uses Internet technology to securely share part of a business's information or operations with suppliers, vendors, partners, customers or other businesses.

Advantages of an Intranet

- Commercial or confidential data is kept secured within the organization.
- E-mails remain private and may also be encrypted.
- High bandwidth. No connection limits unlike the Internet
- Reliable. The organization will have dedicated IT personnel to keep things running smoothly.
- Information specificity tailored to the organization or staff's needs can be published.

Advantages of Extranets

- A cost-effective method to share and trade information and all other data effectively at any time to the authorized people (internal and external) such as the customers, partners, investors, suppliers who are included within the built-up extranet.
- A platform for companies to conduct business-to-business deals. Can assist in strengthening relationships between two or more organizations.
- Useful when the staff of the company works outside the office, from their homes, or sales sites so that they can still be in with the company network with the access permission.

Services on the Internet

- World Wide Web (WWW)

- Electronic mail (E-mail)
- File Transfer
- Online chat
- Blogging
- Social networking
- Podcast
- Web search
- Internet television (Online TV)
- Internet radio (Net radio)
- Online shopping or e-commerce or Internet Banking.

World Wide Web (WWW) or Web

The World Wide Web (usually called the Web for short) is a collection of linked documents or pages stored on web servers which is distributed across the world through the **Internet**. Web is a worldwide network that makes electronic information available to users. WWW is not the same as the internet. WWW is just a sub network within the Internet.



The web is based on **Hypertext Transfer Protocol (HTTP)** and the latest **Secured Hypertext Transfer Protocol (HTTPS)**. Web developers use artificial web language called **Hypertext Markup Language (HTML)** to create Web pages for websites and store the Webpages on special storage computers called **servers**. Each webpage of a website stored on the web server has an address called **Uniform Resource Locator (URL)** or **Website address**. Computer users use **web browsers** to access the information on the web pages stored on web servers.

The purpose of a website can be almost anything: a news platform, an advertisement, an online library, a forum for sharing images, or a place for social networking!

- **How does the Internet work?** When you visit a website, your computer sends a request over wires or wireless to a server. A server is where websites are stored, and it works a lot like your computer's hard drive. Once the request arrives, the server retrieves the website and sends the correct data back to your computer. What's amazing is that this all happens in just a few seconds!

Electronic Mail

E-mail is the service on the internet used to send and receive digital messages on the internet. E-mail does not require both sender and receiver to be online at the same time before sending or receiving messages.

Remember that you need to sign-up (register) for an e-mail account and obtain an **e-mail address and password** before you can use e-mail services such as **STMP, POP**, etc.

File Transfer

File transfer is a service on the internet used to transfer files from one location to another. There are two actions during file transfer. These are downloading and uploading.

- **Downloading** means to receive data or files from the Internet onto a local computer.
- **Uploading** means to send data or files from a local computer to somewhere on the Internet.

Online Chat

Online chat is any real-time communication between two or more persons over the internet. During online chat, both sender and receiver of message must be online.

Types of Online Chat

- **Internet Relay Chat (IRC)** is a real-time text messaging designed for group or conference communication. Chat Rooms are used in IRC.
- **Chart Rooms:** is an area on the web where many people come together to communicate online. The conversations are in real time and are visible to everyone in the chart room. It is a site on the internet where users communicate in real time.
- **Instant Messaging (IM)** is an online chat service that involves text-based messages between users. E.g. WhatsApp, Telegram, etc.
- **Voice over Internet Protocol (VoIP)** is a real-time voice conversation between two or more persons on the internet.
- **Video Conferencing** is a meeting in which the participants are in different places but are connected by video and audio links. It is a real-time voice and video conversation between two or more persons on the internet. Skype is the most popular software used in video conferencing. Devices associated with video conferencing are:

Input Devices such as:	Output Devices such as:
<ul style="list-style-type: none">• Video camera• Webcam• Microphones• CD/ DVD player• Cassette player	<ul style="list-style-type: none">• Computer monitor• Television (TV)• Projector• Loudspeakers• Headphones

Social Networking

Social Networking is a service on the internet that provides a platform for individuals to engage in social activities. Examples of social networking websites are facebook.com, twitter.com, linkedin.com, pinterest.com, etc.

Web Search

Web Search is the use of web search engines to search the web for information. E.g. bing.com, google.com, yahoo.com, etc.

Blog

Blog is a page on the internet where people visit and write comments on a subject. It is like a website.

Podcast

Podcast is a multimedia file distributed over the Internet for, playback on portable media players such as iPod and personal computers.

Internet Television

Internet Television or Online TV is a service on the internet that enables digital distribution of television content on the internet.

Internet Radio

Internet Radio is a service on the internet that transmits audio streaming from radio stations on the internet.

Online Shopping

Online shopping or Electronic commerce (E - commerce) or internet banking is the use of computers for transactions involving money on the internet. When using this service, users can sell items, buy items, send and receive money safely. E.g. tonaton.com, ebay.com, amazon.com, olx.com, etc.

Terms Relating to Internet and Network

- **Server** is a computer that is designed to run services to other computers called clients in a network.
- **Web Server** is a computer used to store web pages of websites for the World Wide Web.
- **Client** is a computer that is used to access shared information on a server in a network such as the internet.
- **Home Page** is the first page or main web page of a website. It is also called Index Page.
- **Uniform Resource Locator (URL)** is the line of text used to open web pages of websites on the web. It's also known as Website Address. E.g. microsoft.com, ghanaweb.com, facebook.com, twitter.com, youtube.com, wikipedia.com, webopedia.com, dictionary.com, reference.com, etc.



Server and Clients

Protocol (Communication Language)

Protocol is the mode of communication between communication devices. **Internet Protocol (IP)** is the format of communication between computers on the internet. Examples of internet protocols are HTTP, FTP, SMTP, etc.

- **Hypertext Transfer Protocol (HTTP)** is the protocol used to transmit web pages of websites.
- **File Transfer Protocol (FTP)** is the Protocol used in file transfer service on the Internet.
- **Simple Mail Transfer Protocol (SMTP)** is the protocol used to send and receive emails.
- **Transmission Control Protocol / Internet Protocol (TCP/IP)** is a combination of two protocols. The TCP establishes connection between two computers and ensures properly delivery of data. Whereas IP is used to deliver data.

Internet Protocol Address

Internet Protocol Address (IP Address) is a sequence of numbers used to identify computers and websites on the internet. e.g. 72.14.207.99, 69.171.229.11, etc.

Web Browser

A web browser is software that allows you to find and view information on the internet. It is software used to search the web to retrieve and present information on web pages to the users. E.g. Internet Explorer (default on Windows), Chrome, Firefox, Opera, Safari, Netscape, UC, Maxthon, etc.



Chrome


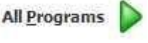
Firefox

Internet Explorer

Opera

Safari

How to Launch a Browser

1. Click the "Start Menu Button"  to display the "Start Menu"
2. Point to "All Programs" .
3. Point (select) browser of your choice.
4. Click on the selected browser (e, g. Internet Explorer) to launch it.

OR

- Double click the **shortcut icon** of a browser on the desktop.

OR

- Right click on the **shortcut icon** of a browser on the desktop and then select (click) "open" from the pop-up options.

OR

- Simply click the **browser icon**  on the "Quick Launch Bar".



Features of a browser

1. Title Bar displays the name of the displayed web page, name of web browser and the control box. As you can see from the above picture, the name of the web page is 'Welcome to MSN.com' and the name of the browser is 'Microsoft Internet Explorer'.










2. Menu Bar consists of menu of commands that controls the operations of the web browser. E.g. File Edit, View, Favorites, etc.


3. Standard Toolbar consists of buttons used to send commands to web pages. Standard Toolbar is also called Navigation Toolbar. E.g. Back, Forward, Close, Refresh, Home, Search, etc.



Internet Explorer's Standard Toolbar

Tools on the Standard Toolbar of I.E. Browser

- **Back**  moves back to the previously viewed web page
- **Forward**  instructs the web browser to move forward by one web page
- **Stop**  instructs the browser to stop loading a web page
- **Refresh**  reloads the content of a web page
- **Home**  instructs browser to display the home page of displayed website. A **home page** is the first page that is displayed on a website.
- **Search**  searches the web for specific information
- **Favorites**  show favorite web pages that the user bookmarked
- **Mail**  opens Microsoft Outlook so that the user can read and compose emails
- **Print**  sends print command to printer to print displayed web page.


4. Address Bar  is the location where website address is typed before the web pages of the website are displayed by the web browser. Webpage is the displayed page by the web browser.

5. Horizontal Scroll Bar is used to move to the left and right of a web page.

6. Vertical Scroll Bar is used to move up and down a web page.

7. Status Bar displays the operations of the web browser.

Launching a Web Page

1. Launch a web browser (see above).
2. Delete the existing address in the address bar .
3. Type the address of the web page you want to browse or view.
4. Press the **Enter** key on your keyboard.

Remember that when you launch a website using a website address or URL, you have in effect launched a webpage because a website is made up of web pages.

Uses or Importance of the Internet

The internet is used for:

- Teaching and learning
- Sending and receiving e- mails
- Browsing the WWW for any information
- Downloading software, music and videos
- Listening to music and watching videos (entertainment)
- Engaging in online banking
- Watching television and listening to radio
- It is used in Search of information.
- It is used for communicating with one another.
- It is used for teaching and learning.
- It Is used for online shopping.
- It is used for watching movies.
- It is used for playing games.
- It is used for customer support services.
- It is used for social networking. etc

Advantages of the Internet

- Information on almost every subject imaginable.
- Powerful search engines
- Download and update programs and software.
- Ability to do research from your home versus research libraries.
- Information at various levels of study. Everything from scholarly articles to ones directed at children.
- Message boards where people can discuss ideas on any topic. Ability to get wide range of opinions. People can find others that have a similar interest in whatever they are interested in.
- The internet provides the ability of emails. Free mail service to anyone in the world.
- Platform for products like SKYPE, which allow for holding a video conference with anyone in the world who also has access.
- Friendships and love connections have been made over the internet by people involved in love/passion over similar interests.
- Things such as Yahoo Answers and other sites where kids can have readily available help for homework.
- News, of all kinds is available almost instantaneously. Commentary, on that news, from every conceivable viewpoint is also available.

Disadvantages of the Internet

- There is a lot of wrong information on the internet. Anyone can post anything, and much of it is garbage.

- There are predators that hang out on the internet waiting to get unsuspecting people in dangerous situations.
- Some people are getting addicted to the internet and thus causing problems with their interactions of friends and loved ones.
- Pornography that can get in the hands of young children too easily.
- Easy to waste a lot of time on the internet. You can start surfing, and then realize far more time has passed than you realized. Internet and television together of added to the more sedentary lifestyles of people which further exacerbate the obesity problem.
- Internet has a lot of "cheater" sites. People can buy essays and pass them off as their own far more easily than they used to be able to do.
- There are a lot of unscrupulous businesses that have sprung up on the internet to take advantage of people.
- Hackers can create viruses that can get into your personal computer and ruin valuable data.
- Hackers can use the internet for identity theft.
- It can be quite depressing to be on the internet and realize just how uneducated so many people have become in today's society.

Summary

- The Internet is the largest computer network in the world, with millions of computers all over the world connected to each other.
- Web pages are stored on Web servers, which are always connected to the Internet so that people can view their Web pages 24 hours a day.
- Some of things you can do using Internet include sending and receiving e-mail, browsing the World Wide Web, posting and reading newsgroup messages, chatting with other Internet users, and downloading software.
- To connect to the Internet, you need an Internet Service Provider (ISP), a Web browser program and a phone line and modem or other connection to the Internet.
- To Connect to the Internet: Double-click the Internet Explorer icon on the desktop or click the Internet Explorer icon on the Quick Launch toolbar. If necessary, enter your user name and password and click Connect.
- To Display a Specific Web Page: Type the Web address in the Address bar and press <Enter>.
- Sometimes a Web page may not be available for viewing. This can be caused by a Web server being down where the Web page is stored, by Internet congestion, or by the Web page no longer existing. Try returning to the Web page later.
- A hyperlink is a link to another Web page or file. The pointer changes to a hand pointer whenever it is positioned over a hyperlink.
- To Use a Hyperlink: Click the hyperlink with the pointer.
- To Go Back to the Previous Page: Click the Back button on the toolbar.
- To Stop the Transfer of Information: Click the Stop button on the toolbar.
- To Refresh a Web Page: Click the Refresh button on the toolbar.

- Hacker is a person who overcomes security and gain unauthorized access to computers software and networks to steal and block information.
- Home page: It is the first page that appears when a website opened.

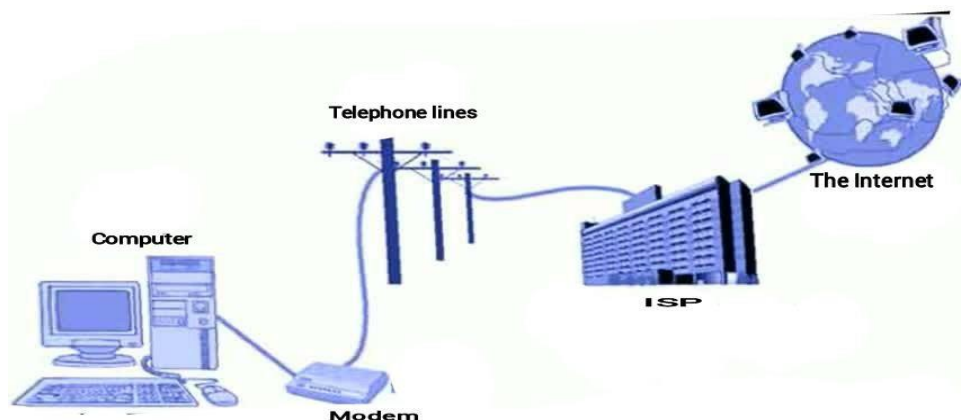
Chapter 20 - Technologies Used to Access the Internet

As said earlier, the internet can be used to access information, communicate with someone, share files, etc. But this cannot be done without an access to Internet. There are various technologies used to access the Internet. The technologies are:

- Dial-Up
- Broadband
- Wireless Internet Service Provider (**WISP**)
- Mobile Internet

Dial-Up Internet Service

Dial-up Internet access is a form of internet access that allows connectivity to the internet through a standard telephone line. It is also known as **Integrated Services Digital (ISD) Network**. It requires that you join an ISP in order to link a telephone line to a modem or router and to have access to the dial-up gateway.



If you are looking for an inexpensive (cheap) internet service, dial-up is the way to go. Because dial-up is cheap, it has the slowest type of access you can get.

Broadband Internet Services

Broadband Internet service truly is the most used form of Internet access because of its high access speeds. It is offered in four different forms: **DSL, fiber-optic, cable, wireless** and **satellite**.

Digital Subscriber Line (DSL)

DSL internet service makes its connection by utilizing unused telephone wires that cause no interruption to your telephone service. The speed you experience with a DSL connection varies with your distance from the switching station. A DSL modem and an Ethernet card are required for installation. A splitter may also be required. A splitter is a frequency filter that separates the high frequencies used for sending data upstream and receiving data downstream from the low frequency range used for voice.

Cable (Coaxial Cable)

The broadband cable connection is provided by the local Cable TV Providers. Here the cable Internet connection speed varies with the number of users on the service at a specific point in time. Cable Internet connection is good for homes. It's not usually a viable solution for businesses because of limitations which include the wiring, congestion and delay (i.e. slows down when a lot of people are using it).

Fiber-Optic

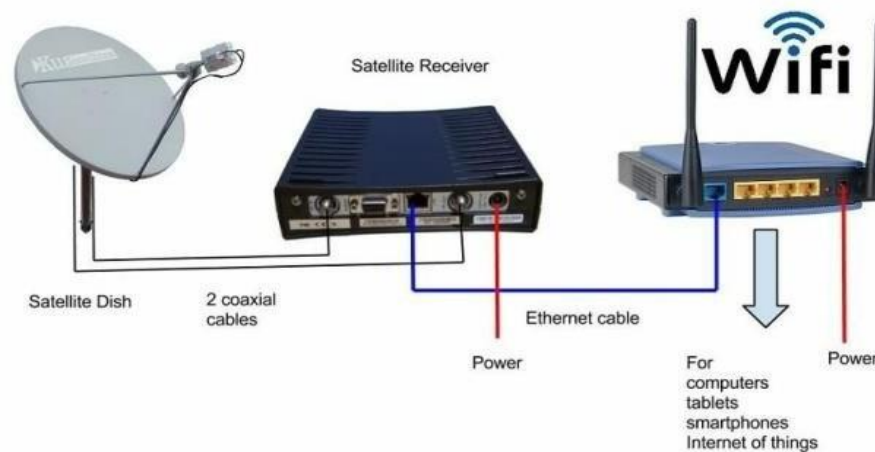
The technologies that we've talked about so far use electricity and copper wires to transmit the signal. Then along comes fiber optics. In its simplest terms, the signal is light and the medium is a special type of flexible glass or clear plastic cable. Glass allows light to travel quite well, right? Fiber-optic is the newest and fastest broadband service or Internet connection thus far.

Wireless Broadband

The ISP will connect to the Internet through a cabled connection and then broadcast that connection using radio waves. You, as the customer, would have some sort of antenna and modem setup that would let you communicate with the ISP.

Satellite Broadband

The last and slowest broadband service is provided by satellite. Satellite Internet service requires special modem that is connected to a computer and a satellite dish. Satellite Internet connection can be a one-way connection (only for downloading) or a two-way (for both downloading and uploading). Satellite connection needs a clear, unobstructed view of the southern sky to receive the signal and it is available everywhere.



Satellite Internet

Wireless Internet Service Provider (WISP)

A wireless Internet service provider (WISP) is an Internet service provider with a network based on wireless networking. Technology may include commonplace Wi-Fi. It requires several pieces of

equipment such as a wireless card or antenna, and a wireless router. WISP does not require a cable between you and your ISP.

Mobile Phone Internet

A mobile phone is a hand-held device used to send or receive voice calls and texts over a radio wave. The mobile phone has a very wide variety of uses. Some of which are:

- Voice Calls
- Text Messages
- Multimedia Messages
- Internet Services
- Short - range Communication (Infrared, Bluetooth, hotspot, etc.)

Not all mobile phones can do the above. The mobile phones that do the above computer-based services are called **Smart Phones**. Smart phones are able to do the above services by the help of a small microchip placed underneath the battery of a mobile unit called **Subscriber Identity Module (SIM)**.

Smart phones, apart from providing Internet access to itself, can also provide access to other devices such as computers through a process called tethering.

NB: Tethering refers to the ability of a smart phone to share Internet connection with other devices such as a computer. It is the use of mobile phones as modems to connect to computers and other devices that can be used to surf the Internet.

This is done through the use of **Universal Service Base (USB)** cable, **Bluetooth** or **Wi-Fi hotspot**.



Wi-Fi Router

Mobile Internet works with radio waves, similar to wireless broadband. Most people don't realize that their cell phones are actually a type of a radio.

There are several different ways that data can be sent over the cell signal. You've heard the terms **General Packet Radio Service (GPRS)**, **Enhanced Data rates for Global Evaluation (EDGE)**, **2G**, **High-Speed Downlink Packet Access (HSPA)** or **3G+**, **4G** and more recently, **LTE**. Each of those methods has a different way of sending data. 2G is an older, slower method and LTE is the newer faster method. Service providers sometimes call mobile Internet as Wireless Mobile Broadband.

Internet Service Provider (ISP)

An Internet Service Provider (ISP) is a company that is able to provide you with access to the Internet. Your ISP makes the Internet a possibility. In other words, you can have shiny computer with a built-in modem but without a subscription with an ISP, you won't have a connection to the Internet. Therefore, an ISP is your gateway to the Internet and everything else you can do online.

Examples of Internet Service providers in Ghana include:

- MTN Ghana
- Vodafone Ghana
- Airtel Ghana
- Glo Ghana
- Zip-Net
- Africa online
- Network Computer Systems (NCS)
- Surfline
- Busy Internet (now Busy)

Summary

In summary, devices that may be used when connecting or accessing to the internet are **computer, Modem, Mobile phone, Telephone, Satellite, Router, I-pad**, etc.

- A broadband or digital modem is much faster than a standard modem, with speeds up to 6,000K bps. Broadband modems include ISDN, DSL, and Cable.
- A **gateway** is a network that allows entry into another network.
- **Router** is a hardware device that allows you to connect several computers and other devices to a single Internet connection, which is known as a home network. Many routers are wireless, which allows you to create a home wireless network, commonly known as a Wi-Fi network.
- **Modem** is a connection device that allows you to connect your computer to the internet. It converts digital information into analogue information and transmits it over the phone.



Examples of Modems

Chapter 21 - Basic Storage Media, Devices and Memories


Related Terminologies

- **Storage device** is any mechanism capable of reading and writing information from and on a storage medium. In other words, it's the mechanism that is used to record and retrieve items to and from a storage medium. Some storage devices are storage media. They can read, write and store.
- **Storage medium (plural is media)** is any physical material capable of holding information either temporarily or permanently and at the same time information can be retrieved from it. One commonly used storage medium is a disc, which is round, flat piece of plastic or metal with or without a magnetic coating on which items can be read and written.
- **Memory** is a place in storage media / devices where information is read, written, stored and retrieved by the CPU. The medium and the device, together, form the memory.
- **Storage** holds items such as data, instruction and information. **Storage** is mostly non-volatile which means that items in storage remains even when power is removed from the computer.

Memory versus Storage

Memory holds data and instructions temporarily while they are being processed by the CPU. Storage mostly holds items such as data, instruction and information for **future use**.

Think of storage as a schoolbag used to hold books and memory as the top of your desk. When you need to work with a book, you remove it from the schoolbag (storage) and place it on your desk (memory). When you are finished with the book, you return it to the schoolbag.

 **NB:** From the above, one can say, **storage medium, storage device and memory** mean different things but they can sometimes be used interchangeably.

Storage involves two processes:

- **Reading (retrieving):** Reading is the process of retrieving information from a storage device.
- **Writing (storing):** Writing is the process of storing information on a storage device.

Main Storage Memory (Devices)

A computer has two main storage devices. These are:

- **Primary Storage Memory (Device):** It is an area in a computer in which data is stored for quick access by the computer's processor. It is any storage device that can store volatile data in a computer. This Primary Storage has a limited capacity but it is very important as the processing unit of the computer can act directly only on instructions and data on the primary storage. Primary storage is also known as **Main memory, Main Storage, Internal Storage or simply Memory**. E.g. Random Access Memory (RAM), cache, etc

- **Secondary Storage Memory (Device):** It is any non-volatile storage device that is internal or external to the computer that allows permanent data storage. A Secondary Storage device is also known as **Auxiliary Storage Device or External Storage Device**. E.g. Hard Disk Drive (HDD),

Random Access Memory (RAM)

RAM is a hardware device that allows information to be stored and retrieved on a computer. RAM commonly called “**memory**”, is considered primary storage, since it stores data that is directly accessible by the computer's CPU at a very high speed. It's the working environment of the computer.



RAM Chips

Data remain in RAM as long as the computer is running. When the computer is turned off, RAM loses its data. When the computer is turned on again, data are once again loaded into RAM. Because of this, RAM is considered a **volatile memory**, which means that the stored information is lost when there is no power. This also makes RAM a **temporary storage device**.

In short, the RAM is the main memory and allows you to temporarily store commands and data. The CPU reads data and command RAM to perform specific tasks. RAM is made up of **chips (integrated circuit)**, which can be expanded. RAM is like a **notebook**. You can **read** from it and **write** into it

Types of RAM

- **Dynamic RAM (DRAM)** is by far the most widely used. It stores each bit of data using a transistor and capacitor pair.
- **Static RAM (SRAM):** The term static refers to the fact that it maintains its current state without having to be refreshed on a regular basis.

■ **NB: Cache** (pronounced cash) is a small-sized type of volatile computer memory that provides high speed data access to a processor and stores frequently used computer programs, applications and data. Memory cache helps speed the processes of the computer by storing frequently used instructions and data. When the processor needs an instruction or data, it first searches in the cache.

Read Only Memory (ROM)

The ROM is the memory that retains its contents even after the computer is turned off. ROM is **non-volatile** or **permanent** memory that is commonly used to store commands such as the commands and programs. The programs which are needed to start up your computer (E.g. to boot the computer) are stored in ROM. ROM is like a **textbook**. You can **read** from it but you cannot **write** into it.



Read Only Memory (ROM) Chips

Differences between Primary and Secondary Storage Memories (Devices)

	Primary Storage Devices e.g. RAM	Secondary Storage Devices e.g. HDD
1	They are volatile	They are not volatile
2	They are expensive	They are not expensive
3	They are small in capacity	They have large capacity
4	They hold data used by the computer	They hold data used by the user
5	These are semi-conductor memories	These are magnetic and optical memories
6	They are the main memories	They are used as backup memories
7	They are working memory of the computer	They are used for storage of data in computers
8	Faster than secondary memories	Slower than primary memories
9	Computer can't run without primary memories	Computer may run without secondary memories

Types of Storage Media / Devices

- Magnetic media / Devices
- Optical media / Devices
- Flash media / Devices

Magnetic Storage Media / Devices

Magnetic storage media is any physical material capable of holding information magnetically. On the other hand, Magnetic Storage device is any device that manipulates magnetic fields on a medium in order to record audio, video or other data. Several types of magnetized media are used in computer systems, including **hard disk drives**, **floppy disks** and **magnetic tape**. It is a form of **non-volatile storage**.

Hard Disk Drive

A Hard Disk Drive (often shortened as **Hard Disk**, **Hard Drive** or **HDD**) is a **non-volatile** storage device that stores digitally encoded data on rapidly rotating rigid (i.e. hard) platters with magnetic surfaces.

It stores all programs and data in the computer. Hence the hard disk is referred to as the **Memory Bank** of a computer. The hard disk memory is **permanent** so that the programs and data are not lost when the

computer is turned off. Hard drives are **secondary storage devices** since they are not connected directly to the **CPU**. They are not as fast a RAM.

Types of Hard Disk

- **Internal Hard Disk Drive:** It is placed inside the system unit and stores the operating system of the computer as well as other programs and user files.



Internal Hard Disk Drive

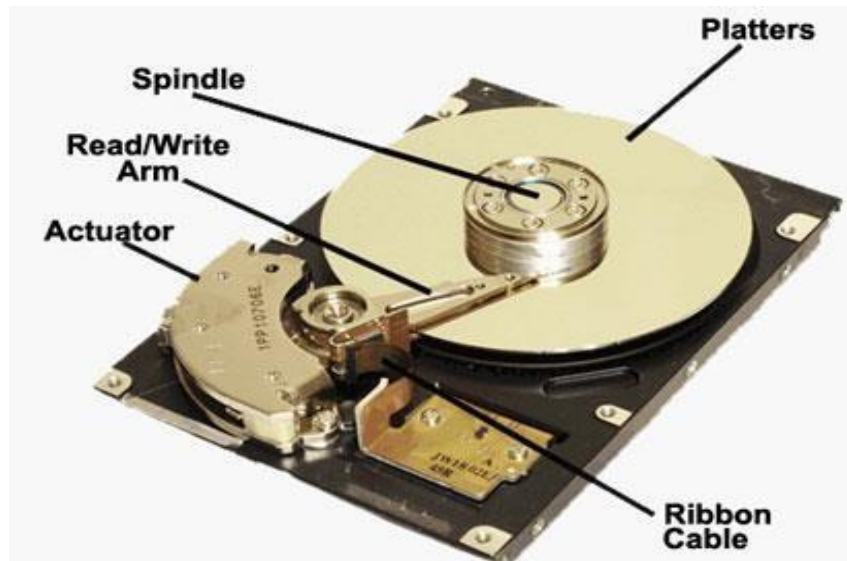
- **External Hard Disk Drive** looks and works almost like the internal one but is connected outside the system unit through a cable. The external hard disk drive is portable and can be carried from one computer to another.



External Hard Disk Drive

Parts of Hard Disk Drive

- **Platter:** Platter is a circular, metal disk that is mounted inside a hard disk drive to store data. Each platter can store data on both sides of the platter. The more the platters, the larger the storage capacity of the drive.
- **Spindle Motor:** The Spindle motor is the motor that turns the platters. Many hard drive failures occur due to spindle motor not functioning properly.
- **Actuator:** An actuator is an electronic device controlled by a motor that moves the hard drive head arm.
- **Read/Write Heads:** The heads convert the information, which is in the form of bits to magnetic pulses when it is to be stored on the platter and reverses the process while reading.
- **Logic Board:** The logic board is an intelligent circuit board integrated into the hard disk unit. **Drive Bay:** Drive Bay is an enclosure designed to protect the hard drive from the outside air, dust and other contaminants.
- **Ribbon cable:** The ribbon cable is the flexible wire that link read/write heads to the logic board.



Parts of the HDD

Floppy Disk Drive (FDD)

A Floppy Disk Drive is a computer disk drive that enables a user to save data to removable diskettes. A **5 1/4" floppy disk** was capable of storing between 360KB and 1.2MB of data, and the **3 1/2" floppy disk** was capable of storing between 360KB and 1.44MB of data.



Floppy Diskettes

Today, due to their extremely limited capacity, computers no longer come equipped with floppy disk drives. This technology has largely been replaced with CD-R, DVD-R and flash drives.

Optical Storage Media / Devices

Optical storage media is any physical material on which data is written and read with a **laser**. On the other hand, Optical storage device is any device that manipulates laser beam on a medium in order to record audio, video or other data. Optical Storage, stores data on a disc as a number of data dots (that is **'burn'**) onto the surface of the disc through a process is known as **'burning'**) that can be read using light (usually a laser beam). Each dot represents 1's and 0's (Bits of information). Data is read by shining the laser beam onto the surface of the disc.

In order to read/write data on a disc you need a 'disc drive'.



Optical Disc Drive

CD / DVD

A **Compact Disc (CD)** is a small, portable, round medium made of moulded polymer for electronically recording, storing, and playing back audio, video, text, and other information in digital form.

On the other hand, a **DVD** stands for **Digital Versatile Disc**. It looks almost identical to a CD. A single DVD can store as much information as several CDs. A DVD drive can also play the same, great movies that you can watch on a DVD player. DVD drives have replaced CD drives in computers.

CD-R / DVD-R

CD-R stands for **Compact Disc-Recordable**. The information you write or *burn* to a CD-R is permanent and can't be changed or erased. So CD-Rs are used to create musical CDs that you can listen to in a stereo system.

Re-writable DVD drives, that can record or burn information to special type of DVD are available in the market. If you have a **DVD-RW drive** you can permanently store information on a DVD-R. The information you write or burn to a DVD-R is permanent and can't also be changed or erased.

DVD-R stands for **Digital Versatile Disc-Recordable**. You can also use DVD-R to create musical and video DVDs that you can listen to and watch.

CD-RW / DVD-RW

Unlike CD-R, a **CD-RW (Compact Disc-ReWritable)** can be written to many times. You can also modify and erase information on a CD-RW many times, if you have a **CD-RW drive**, of course. On the other hand, unlike DVD-R, a **DVD-RW (Digital Versatile Disc-ReWritable)** can also be written to many times. You can also modify and erase information on a DVD-RW many times, if you have a **DVD-RW drive**, of course.

CD ROM and DVD-ROM

CD-ROM stands for **Compact Disc-Read Only Memory**. What this means is that you can only read information from a CD-ROM; you can't add new information in a way. A **CD-ROM drive** lets you install programs, run CD-ROM based programs, and play audio CDs.

DVD-ROM, on the other hand, stands for **Digital Versatile Disc-Read Only Memory**. What this also means is that you can only read information from a DVD-ROM; you can't add new information in a way.

■ **NB:** Other **optical discs** are **DVD-RAM** and **Blue-Ray Disc**.



Optical Storage Media

Initially, CDs were **read-only**, but newer technology allows users to record as well. CDs will probably continue to be popular for music recording and playback. A newer technology, the **Digital Versatile Disc (DVD)**, stores much more in the same space and is used for playing back movies.

Flash Memory / Media

Flash memory is an electronic (solid state) non-volatile storage medium that can be electrically erased and reprogrammed. It stores and retains data without any external power source on a chip. Inside the flash chip, data is stored in cells protected by floating gates. Tunneling electrons change the gate's electronic charge in a flash (hence the name), cleaning the cell of its contents so it can be rewritten. Examples are flash drives, flash cards and memory cards (SD cards).

Flash Drive

A flash drive is a portable removable and rewritable storage device that uses an integrated circuit memory chip to store data. It is often the size of a human thumb and it connects to a computer via a Universal Serial Bus (**USB**) **port**. It's also known as pen drive; memory stick or data stick.

Flash drive will only work when plugged into the USB connector and draws power from the supply provided by the connection. The device will not work unless connected to a computer or any other device. Flash drives are an easy way to transfer and store information and they are available in sizes ranging from 1 GB to 1 TB.



Flash card

Flash card are commonly used as the **film** for digital cameras and can also be read by PDAs, tablets, smart phones and other phones. There three different types of flash cards: compact flash cards, smart media cards and memory stick.



Other storage devices

SD Cards

Secured Digital (SD) card is an ultra-small non-volatile flash memory card for portable devices such as mobile phones, cameras, audio players, etc.



Adapter Plug and SD Cards

Performance of the Storage Devices

To increase the performance of the storage devices, storage system has been divided in to the several units such as;

- Primary Memory
- Secondary Memory
- Cache memory Accordingly,

The performance of the computer goes up if the collective memory (Primary, secondary, and Cache) is high.

Storage Capacity

Storage capacity is the amount of information that can be stored on a storage device. Storage capacity is measured in bytes. A **byte** is a group of **8 bits**. A **bit** can hold only one of these two values, **0** or **1**. The smallest unit of data the computer can take is **Bit**.

0	1 bit
1	1 bit
0110	4 bits
01101011	8 bits or 1 byte

Bit is an abbreviation of the expression **BI**nary digi**T**. It is called binary, since it is derived from the *binary number system*. A sequence of 8 bit is known as 1 byte as you can see in the above table.

- 8bits1 bytes
- 1024byte.....1 kilobyte (KB)

Note; 1024 bytes can be rounded to one thousand (1000) bytes for the sake of simplicity.

- 1000KB1 Megabyte (MB) ‘Is roughly 1million bytes.’
- 1000MB1 Gigabyte (GB) ‘roughly 1billion bytes.’
- 1000GB 1 Terabyte (TB).

Importance Features of Storage Media

- Some on them have cracks.
- They have sectors.
- They have data area.
- They have silver coated surfaces.
- They are non-volatile / Store data permanently.
- Capacity reckoned in terms of bytes / megabytes / terabytes.
- It has addressable units.
- It is accessed sequentially or randomly.
- Made of plastic material.
- Data are recorded on sectors with tracks.
- Each track is sub-divided into sectors.

Reasons for Storing Information / Documents

- For future use
- For safe keeping
- To save time of creating the same information in the future
- For easy access

Uses and importance of storage Devices

- They are used for making Back-Up copies of important information. (**NB:** Back-Up means copy of any information on a computer stored on storage devices).
- Storage devices make it possible to produce and distribute commercial software.
- For storing information.
- Storage devices are used for transferring or sharing information between computers
- They are used for storing software and information that you do not need to use immediately.
- Use for securing information and data.

Ways to Protecting Storage Media

- Keeping storage media in a protective jack.
- Keeping storage media away from magnetic field.
- Write-protect storage media.
- Keeping storage media away from magnetic field.
- Keeping storage media away from dust.
- Keeping storage media in a protective case.
- Keeping storage media from hot environment.

Difference between Hard Disk and Flash Drive (Pen drive)

	Hard Disk	Pen Drive
1	Much greater storage capacity	Less storage capacity
2	Usually fixed	Removable
3	Heavy in weight	Lighter in weight
4	Faster	Slower
5	It is larger (less portable)	It is much smaller (more portable)

Difference between Hard Disk and Optical Storage

	Hard Disk	Optical Storage
1	Much greater storage capacity	Less storage capacity
2	Usually fixed	Removable
3	Heavy in weight	Lighter in weight
4	Durable	Breakable
5	Faster	Slower

NB: **Formatting** a disk refers to preparing a disk for use or preparing a disk to accept data.

Summary

- Computers function based on the binary system, where **on** is represented by a one (1) and **Off** is represented by a zero (0).
- A **Bit** is the smallest memory unit. Bit stands for binary digit.

- Eight bits make one Byte. A byte equals one character (letter, number, or symbol).
- 1,024 bytes make one Kilobyte (K or KB) which is equivalent to a one-page, double-spaced letter.
- 1,048,576 bytes make one Megabyte (M or MB) which is equivalent to a novel.
- 1,073,741,824 bytes make one Gigabyte (G or GB) which is equivalent to an encyclopedia set.
- 1,099, 511,627,776 bytes make one Terabyte (T or TB) which is equivalent to a small bookstore.
- **RAM:** Stands for Random Access Memory. This is computer's main memory, which is used to process information. You can read from and write to RAM. RAM is volatile, and any data disappears when you shut off computer.
- **ROM:** Stands for Read Only Memory. This is the computer's low-level memory, which is used to perform its most basic functions. You can read from, but not write to ROM.
- **CD-ROM:** Stands for Compact Disc-Read Only Memory. A CD-ROM drive lets you install programs, run CD-ROM based programs, and play audio CDs. A CD-ROM holds about 650MB of information.
- **CD-R:** Stands for Compact Disc-Recordable. Lets you permanently write or burn information.
- **CD-RW:** Stands for Compact Disc-ReWritable. Can be written to and modified many times.
- **DVD Drive**
- **DVD:** Stands for Digital Versatile Disc. A DVD disc looks like a CD-ROM but can store much more information.
- **Recordable and ReWritable DVDs:** There are several competing, non-compatible formats out there, including DVD-R /DVD-RW and DVD+R/ DVD+RW.
- **Ripping:** is the process of copying information from a CD or DVD.
- Floppy disks are slow and can only store 1.44MB. They are all but obsolete.
- Zip and Jaz drives are removable storage devices that have features of both floppy and hard disks.
- Formatting a disk prepares it for use, so that it can be read and use by the computer's operating system. Formatting a disk erases everything on it.

Chapter 22 - Basic Input Devices and their Functions

What is an Input Device?

An input device is any hardware device that sends data to a computer, allowing interaction and control the computer. E.g. Keyboard, Mouse, Microphone, Camera / Webcam, Scanner, Light Pen, Touchscreen (Finger), Stylus, Digitizer, Barcode Code Reader, Trackball, Biometrics (Finger) Scanner, Joy Stick, etc.

Types and Functions of Input Devices

Keyboard

The computer keyboard is a wide rectangular object that is equipped with buttons on which there are letters (alphabets), numbers, and other characters and symbols. The keyboard is like a **typewriter**. It consists of a series of keys that can be pressed to input commands or letters. The keyboard is sometimes called **QWERTY Keyboard**.

The name **QWERTY** is derived from the first six letters in the top- left alphabet row. The **QWERTY layout** was originally designed for typewriters and was meant to prevent typewriter keys from jamming. QWERTY is considered inefficient because it slows typing speeds. Because of the slowness of the QWERTY keyboard, **DVORAK Keyboard (layout)** was invented.

DVORAK keyboard is designed so that the middle row keys include the most common letters. In addition, common letter combinations are positioned in such a way that they can be typed quickly.

- **Functions:**
 1. It is used to write documents
 2. It is used to navigate user interfaces in lieu of a mouse.
 3. It is used to send commands/instructions to computer.

Mouse

The computer mouse is a funny looking object that frankly looks like a real mouse. Originally, computers came with keywords without mouse. But in 1988, Dong Engelhardt invented the mouse.

The mouse is **handheld pointing device** that allows you to control the actions of the blinking item on your screen called **cursor**.

Types of mice

- **The Mechanical Mouse:** The mechanical mouse has two buttons, namely, **left click** and **right click** buttons. A **scroll wheel** has now been added to make the buttons three (3). A **roller ball** is also on the underside.
- **Optical Mouse:** Optical mouse is one of the latest innovations which operate by using an **infrared sensor**. You can identify an optical mouse by the **tell-tale red glow** emanating from its underside.
- **Cordless Mouse:** Cordless mouse, also called a **wireless mouse**, is a mouse that connects to a computer without the use of wires. Instead, the mouse uses **wireless technologies**, like **Bluetooth** or

Infrared radio waves. Usually, a **USB receiver** is plugged into the computer and receives signals from the cordless mouse. Cordless mice need **batteries** to work. An example of a cordless mouse is the Optical Mouse.

- **Trackball:** A trackball is essentially a mouse lying on its back. It consists of a **ball** held by a **socket** containing **sensors** to detect the rotation of the ball. The user rolls the ball with a finger to move the pointer. Since the whole device is not moved, a track ball requires less space than a mouse.
- **GStick:** The gStick is a computer mouse shaped like a pen. The gStick works exactly the same way as any mouse, but you hold it differently, just as you would a pen or pencil. But this means that you can easily sign your name, draw, paint or sketch, play games and much more.



Types of Mice

- **Functions:** The mouse allows the user to select objects (click), move windows (drag), open applications (double click) or scroll through long documents or Web pages.

NB: **Mouse pad** refers to a surface on which a mouse can be moved. It is typically a rectangular rubber pad covered with fabric, providing more traction than a wooden or glass desktop or table top.

Touchpad

Touchpad is a small rectangular surface that you can move your finger on it to control the movement of the mouse pointer (cursor) on the computer screen. It is a **pointing device** on laptops and notebooks. Another name for Touchpad is **Trackpad**. Like the mouse, the Touchpad has three parts (buttons). These are:

- Touch surface
- Left click
- Right click

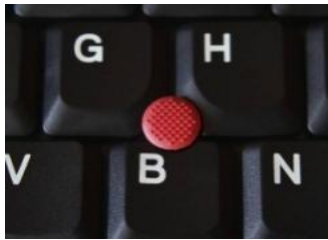


Touchpads

- **Function:** A touch pad is small, touch-sensitive pad used as a pointing device on some portable computers. By moving a finger or other object along the pad, you can move the pointer on the display screen.

Pointing Stick

Pointing stick or track point; is a pointing device that looks like a pencil-top eraser in the middle of the keyboard of laptops computer.



Pointing Stick

- **Function:** It is used for pointing.

Microphones

Microphone is an input device that is used to input sound into a computer. You hold the microphone up to a source, most likely a person's mouth, and it registers the sounds and inputs them into audio recording applications.



Microphones

- **Function:** The microphone is used for various applications like adding sound to a multimedia presentation or for mixing music. This will let you do many things, from recording a song to talking to someone on Skype.

Scanner

A scanner is a device that captures and converts documents (text, pictures, graphs, diagrams, etc.) to images. It is lot like a photocopier



Scanners

Types of scanner are;

1. Hand Held Scanners
2. Flatbed Scanners
3. Digital Camera

- **Function:** By placing a piece of media in a scanner, you can create an image file that can be opened and manipulated on the computer.

Barcode reader / scanner

Barcode reader is a hand-held or stationary input device used to capture and read information contained in a bar code. Barcode reader consists of a **scanner**, a **decoder** and a **cable** used to connect the reader with a computer. It is also called a **price scanner or point-of-sale (POS)** scanner.



Barcode reader / scanner

- **Function:** It is used to capture and read information contained in a bar code

Camera (Webcam)

Camera is an optical instrument for capturing images or recording videos. On the other hand, **Webcam** is a video camera that feeds or streams its image in real time to or through a computer to computer network.



Camera (Webcam)

- **Function:** It allows you to record and send small videos or have a video chat with someone over the Internet.

Light Pen

Light pen is input device that utilizes a light-sensitive detector to select objects on a display screen. A light pen is similar to a mouse, except that with a light pen you can move the pointer and select objects on the display screen by directly pointing to the objects with the pen.



Light Pens

- **Function:** It is used to select objects on a display screen.

Stylus

Stylus pens is an input device that is used for writing and selecting on touch resistive and capacitive screens.



Selecting with Stylus

- **Function:** These pens allow users to "write" on the touch screen much as they would a pad of paper, allowing input of handwriting, drawings and other gestures.

Digitizer

Digitizer is an input device which converts analogue information into digital form. Digitizer is also known as **Graphics Tablet** because it converts graphics and pictorial data into binary inputs.



Digitizers (Graphic Tablets)

- **Function:** A graphic tablet as digitizer is used for doing fine works of drawing and image manipulation. It allows artists to draw more naturally in a graphics application. They have a stylus that you can use to draw on a flat panel.

Joystick

Mostly used for computer games, a **joystick** is lever that moves in all directions and usually controls some type of movement on the computer. It consists of a stick on a base with various buttons that have different functions.



Joysticks

- **Function:** It is used in racing and flying games.

Game Pad

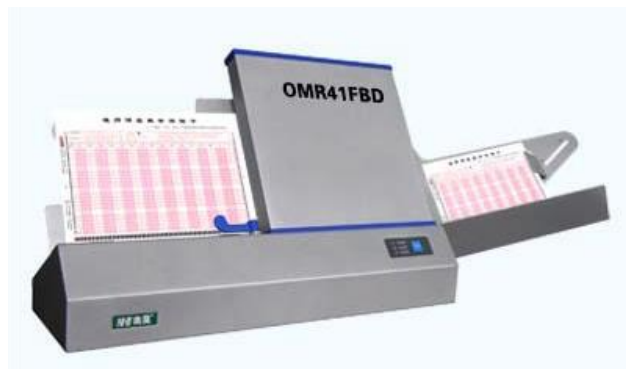
Game pad is a device with buttons and levers that moves in all directions and usually controls some type of jumps and movements on the computer.



Game Pad

Optical Mark Reader/Recognition (OMR)

An optical mark reader is a device that reads pencil marks on a specially designed paper and converts into digital form for computer usage. Optical mark readers are used for multiple choice answer sheets, where it scans the answers to the computer for analysis and grading.



Optical Mark Reader

Functions of Input Devices

1. Used to input data/information into the computer.
2. Used to give the computer commands and instructions.
3. Change human language to computer language.

Summary

- A mouse acts as a handheld pointing device and controls the actions of that blinking item on your computer screen known as a cursor.
- A keyboard lets you enter information and commands into a computer.
- A digital camera lets you take pictures and transfer them to a computer.
- The quality, or resolution of the pictures a digital camera can take are measured in megapixels, or millions of pixels (dots). The more pixels, the

- Other input devices include touch pads, track balls, light pens, scanners, joysticks, and microphones.
- input devices such as Mouse, Trackball, Joystick, Trackpad (Touchpad), Light Pen and stylus are Pointing devices.
- A CRT Monitor is an older type of monitor that looks like a television screen.
- A Flat Panel LCD Monitor is a newer type of monitor that is thin, lightweight and somewhat expensive.
- The size of a monitor is measured diagonally across the screen. Average monitor sizes range from 15-inches to 21-inches.
- The monitor refresh rate determines how quickly the monitor redraws, or updates, the image on the screen. Most monitors have a refresh rate of 72MHz or better.
- A screen saver is a moving picture that appears on your computer screen when you don't use your computer for a while.
- Some computer devices have both input and output functions. Examples include touch screen monitors, camera, and multifunction printers.

Chapter 23 - Basic Output Devices

What is an Output Device?

An output device is any **peripheral** that receives data or information from a computer for display, projection or physical reproduction. E.g. Monitor, Printer, Speaker, Headphone, Projector, Television (TV), etc.

Types of Output Devices

Monitor

Monitor is the output device that displays the information on the computer to the user. It is also a device that converts computer output into displayed text characters and graphics. The monitor is also called the **screen or Visual Display Unit**. It is like a **television (TV)**.

Types of Monitors

- Cathode Ray Tube (CRT)
- Flat Panel Display

Cathode Ray Tube (CRT) monitor: is a type of monitor that looks like the old type TV which is very heavy with a long back.



Cathode Ray Tube (CRT)

Flat Panel Display (FPD) is a monitor that is flat in front and at the back. E.g. Liquid Crystal Display (LCD) and Light Emitting Diode (LED)



Flat Panel Display

	Cathode Ray Tube (CRT)	Flat Panel Display (e.g. LCD)
1	It uses electron guns to create images.	It creates images with liquid crystals.
2	It can stand electric outages.	It screen can easy break down by electric outages.
3	Weighted, bulky and large size	Light, compact and thin in size.
4	It consumes high power.	Consumes low power.
5	Image flickering.	Image don't flicker.
6	It can be viewed in long distance.	It can be viewed in short distance.
7	It has good response.	It has slow response.

- **Function:** The monitor allows the user to see what the computer has processed.

📌 **NB:** Most Monitors are **multi-coloured or coloured**. A monitor which displays output only in one colour is called **monochrome** (also known as black and white or greyscale).

Printer

The printer is an output device that puts text and images onto a paper. It's a device that is used to produce hardcopy from softcopy on a computer. A document on the computer is called **softcopy** while a document which has been printed onto a paper is called **hardcopy**.

There are two (2) primary categories of printers:

- Impact printer
- Non-impact Printer

Impact Printer

The impact printer is a printer that prints the characters and images by using pins or hammers to strike (press) an inked **ribbon** against the paper. Examples impact printers are the line printers, daisy Wheel printers, dot matrix, etc.

Non-Impact Printer

A non-impact printer is a printer that uses **laser** or **beam** to form texts or graphics image by spraying ink or transfer marks on the paper without using ribbon. The most common non-impact printers are ink-jet printers and Laser Printers.

Laser Printer: These are non-impact page printers. They use laser lights to produce the dots needed to form the characters to be printed on a page.



Laser Printer | Laser Printer

Inkjet Printer: Inkjet printers are non-impact character printers based on a relatively new technology. They print characters by spraying small drops of ink onto paper. Inkjet printers produce high quality output with presentable features.



Inkjet Printer

Inkjet Printers make less noise because no hammering is done and these have many styles of printing modes available. Colour printing is also possible. Some models of Inkjet printers can produce multiple copies of printing also.

Plotter

A plotter is a computer hardware device much like a printer that is used for printing **vector graphics**. Instead of toner, plotters use a **pen, pencil, marker**, or another writing tool to draw multiple, continuous lines onto paper rather than a series of dots like a traditional printer. There are three different types of plotter:

- **Flatbed Plotters** - These hold the paper still while the pens move.
- **Drum Plotters** - These roll the paper over a cylinder.
- **Pinch-Roller Plotters** - These are a mixture of the two types above.



Plotter

Speaker

A Speaker is used to outputs sound from the computer. It helps us hear the sound when we play music or watch movies on our computer. Some computers come with in-built speakers while others are not. Most laptops come with in-built speakers.



Woofer and Speakers

Projector

Projector is a device for displaying video, images or computer data on a screen or other flat surface. This is normally used in presentations and seminars where there are lots of people.



Projectors

Functions of Output Devices

1. Provide processed/stored data/information to the user.
2. Indicates what the computer needs from user.
3. Change the process/stored data/information from computer language to human language.

Input & Output Devices

Some type of hardware can act as both input and output devices. Examples are **Touchscreen, Modem, Digital Camera, disk drives, facsimile (fax)**.

- **Touch Screen** is a type of monitor that displays text or images you can touch using your fingertips. When you touch the screen, its special sensors detect the touch and the computer recognizes the point/location on the screen where you touched. Touching different locations determines different information to be displayed next or what action to be taken next.



Touchscreen

- **Bluetooth** is a wireless device that is used to input and output sound from the computer. It helps us to speak and hear sound into and out of a computer (phone).



Bluetooth

- **Headphone** is a wired device that is used to input and output sound from the computer. It helps us to speak and hear sound into and out of a computer (phone).



Headphone

Chapter 24 - Managing Files and Folders

When you leave all your books on your desk, the desk becomes messy, unless you make an effort to stay organized by putting them in your bag. In order to understand file and folder management, you need to understand how your computer stores information. Filing **cabinets** store information in **files**, which are organized and grouped in **folders** and kept in big drawers in **disk drive**.

Disk Drives

A disk drive is the part of the computer that reads and writes information onto disks. There are four main types of disks/drives computers used to store their information. These are:

- **Floppy Disk:** Floppy disks are the square plastic thing that can't hold information, but they're ideal for moving small files, such as word processing documents between computers. It is in **drive 'A'** or **'B'** and it has a capacity of 1.44 MB.
- **Hard Disk:** Your computer's hard disk is its **main** filing cabinet where it stores almost all of its programs and files. It's on **Drive 'C'** and it has a capacity of over 4 GB.
- **CD-ROM:** Compact disks or CD-ROMs look like the audio discs you play in your stereo. CD-ROMs are cheap and they can store a lot of information, which is why they're used to install software for games and programs with a lot of multimedia. It's in **drive 'D'** or above and has a capacity of over 600 MB.
- **Removable Drive:** Removable storage drive has features of both **hard disks** and **floppy disks** and is almost as fast as a hard drive. It is located in the **drive 'E'** or above'. It can contain over a 100 MB of data.

Folder

A folder is virtual place / location on the computer where programs, files and other folders can be kept / located / stored / placed / organised.

Using My Computer to See What's in Your Computer

1. Double-click the My Computer icon on the Windows Desktop displays the contents of your computer.
2. Double-click a disk drive in the **My Computer** window to display the disk drive's contents.

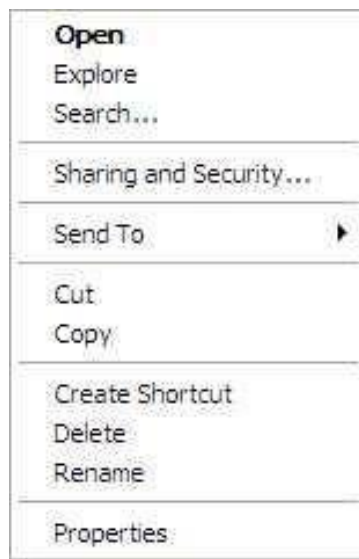


My Computer Window

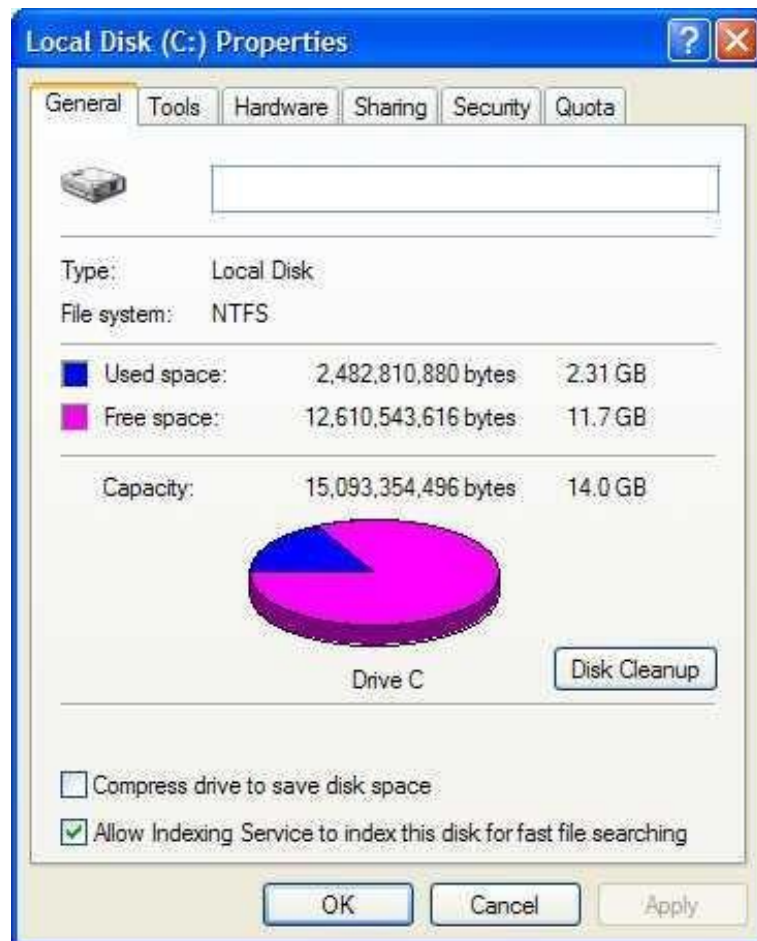
To View the Properties of Something (disk, file, folder, etc.):

- Right click the object and
- Select **Properties** from the pop-up menu.

For example, right clicking a hard drive and selecting **Properties** from the **Pop-Up Menu** would display how much space is used and left on the hard disk.



Pop Up Menu



Properties of Local Disk

After understanding how your computer stores information in **files**, **folders** and **cabinets**, let us now manage the files and folders.

Creating Folder

Creating a Folder on the Desktop

1. Right click on any empty space on the desktop.
2. Click on **New**, then **folder** from the **Pop-Up Menu**.
3. Type the name you want to give to your folder. [**NB**: You may have to delete the highlighted '**New folder**' name before typing the name].
4. Click outside your folder or press the **Enter** key on your keyboard to finish.



Creating a Folder on the Desktop

Creating a folder on a Drive or another folder

1. Open the **disk** or **folder** where you want to put the new folder.
2. Right click on any empty space on the folder or disk.
3. Click on **New**, then **folder** from the **Pop-Up Menu**.
4. Type the name you want to give to your folder. [**NB**: You may have to delete the highlighted 'New folder' name before typing the name].
5. Click outside your folder or press the **Enter** key.

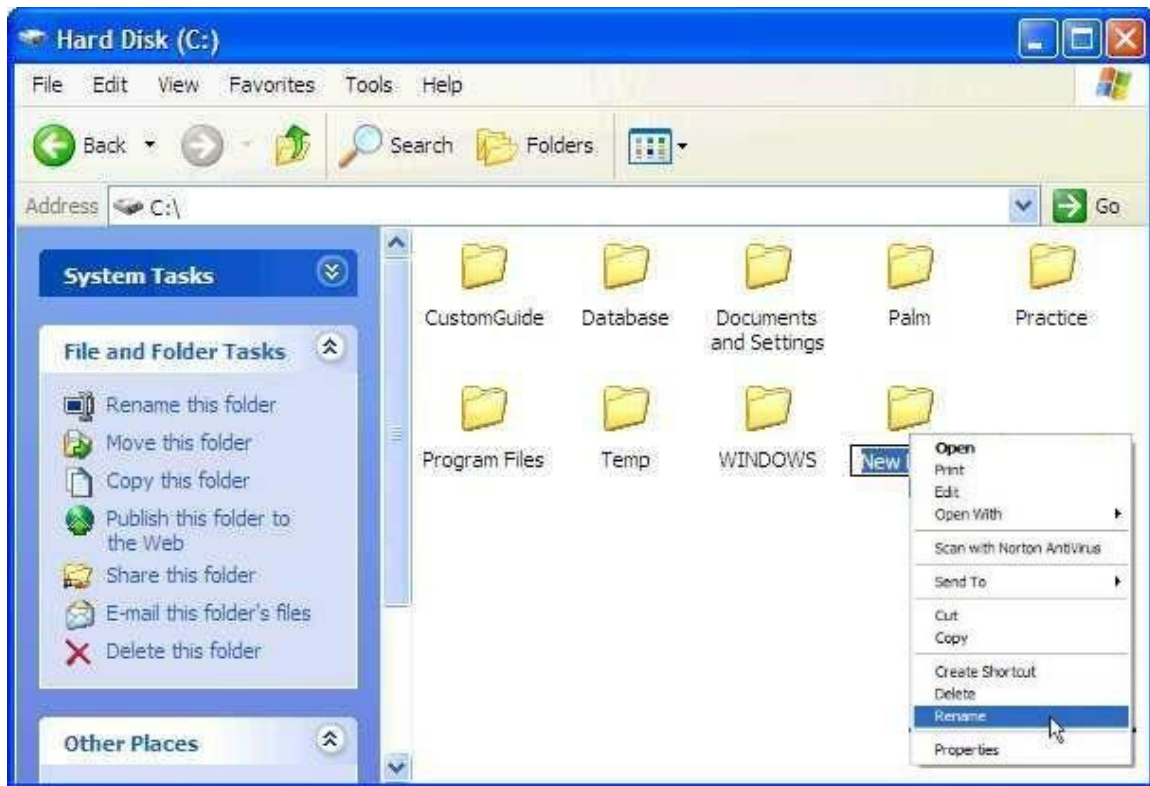
Renaming Folder

Renaming is the changing of the name of a folder or file. The default name for a newly created folder is **New Folder**. Folders, just like files can be renamed in the following ways:

- Using the right click button (Rename).
- Using the right click button (Properties).
- Using the left click button.

To rename using the right mouse button:

1. Locate the folder you want to **rename**.
2. Right click the folder.
3. Select '**Rename**' from the **Pop-Up Menu**.
4. Type the new name. [**NB**: You may have to delete the highlighted old name before typing the new name].
5. Press **Enter** key or click on any free space.



Renaming a folder

To rename using the right mouse button (Properties):

1. Locate the folder you want to **rename**.
2. Right click the folder.
3. Select '**Properties**' from the **Pop-Up Menu**.
4. Select General.
5. Type the new name. [**NB**: You may have to delete the highlighted old name before typing the new name].
6. Press **Enter** key or click on **Ok**.

To rename using the left mouse button:

1. Locate the folder you want to **rename**.
2. Select the folder.
3. Left click on the name of the folder.
4. Type the new name. [**NB**: You may have to delete the highlighted old name before typing the new name].
5. Press **Enter** key or click on any free space.

NB: A file or folder name can contain up to **255** characters, including spaces. File or folder names cannot contain the following characters: \ / : * ? " < > |

Opening Folder

1. Locate the folder you want to open.
2. **Double-click** the folder.

OR

1. Locate the folder you want to open.
2. Right click on the folder.
3. Select '**Open**' from the **Pop-Up Menu**.

Moving (Copying / Cutting) Folder and Files

Moving (Copying / Cutting) a Folder

1. Locate the folder you want to **Move**.
2. Right click the folder.
3. Select '**copy**' / '**Cut**' from the **Pop-Up Menu**.
4. Locate the **folder** or **disk** you want to move it into.
5. Right click the folder.
6. Select '**Paste**' from the **Pop-Up Menu**.

OR

1. Locate the folder you want to **Move**
2. Click the folder to select it
3. Click **Copy / Cut** button from the **Standard Toolbar**
4. Select the folder or disk where you want to move the folder
5. Click **Paste** on the **Standard Toolbar**.

Drag and Drop Method / Using the Left Mouse Button:

Hold down the **Ctrl** key while you Drag and Drop the folder to the desired location. You might have to open another drive or folder window if you want to copy it to another drive or folder.

Moving (Copying / Cutting) a file into a Folder

1. Locate the file you want to **Move**.
2. Right click the file.
3. Select '**copy**' / '**Cut**' from the **Pop-Up Menu**.
4. Locate the folder you want to move into.
5. Right click the folder.
6. Select '**Paste**' from the **Pop-Up Menu**.

Moving (Copying) a file or a folder from one drive (e.g. Local Drive) to another (e.g. Floppy Disk)

1. Locate the file or folder.
2. Right-click the file or folder.
3. Select **Send To Floppy Disk** (or any other drive) from the **Pop-Up Menu**.

Drag and Drop Method / Using the Left Mouse Button

- Hold down the **Ctrl** key while you drag the file to the desired location (you might have to open another My Computer window if you want to copy it to another folder or disk).

NB: Dragging a folder from one drive to a window on the same drive is equivalent to a **move operation**.

Deleting a folder

Deleting a folder is a process of clearing or removing a folder and its contents from the computer.

Deleting a file is like deleting a folder. To delete:

1. Locate the folder to be deleted.
2. Right click the folder.
3. Select **'Delete'** from the **Pop-Up Menu**.
4. Click **Yes** to confirm the deletion.

OR

1. Locate and Select the folder
2. Press the **Delete** key.
3. Click **Yes** to confirm the folder deletion.

Difference between files and folders

	File	Folder
1	Contains or stores data/information	Contains or stores files and other folders
2	Takes spaces on the computer storage	Takes virtually no space on the computer storage
3	Has name extension	Has no name extension
4	You can copy data from one file to another	You can only move or copy file from one folder to another.
5	You can't create a folder within a file.	You can create files or sub folder within a folder.
6	You can share files through emails or internet.	You can't share folders through emails or internet.

Summary

Using My Computer to See What's in Your Computer

- Double-click the **My Computer** icon on the Windows Desktop displays the contents of your computer.
- Double-click a disk drive in the **My Computer** window to display the disk drive's contents.

- To View the Properties of Something: Right-click the object and select Properties from the shortcut menu. For example, right-clicking a hard drive and selecting **Properties** from the shortcut menu would display how much space is left on the hard disk.

Opening a Folder

- Double-click a folder to open it and display its contents.
- To Move Back or Up to the Previous Level or Folder: Click the Up button on the toolbar, click the Back button on the toolbar, or click the Address Bar on the toolbar and select the appropriate drive or folder.

Creating and Renaming a Folder

- To Create a New Folder: Open the disk or folder where you want to put the new folder. Select Make a new folder task from the File and Folder Tasks panel, or, right-click any empty area in the window and select New → Folder from the shortcut menu or select File → New → Folder from the menu. Type a name for the folder and press <Enter>.
- To **Rename** a Folder: Click the folder to select it, select Rename this folder from the Files and Folders Tasks panel, type a name for the folder and press <Enter>. You can also rename a folder by clicking the folder to select it, selecting File → Rename from the menu, typing a name for the folder and pressing <Enter>.

Copying, Moving, and Deleting a Folder

- Move a Folder (Drag and Drop Method): Move a folder by dragging it to the desired location, such as another folder or on the desktop (you might have to open another My Computer window if you want to copy it to another folder).
- Move a Folder: Click the folder to select it and click Move this folder from the File and Folder Tasks menu, select the folder or disk where you want to move the folder and click OK.
- Copy a Folder (Drag and Drop Method): Hold down the <Ctrl> key while you drag the folder to the desired location (you might have to open another My Computer window if you want to copy it to another folder).
- Copy a Folder: Click the folder to select it, click Copy this folder from the File and Folder Tasks menu, select the folder or disk where you want to move the folder and click OK.
- To Delete a Folder: Select the folder and press the <Delete> key. Click Yes to confirm the folder deletion.

Opening, Renaming, and Deleting a File

- Double-click a file to open the file in the program that created it.
- To Rename a File: Click the file to select it, select Rename this file from the Files and Folders Tasks panel, enter the file's new name and press <Enter>. Or, right-click the file, select Rename from the shortcut menu, type a name for the folder and press <Enter>. You can also rename a file by clicking the file to select it, selecting File → Rename from the menu, typing a name for the folder and pressing <Enter>.

Copying and Moving a File

- You can copy and move files the same as you copy and move folders.
- Move a File: Click the file to select it and click Move this file from the File and Folder Tasks menu, select the folder or disk where you want to move the file and click OK.
- Copy a File (Drag and Drop Method): Hold down the <Ctrl> key while you drag the file to the desired location (you might have to open another My Computer window if you want to copy it to another folder).
- Copy a File: Click the file to select it, click Copy this file from the File and Folder Tasks menu, select the folder or disk where you want to move the file and click OK.
- To Copy a File or Folder to a Floppy Disk: Right-click the file or folder and select Send To →
- 3½ Floppy (A:) from the shortcut menu.

Restoring a Deleted File and Emptying the Recycle Bin

- To Restore a Deleted File: Double-click the Recycle Bin to open it. Click the file to select it and click Restore this file from the Recycle Bin Tasks menu. Or, right-click the deleted file and select Restore from the shortcut menu.
- To Empty the Recycle Bin: Right-click the Recycle Bin and select Empty Recycle Bin from the shortcut menu.

A Closer Look at Files and Folders

- There are two parts to a file: the file name, which can be up to 255 characters and the file extension, which is three characters long and tells Windows what type of file it is.

Typing Punctuation Marks with Shift Key

Now, let's learn how to type the punctuation marks (: ? ” ! _) that require the Shift Key.

The Colon (:)

The colon (:) is the alternate character for the Semi-Colon (;) key. To type it:

- Press and hold down **shift key**
- Then press the **Semi-colon (;)** with your right little finger.

::::: ::::: ::::: ::::: ::::: ::::: ::::: ::::: ::::: ::::: :::::

The Question Mark (?)

The Question Mark (?) is the secondary character for the Forward Slash (/). To type it:

- Press and hold down **shift key**.
- Then press the **Forward Slash (/)** with your right little finger.

????? ?????? ?????? ?????? ?????? ?????? ??????

The Double Quotation Marks (“)

The Double Quotation Marks (“) is the alternate character for the Single Quotation Mark (‘) key. To type it:

- Press and hold down **shift key**.
- Then press the **Single Quotation Mark (‘)** with your right little finger.

“””””” “””””” “””””” “””””” “””””” “””””” “”””””

The Exclamation Mark (!)

The Exclamation Point / Mark (!) is the secondary character for the **1** key. To type it:

- Press and hold down **shift key**.
- Then press the **1** key with your left little finger, reaching up and to the left of the **Q** key.

!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!! !!!!!!!

The Underscore (_)

The Underscore (_) is the secondary character for the hyphen (-). To type it:

- Press and hold down **shift key**.
- Then press the **hyphen (-)** with your right little finger, reaching up and to the right of the **P** key.

■ **NB:** The difference between the **underscore** () and the **hyphen** (-) is that the underscore is a character that originally appeared on the typewriter and was primary used to underline and the hyphen is a character that is used to form compound words. A continuous typing of underscore without a space in between will create a line hence it is sometimes call the **underline key**. The hyphen is also sometimes called the **dash** or **minus**.

Chapter 26 - Typing Symbols

In this lesson we will learn how to type the symbol characters. You have already learned how to identify them in previous lessons, but now we will be learning how to type them.

We will begin by revisiting the punctuation keys you just learned in the previous lesson.

,,,,, ;;;;: ::::: ?????? '""' ///// '""""""' ----- _ _ _ _ _ !!!!!

The Ampersand (&)

The Ampersand or and (&) which is the secondary character for the **7** key. To type the & key:

- Press and hold down **shift key**.
- Then press the **7** key with the right index finger, reaching up and to the left of the **U** key.

&&&&& &&&&& &&&&& &&&&&

The Asterisk (*)

The Asterisk (*) is the secondary character is for the **8** key. To type the * key;

- Press and hold down **shift key**.
- Then press the **8** key with the right middle finger, reaching up and to the left of the **I** key.

******* ***** ***** ***** ***** ***** *******

Parenthesis ()

Let's learn to parenthesize with the (and) characters! The open (left) parenthesis, (, uses the same key as the **9** key, and the close (right) parenthesis,), uses the same key as the **0** key. You will reach the (key with the right ring finger, above and to the left of the **0** key, and type it while holding the Left Shift Key.

(((((((((((((((((((((((((((((((((((((((((

The) key is typed with the right little finger, reaching above and to the left of the **P** key, and is also typed while holding the left shift key.

))))))))))))))))))))))))))))))))))))))))))))))))))))))))))

The Dollar Sign (\$)

The dollar sign, \$, uses the same key as the **4** key. Type it with the left index finger while holding the right shift key. It is located to the upper left of the **R** key.

\$\$\$\$\$ \$\$\$\$\$\$ \$\$\$\$\$\$ \$\$\$\$\$\$ \$\$\$\$\$\$ \$\$\$\$\$\$ \$\$\$\$\$\$

Chapter 27 - Internet Etiquette (Netiquette)

What is Internet Etiquette?

Internet Etiquette is a rule of acceptable behaviour on the use of the Internet. It also refers to the rules and regulations that are laid down to govern the use of the Internet. Internet Etiquette is simply known as Netiquette.

NB: Etiquette is a rule of acceptable behaviour. It also refers to rules and regulations that govern the behaviour that is socially acceptable.

Rules and regulations in Using Internet

- Do not respond to flame as it will lead to "flame war". **Flame** is a rude, insulting or threatening email message. Flame war occurs when flames are replied with flames.
- Avoid pornography on the Internet.
- Avoid sending spam.
- Respect the **Intellectual Property Rights (IPR)** of people. **IPR** refers to the rights of original work in the literary domain. Therefore, do not copy, distribute, sell or use copyrighted materials.
- Avoid phishing. **Phishing** is the practice of creating fraudulent email messages or website in order to trick Internet users into revealing personal or financial information.
- Do not shout. Type in lowercase (small) letters. **Shouting** means typing in uppercase (capital) letters.
- Respect other people's privacy.
- Reply to emails promptly.
- Look good in the Internet.
- Do not use the Internet to steal (sakawa.)
- Always be brief on what you write.
- Use appropriate language.
- Avoid internet fraud. **Internet Fraud** is the use of internet to cheat or steal from other users.

Spam

A **Spam** is an unsolicited but identical email messages sent to numerous recipients. It normally contains promotions and adverts.

How to avoid spam

- Do not forward an email message when it is not necessary
- Enter only relevant email addresses when composing and sending email messages.
- Don't click on **Reply All** when you don't want to address all recipients in the original email message.

Internet Privacy

Internet Privacy is the privacy or security level of personal data publish in the internet. It deals with the protection and maintaining sensitive and private data of users on the Internet.

Protecting Internet Privacy


- Do not access and read messages that are not meant for you.
- Do not send or ask for sensitive and personal information such as credit card, etc.
- Do not disclose your password to other users.
- Do not ask for passwords f other internet users.
- Do not access websites and other resources without authorization.

Pornography

Pornography is the portrayal of sexual subject matter for the purpose of sexual arousal. It also refers to displaying explicit sexual images, videos or literature.

Avoiding Pornography

- Do not search or access pornographic websites and materials such as videos, pictures, novels, etc.
- Do not forward pornographic websites and materials such as videos, pictures, novels, etc.
- Report any pornographic material you receive to authority.
- Close unwanted pornographic pop-up windows immediately.
- Do not search for irrelevant topic.

 **NB:** A pop up window is a small web page or advert that is launched automatically when you visit some websites.

What is Computer Laboratory?

A computer laboratory is a room or building where many computers have been assembled for the purpose of teaching and engaging students in practical lessons of computing.

Rules and Regulations on the use of the Computer Laboratory

- Always keep the computer laboratory neat.
- Do not eat or drink in the computer laboratory.
- Do not take or steal anything from the laboratory without permission.
- Do not ON or OFF the computer without permission.
- Do not install programs in the computer.
- Do not play with the gadgets e.g. mouse, printer, etc.
- Do not make noise in the laboratory
- Do not connect devices such as flash drives, to the computer without permission.
- No illegal copying of any material in the computer.

- Surf (browse) safely.
- Do not move the computer, chairs and tables, and other laboratory equipment and cables.
- Do not change the computer settings.
- Respect other people in the laboratory.
- Do not use computers in the laboratory to send or check your emails.

Chapter 28 - Creating E-mail Account

What is E-mail?

Email stands for **Electronic Mail**. Email is a network communication system used to transmit messages from one networked computer to another over the Internet. In other words, an email is a method of exchanging digital messages between people using digital devices such as computers, tablets and mobile phones.

Email requires **Simple Mail Transfer Protocol (SMTP)** for the transmission and receiving of messages. However, user client level mail applications typically use **SMTP** only for sending messages to a mail server for **relaying**. For retrieving messages, client applications usually use either **IMAP (Internet Message Access Protocol)** or **POP3 (Post Office Protocol 3)**.

E-mail clients

An **email client** is a computer program used to access and manage a user's email. It is also referred to as an **e-mail reader** or a **Mail user Agent (MUA)**. It can refer to any system capable of accessing the user's email mailbox, regardless of it being a mail user agent, a relaying server, or a human typing on a terminal. In addition, a web application that provides message management, composition, and reception functions of emails is also sometimes considered an email client, but more commonly referred to as **webmail**.

Examples for some popular locally installed email clients:

- Microsoft Outlook
- IBM Lotus Notes
- Pegasus Mail
- Mozilla's Thunderbird
- KMail in the Kontact suite
- Evolution
- Apple Inc.'s Mail.

Examples for some popular web-based email clients:

- Gmail
- Yahoo!
- Outlook.com
- mail.com
- Lycos mail

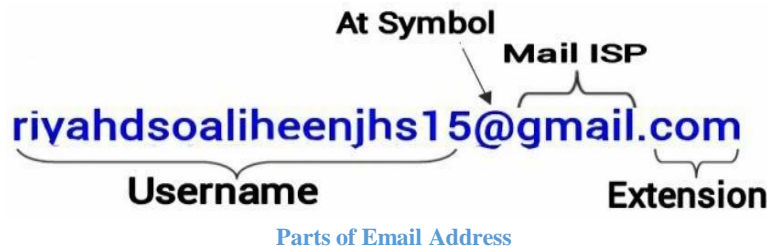
Many internet service providers provide a webmail client as part of the email service included in their internet service package.

Components of E-mail

- **Email Address or Username or User ID:** Just like you need to know a person's postal address if you want to send them a letter, you need to know a person's e-mail address if you want to send that person an e-mail message. Email address is mostly written in small letters. E.g. riyahdsoaliheenjhs15@gmail.com, husein2010@ymail.com, etc.
- **Password:** A password is a secret code known to you only that prevents other people from accessing your account and reading your emails.

Parts of E-mail Address

- Username or User ID e.g. riyahdsoaliheenjhs15, husein2010, ibrahim.alhassan, etc.
- The @ symbol
- The mail ISP or e.g. gmail, ymail, hotmail, outlook, etc.
- The extension, **.com**



NB: The mail ISP and the extension together make the **domain name**.

Creating E-mail Account

To effectively make use of email, there is the need to create an email account. To do this:

1. Launch a browser e.g. Firefox, Internet Explorer, Google Chrome, Opera, etc.
2. Type in the mail **ISP** website address. e.g. gmail.com, ymail.com, outlook.com, hotmail.com, etc.
3. Click on **Sign Up** to display a form (NB: **Sign Up** means to register).
4. Complete the form:
 - Enter all mandatory fields (First Name, Last Name, Gender, etc.)
 - Type in your desired **Email Address**
 - Choose a secure **Password** (at least 8 characters, mixing letters, numbers, lower and uppercase, and using special characters).
 - Select your **Security Question** and type in your Answer.
 - Verify your registration by typing the characters in the **captcha** in the space provided.
5. Click the "**Accept**"- Button underneath
6. Click on "**Create My Account**".



Create an Account

If you already have a Google Account, you can [sign in here](#).

Required information for Google account

Your current email address:
e.g. myname@example.com. This will be used to sign-in to your account.

Choose a password:
Minimum of 8 characters in length. [Password strength:](#)

Re-enter password:


- Stay signed in
- Enable Web History [Learn More](#)

Location:

Birthday:
MM/DD/YYYY (e.g. "4/2/2012")

Word Verification: Type the characters you see in the picture below.




Letters are not case-sensitive

Terms of Service: I agree to the Google [Terms of Service](#) and [Privacy Policy](#)

Google Mail (Gmail) Registration Form

YAHOO! Yahoo! | Help

Get a Yahoo! ID and free email to connect to people and info that you care about.

Already have a Yahoo! ID?
[Sign In](#)
[Can't access my account](#)

Name
Gender
Birthday
Country
Postal Code


Select an ID and password

Yahoo ID and Email @
Password Password Strength
Re-type Password

In case you forget your ID or password...

Alternate Email
Secret Question 1
Your Answer
Secret Question 2
Your Answer

Type the code shown



By clicking the "Create My Account" button below, I certify that I have read and agree to the Yahoo! Terms of Service, Yahoo! Privacy Policy and Mail Terms of Service, and to receive account related communications from Yahoo! electronically.

Copyright © 2010 Yahoo! Inc. All rights reserved. Copyright/IP Policy | Terms of Service | Guide to Online Security
Code verification technology developed in collaboration with the Captcha Project at Carnegie Mellon University.
NOTICE: We collect personal information on this site. To learn more about how we use your information, see our Privacy Policy

Data is provided for informational purposes only, and may not be accurate. Yahoo! shall not be liable for any errors or delays in the content, or for any

Yahoo Mail (Ymail) Registration Form

Email Folders and their Purposes

- **Inbox:** An inbox is the main folder where incoming mails get stored in. It is also the destination to which electronic mails are delivered. It is just like the **post office box** in the postal system.

- **Outbox:** an outbox is a folder where outgoing electronic mails are temporarily stored. Once the e-mail is delivered, it is moved to '**sent**'.
- **Sent:** Sent or **sent message** is folder where e-mails that have been delivered are kept.
- **Draft:** Draft is a folder where e-mail messages that are being composed or yet to be sent are stored.
- **Trash:** Trash is the folder where e-mails deleted from the inbox are saved.
- **Spam:** Spam is simply **unsolicited bulk mail**. It is also known as **junk e-mail**. That is, email you don't want or need.

Email Terminologies

- **My account:** To keep a private record of all mails/ messages sent, received and drafted.
- **Compose:** To create a new message/ document / mail to be sent.
- **Attach:** To add/ fix an already existing document on a storage media to a current message to be sent.
- **Sign up:** To register for the first time on an email application or to create a new email account.
- **Sign in:** To have access to your e-mail account, computer system or website.
- **Sign out:** To close or exit your e-mail account, computer system or website.
- **Carbon Copy:** To input the email address(es) of secondary recipients of an email message, such that the copy will also be visible to another recipient(s).
- **Blind Carbon Copy:** To input the email address(es) of secondary recipients of an email message, such that the copy will not be visible to the main recipient(s)
- **To:** To input the email address(es) of the main recipient(s) of an email message.
- **Subject:** To input the main theme / title / heading of an email message

Information that can be transmitted Using Email are:

- Text
 - Audio
 - Videos
 - Pictures or Images
 - Programs /Applications
- Etc.

Email etiquettes

Do you know that similar to internet etiquette, we need to follow some etiquette when sending emails which is important.

Email Etiquette is a rule of acceptable behaviour on the use of the **Email**. It also refers to the rules and regulations that are socially acceptable, laid down to govern the use of the **Email**. e.g.

- **Message should be concise and to the point.** Reading a long mail will give a boring experience to the reader and it will be a de-motivating fact too.
- **Be polite and courteous as you would be face-to-face.**

- **Avoid writing in CAPITALS.** Typing in capital letters is considered as SCREAMING and it is offensive.
- **The subject should be meaningful.** If it is a short description of the mail you are writing, then it will give a brief idea to the reader.
- **In order to make it clear break-up your mails into paragraphs.** Small chunks are better understood by the human brain than long paragraphs.
- **Make it more personal.** It will draw more attention from the reader.
- **Before sending your mail read your mail again and again.** Because there is a chance for improvement always, isn't it?
- **Make sure whether the reader to whom you are sending the mail will understand the abbreviations and emoticons you have used.** Abbreviations like BTW (By the way) and LOL (Laugh Out Loud) are certainly easier for you to type but sometimes it might be difficult for the person who is reading it.
- **Avoid spam**

Importance of Email

- Bulk messages can be sent and received easily.
- The messages can be saved for future use.
- It provides security for confidential information.
- Information received through email does not expire.
- It is a fast medium for the transmission of information.
- You may attach files, documents, images and other media to an email.
- You can access your email from anywhere with Internet connection kept on.
- It is very economical (many e-mail accounts are completely free!).
- Messages are secured since the owner only knows the password of his/her e-mail account.
- To send job applications.
- For sending official information and communication.
- To send academic papers.
- To advertise new products.
- It is more private and reliable form of information.
- It provides enhanced features such as file attachment, rich text, and format and delivery confirmation.

Chapter 29 - Editing Word Documents 2

Often in word processing, you will need to transfer information from one document to another. Instead of having to retype or replace this information, **Word** allows you to move a block of text, such as a word, sentence, paragraph, page, document or graphic. **Cut**, **Copy** and **Paste** are time-saving features and are located on the **Standard Toolbar**.

Cut, Copy and Paste in Word

Cut 

Cut simply means to remove (select) texts or objects and place it on the clip board for it to be pasted in a new location. Any time you **cut** an object, it is placed in a temporary storage area called the **Windows Clipboard**.

Copy 

Copy simply means to select texts or objects and place it on the clipboard for it to be pasted in a new location

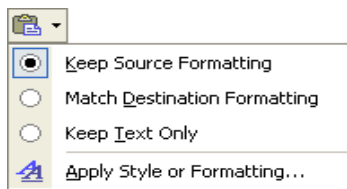
Paste 

Paste simply means to place the contents of the clipboard to a new location.

Paste Options

Once the item has been pasted, you can determine the formatting by clicking the Paste Options that appears just below your pasted selection. Check or deselect any of the following options:

- **Keep Source Formatting:** This maintains the text formatting of the original document.
- **Match Destination Formatting:** This format the pasted text to match the text formatting in the document in which it was pasted.
- **Keep Text Only:** This removes any graphics you may have copied along with the copied text.
- **Apply Style or Formatting:** This allows you to choose a specific format from the styles and formatting menu.

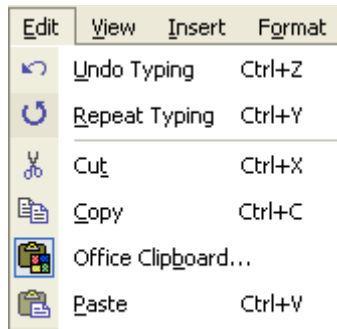


Paste options

How to Cut/Copy and Paste Using the Edit Menu

1. Select (Highlight) the text or object you want to **cut**.
2. Select **Edit** from the **Menu Bar**.
3. Select **Cut/Copy** from the **Pop-Up Edit Menu**.
4. Move the **Insertion Point** to where you want to place the text or object.
5. Select **Edit** from the **Menu Bar** again.

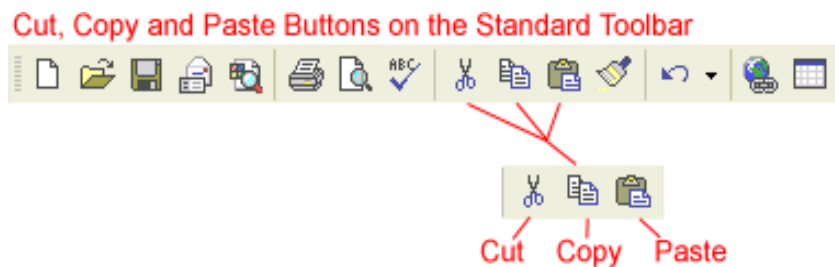
6. Select **Paste** from the **Pop-Up Edit Menu**.



Partial view of Word 2003's Edit menu

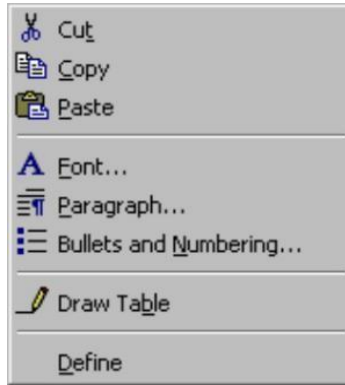
How to Cut/Copy and Paste Using the Standard Toolbar

1. Select (Highlight) the text or object you want to **cut**.
2. Click the **Cut/Copy** button on the **Standard Toolbar**.
3. Move the **insertion point** to where you want to place the text or object.
4. Click the **Paste** button on the **Standard Toolbar** to paste the text or object.



How to Cut/Copy and Paste Using the Right Click Button.

1. Select (Highlight) the text or object.
2. Right click on the selected text.
3. Select **Cut/Copy** from the **Pop-Up Menu**.
4. Move the **insertion point** to where you want to place the text or object.
5. Right click on the place.
6. Select **Paste** from the **Pop-Up Menu**.



Pop Up Menu

How to Cut/Copy and Paste Using Shortcuts

1. Select (Highlight) the text or object.
2. Press **Ctrl + X** (to **Cut**) or **Ctrl + C** (to **Copy**).
3. Move the **Insertion Point** to where you want to place the text or object.
4. Press **Ctrl + V** (to **Paste**).

NB:

- **Copying** information is very similar to **cutting** information. Both commands put your selected information in the Clipboard where you can then paste it to a new location. *The only difference between the two commands is that **Cut command** deletes selected information when it copies it to the clipboard while the **Copy command**, copies the selected information to the clipboard without deleting it.*
- **Copy-and-Paste** is **appropriate** when data that has already been inputted has to be duplicated (copied) in another part of the same document or in another document.
- **Cut-and-Paste** is **appropriate** when data that has already been inputted has to be moved/ transferred to another part of the same document or to another document.

Drag and drop

The **drag-and-drop** method of **moving items** allows you to move selected text and graphics using your mouse.

To drag and drop:

1. **Select the item** you wish to move.
2. Place the **mouse pointer** anywhere on the selected items without clicking.
3. Click and hold the **left** mouse button until the **insertion point** changes into a **white arrow pointing up to the left**.
4. **Drag** the selected text to its new location.

To drag items between programs:

1. Arrange the program windows so **both files** are open and visible. You must be able to see the items you want to drag and the location where you want to drop it.


2. Select the item and click the **left** mouse button to drag the item to the new location.

Clipboard

The clipboard is a place where text or objects **cut** or **copied** are held or saved. It is a buffer used for short-term storage and/or data transfer between documents or applications used by cut, copy and paste operations.

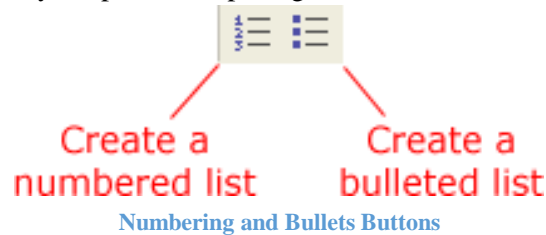


Resave Edited Document

1. Click on **File** on the **Menu Bar** or **Office Button** .
 2. In the left column, click **Save**.
- OR**
- Click **Save** on the **Standard Toolbar**.
- OR**
- Use the shortcut, **Ctrl + S**.

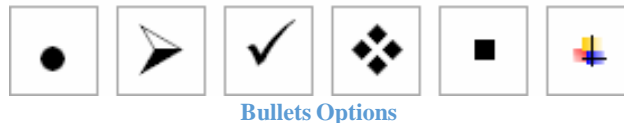
Chapter 30 - Formatting (Bullets and Numbering)

Word lets you make two types of lists: **bullets and numbering**. **Bullets and Numbering** are indications such as symbols, numbers, alphabets, etc. placed mostly at the beginning of a paragraph in a document. It aims at helping readers to identify the points in a passage.

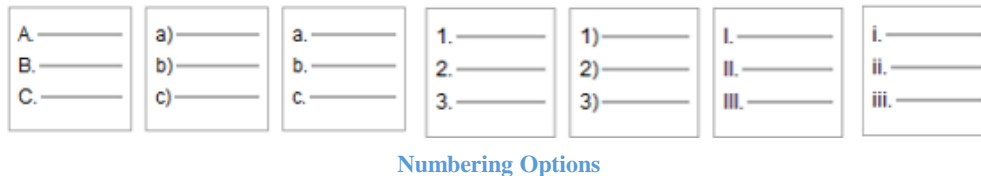


Bullets and Numbering

A **bullet** is any symbol that is used to highlight items in a list. It is usually a black circle but it can be any other symbol. Use bullets to list items that do not have to be in any particular order. Examples of bullets are:




Numbering are numbers, numerals, alphabets, etc that are used to highlight items in a list. Use numbering when information must be in a certain order.



You can use the default bullets and numbering settings by clicking the appropriate button on the **Formatting** toolbar.

To create a bulleted list:

- Click the **Bullets**  Button on the **Formatting toolbar**.
- Type the first item on your list and press **Enter** Key.
- The next line will begin automatically with a new bullet.
- Type the next item on your list and press **Enter** Key.
- When your list is complete, press the **Enter** key twice to stop the bulleted list.

To create a numbered list:

1. Click the **Numbers**  button on the **Formatting toolbar**.

2. Type the first item on your list and press **Enter** key.
3. The next line will begin automatically with the next number.
4. Type the next item on your list and press **Enter** key.
5. When your list is complete, press the **Enter** key twice to stop the numbered list.

If you have already typed your text, you can add Bullets or Numbering by:

1. Selecting the text (created list)
2. Click the **Bullets**  or **Numbering**  Button on the **Formatting toolbar**.

NB:

- Remove **Bullets** and **Numbering** by placing the insertion point to the right of the bullets or numbering and press **backspace** (you will not be able to place your insertion point to the left of the bullet).
- If you want to change a bulleted list to a numbered list (or vice versa), select the entire list and click the appropriate button.
- To create a **line break** between items in a bulleted or numbered list, place your cursor where you want the line break and press **Shift + Enter**.

Bullets and Numbering Dialog Box

Word offers you many other options for your bullets and numbers other than the default that you have seen so far.

You can view the type of bullets and numbers available to you by opening the **Bullets and Numbering Dialog Box**.

1. Select the text you want to turn into a list.
2. Click **Format** on the **menu bar**.
3. Select **Bullets and Numbering**. The Bullets and Numbering dialog box appears.
4. Click the **Bulleted tab** to view bullet options or the **Numbered tab** to view number options.
5. Select the type of **bullets** or **numbers** you want
6. And click **OK**.

The Bullets and Numbering dialog box also offers you outline numbered options. By clicking the Outline Numbered tab, you can view templates for creating an outline. The List Styles tab allows you to create your own list style using similar alignment, bullets and characters.

Chapter 31 - Formatting (Alignment of Text)

Alignment of Text

Alignment determines the appearance and orientation of the edges of the paragraph: left-aligned text, right-aligned text, centered text, or justified text, which is aligned evenly along the left and right margins. For example, in a paragraph that is left-aligned (the most common alignment), the left edge of the paragraph is flush with the left margin.




Text Alignment Buttons

Aligning text can be invaluable when trying to format your document to meet certain standards. Most documents have text that is left aligned. However, if you were creating a greeting card or advertisement, you might need to know how to center align, right align or justify your text.


Left Alignment

Left align is the **default** in **Word**. All selected items (text, numbers and inline objects) are aligned to the left-hand margin with a ragged right edge. (See picture below)

1. Select the text you want to align.
2. Click the **Align Left**  button on the **Formatting Toolbar**.


This paragraph is left aligned. This paragraph is left aligned. This paragraph is left aligned. This paragraph is left aligned. This paragraph is left aligned. This paragraph is left aligned. This paragraph is left aligned.

Left Alignment

 Notice how each line is a different length. In most cases your documents will be left-aligned.

Center Alignment

All selected items (text, numbers and inline objects) are aligned in the center, leaving space on both sides.

1. Select the text you want to align.
2. Click the **Align Center**  button on the **Formatting toolbar**.


This paragraph is center aligned. This paragraph is center aligned. This paragraph is center aligned. This paragraph is center aligned. This paragraph is center aligned. This paragraph is center aligned. This paragraph is center aligned.

Center Alignment

The above text in the picture is centered. You can see, each line of text is centered between the margins. Centered text is very useful for aligning text in document titles, advertisements and /or flyers.

Right Alignment

All selected items (text, numbers and inline objects) are aligned to the right-hand margin with a ragged left edge.

1. Select the text you want to align.
2. Click the **Align Right**  button on the **Formatting toolbar**.


This paragraph is aligned right. This paragraph is aligned right. This paragraph is aligned right. This paragraph is aligned right. This paragraph is aligned right. This paragraph is aligned right. This paragraph is aligned right.

Right Alignment

This text is right-aligned. Notice how each line is a different length. Right-aligned text can be useful in some situations, especially when aligning address in a letter.

Justify


All selected items (text, numbers and inline objects) are aligned to both the left and right margins. Justifying text gives the selected items a straight edge margin on both the right and left sides.

1. Select the text you want to align.
2. Click the **Justify**  button on the **Formatting toolbar**.

This paragraph is justified. This paragraph is justified. This paragraph is justified. This paragraph is justified. This paragraph is justified. This paragraph is justified. This paragraph is justified.

Justify

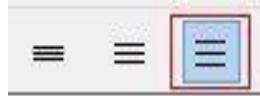
Although justified text looks neat and tidy, the extra spaces between words can get distracting in long paragraphs. Books, however, always used justified margins. Justifying text might make the last line of text in a paragraph considerably shorter than the other lines.

 **NB:** You don't have to select text before aligning it. You can select the appropriate alignment before you begin typing.

Chapter 32 - Formatting (Line Spacing)

Line Spacing

Document can be formatted to show a number of line-spacing options. The most common spacing options are **single spaced** and **double spaced**.



Line Spacing Buttons



A **double space** means sentences contain a full blank line (the equivalent of the full height of a line of text) between the rows of words. By **default**, most programs have **single spacing** enabled, which is a slight space between each line of text, similar to how this paragraph looks.

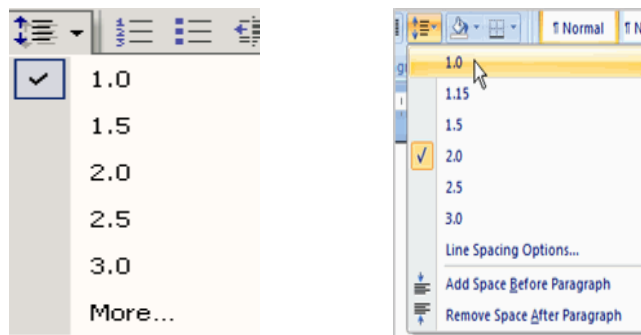
To format line spacing the Menu Bar or Format Menu

1. Click **Format** on the **menu bar**.
2. Select **Paragraph**. [The Paragraph dialog box appears].
3. Click the **Indents and Spacing** tab.
4. In the **line spacing drop-down menu**, you can select **1.0 (single)**, **1.5**, **2.0 (double)**, etc.
5. Click **OK**.

OR

To format line spacing Using the Formatting Toolbar

1. Select the text you want to format.
2. Click the **Line Spacing**  button on the **Formatting Toolbar** [or the Paragraph  group on the **Home** tab].
3. Select an option from the **Drop-Down Menu**.



Line Spacing Drop-Down Menu (Word 2003 and 2007)

OR

To Format Line Spacing Using the Paragraph Dialog Box

1. Select **Line Spacing Options**. [The Paragraph dialog box appears].
2. Use the **Line spacing drop-down menu** to select a **spacing option**.
3. Modify the before and after points to adjust line spacing as needed.

4. Click OK.

Examples:

Single-spaced Text


This is text that has been single-spaced. Most documents are either single-spaced or double-spaced. Single-spaced text is usually reserved for body text because of its easy readability.

Double-spaced Text

This is text that has been double-spaced. Most documents are either single-spaced or double-spaced. Double-spaced text is great to use when there is a possibility of someone proofreading your work. The extra space allows more room for comments.

Resaving Document in Folder


After typing, editing or formatting a document:

1. Click **File** from the **Menu Bar** or **Office Button** .
2. In the left column, click **Save As**. [A smaller window, called a dialog box, opens].
3. In the dialog box that pops up, **select a folder** or **create a new folder**. [To create a new folder, click the drop-down arrow in the **Save** inbox, click the **New Folder** icon or **Create New Folder** icon in the **Save As dialog** box. You should see a new yellow folder appear in the main area of the **Save As dialogue** box, with some blue **highlighting** for you to type in the name of the folder and click **Enter** key].
4. Double click on a folder or the folder created.
5. You may choose to **rename** the document by typing the name in to the space for '**File Name**'.
6. Move the cursor to **Save** and click it or press **Enter** Key.

Chapter 33 - Drawing Toolbar (Lines and Shapes)

In this lesson, you will learn how to insert a shape and format it by changing its fill colour, outline colour, shape style, and shadow effects. Additionally, you will learn to apply 3D effects to shapes that have 3D option.

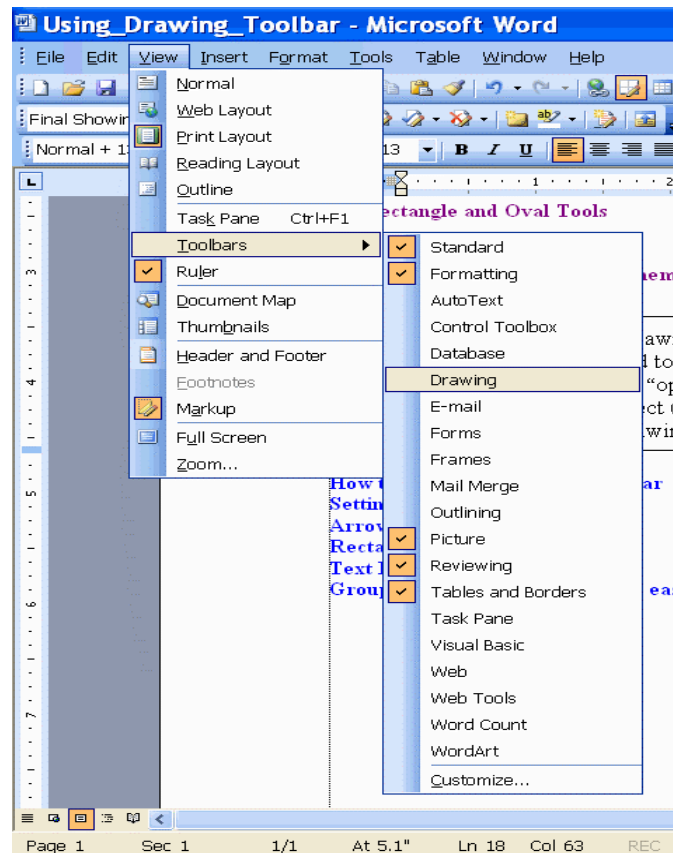
Drawing Toolbar

 **Drawing Toolbar** is a collection of tools that are used to create graphic objects in documents.

Displaying the Drawing Toolbar

To display or open the **Drawing Toolbar**:

1. Click on **View** on the **Menu Bar**
2. Select **Toolbars**
3. **Check mark** next to drawing cascading **Toolbars Sub-Menu**.



Opening the Drawing Toolbar

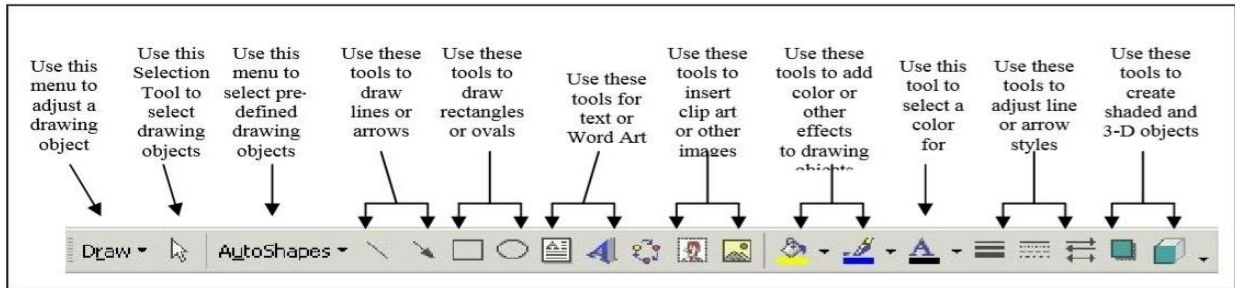
OR

1. Click the **Drawing** button on the **Standard Toolbar**.
2. The **Drawing Toolbar** will appear.



Drawing Tool Button

When the Drawing toolbar is open, it is usually displayed at the bottom of the *Word* window (lower left, above the **Start** button).



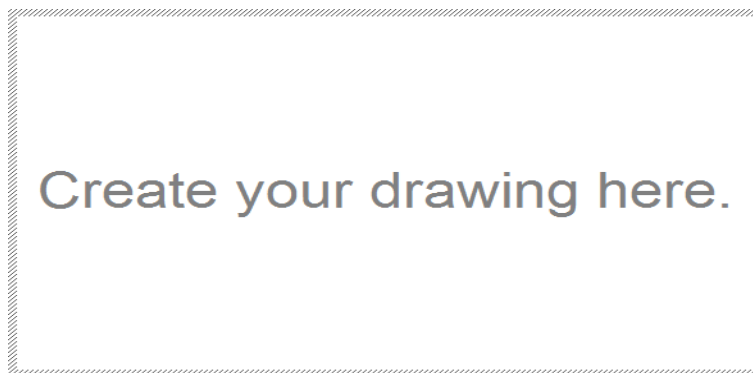
A Labeled Drawing Toolbar

The most important of the above drawing tools include:

- AutoShapes: lines, arrows, rectangle, oval, curves, etc.
- Text Boxes
- WordArt
- Clip Arts and Pictures

Canvas

The canvas is the shaded box that displays when a drawing tool such as a shape is selected, inviting you to "create your drawing here".



Canvas

The initial dimensions of the canvas are set by default. You can change the dimensions to suit your own purposes.



You don't have to use the canvas for your drawing. If you start drawing something outside the border of the canvas, the canvas will disappear off the screen and you can proceed without it.

NB: It is often useful to use the drawing canvas because the various objects you draw on the canvas are thus treated as a single object when moving (cutting/copying and pasting) it, for examples.

Line, Arrow, Curve and Arc Tools

Drawing lines and Arrows

The line and arrow tools allow you to create lines and arrows (of course). To do these:

1. Click on the **Line**  or **Arrow**  tool on the **Drawing Toolbar**.
2. Then click in the **white area**, hold down the button and drag the cursor in any direction.

The result should be a **line** or an **arrow**, depending on which one you selected beforehand.



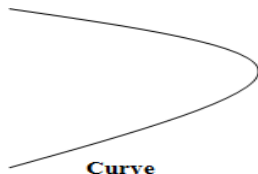
Line



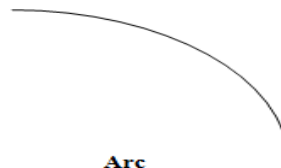
Arrow

Drawing a Curved and Arc Line

1. In the **Drawing Toolbar**, click on **Curve** or **Arc** tool.
2. Then click in the **white area**, hold down the button and drag the cursor in any direction to adjust the curve or arc.



Curve





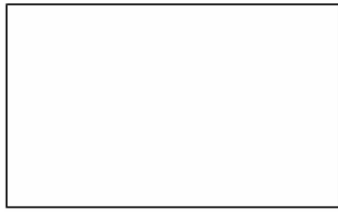
Arc

Shapes

Rectangle and Oval Tools

The rectangle and oval tools will allow you to surround objects or specify a location in a picture. To do these:

1. Click on the **rectangle**  or **oval**  tool on **Drawing Toolbar**. The cursor turns to a **cross shape**.
2. Then click in the white area, hold down the button and drag the cursor in any direction.



Rectangle





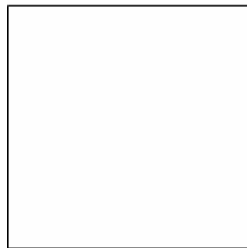
Oval

Rectangle and Oval outside the Canvas

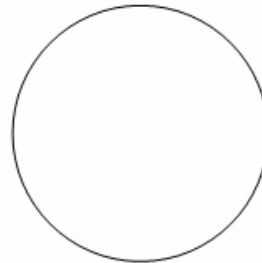
Drawing Square, Circle or other Geometric Objects

If you want to draw a perfect square or a perfect circle, you must hold down the **shift** key while you draw with the **Rectangle** tool or the **Oval** tool. To do these:

1. Select the **Rectangle**  or **Oval**  tool on drawing toolbar. The cursor turns to a **cross shape**.
2. Press and hold down the **shift** key.
3. Click on the white area, hold down the button and drag the cursor in any direction.



Square




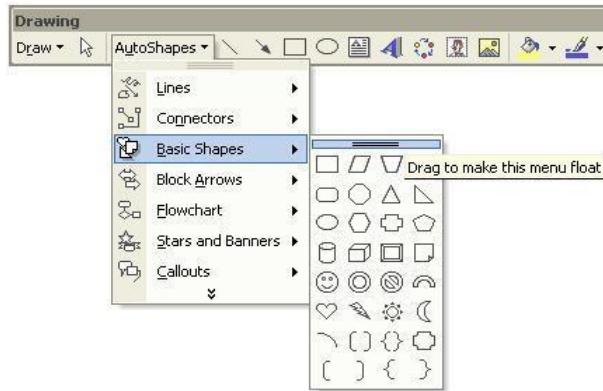
Circle

Square and Circle outside the canvas

AutoShapes

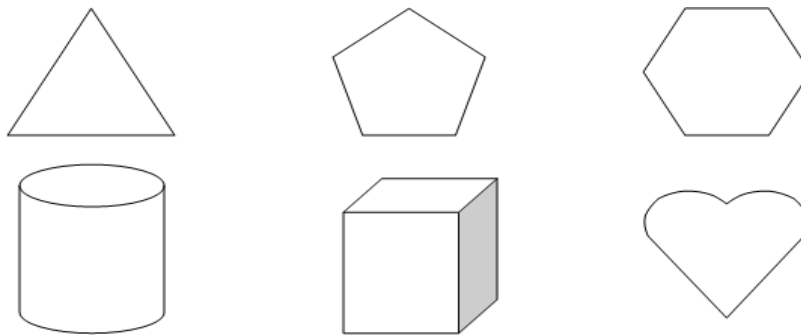
There is an item called **AutoShapes** in the **Drawing Toolbar** as mention above which makes available quite a nice selection of **pre-defined shapes** for **lines, connectors, arrows, flowchart symbols** and so forth.

1. Click the **AutoShapes**  tool on the **Drawing Toolbar** to view the **AutoShapes Pop Up Menu**.
2. Select **Basic Shapes** to view the **Shapes Menu**.
3. Select a **shape** from the shapes menu. The cursor turns to a **cross shape**.
4. Click in the white area, hold down the button and drag the cursor in any direction. The result should be a Shape that you have selected.



AutoShapes Pop Up Menu

Spend a few minutes checking out the many shapes available to you and try as many of them as you have time for, so you can see how easy they are to use. Why go to all the trouble of creating your own shapes when many of them are already designed for you. You could use these shapes to learn the geometric shapes, right?




Other shapes in AutoShapes. Can you identify them?

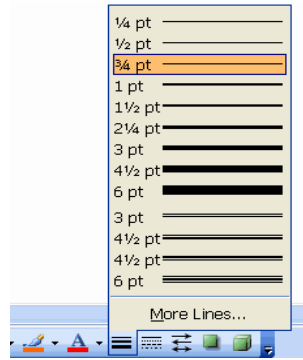
Line Styles and Colours

You can change the **style (width)** and **colour** of the lines, arrows and other shapes, using the “**Line Style**”

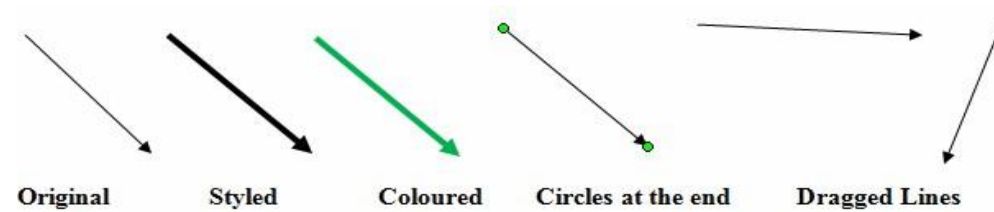
 and “**Line Color**”  tools.

Changing the Line Style

1. Select the **Line** or any **Shape**.
2. Click the **Line Style**  on the **Drawing Toolbar**.
3. Click on whichever **line width and style** you want from the menu.



Line Style Menu



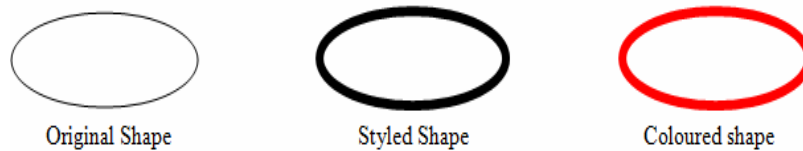
Styling, coloring and moving Arrows

Changing the Line Colour

1. Select the **Arrow** or any other shape.
2. Click on the **drop-down arrow** of the **Line Color** tool on the **Drawing Toolbar**.
3. Select the colour of your choice from the colour palette.



Line Color Menu



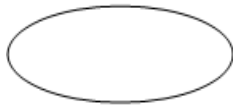
Changing the line style and line colour of an oval

Filling shapes with colours

In addition, you can “fill in” the center of the shapes with colours using the “fill color”  tool.

To fill shapes with colours:

1. Select the shape. A new **Format** tab appears with **Drawing Tools**.
2. Click on the **drop-down arrow** of the **Fill Color** tool on the **Drawing Toolbar**.
3. Select the colour of your choice from the colour palette.



Original Shape



Styled Coloured shape

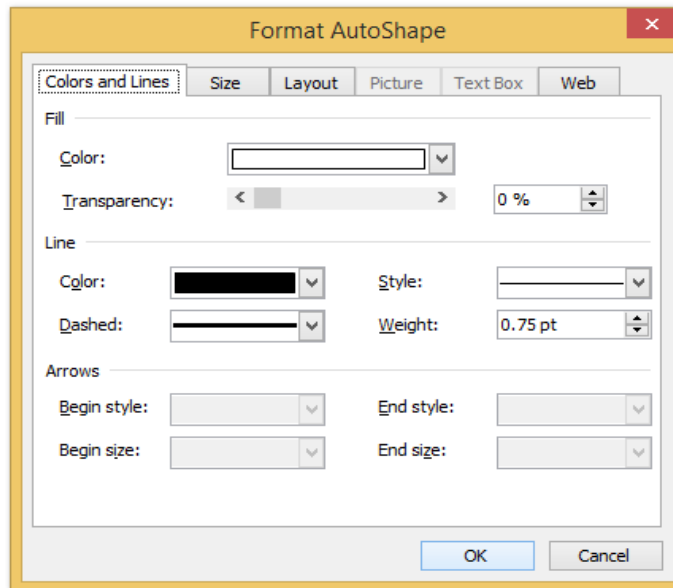


Filled Coloured Shape

Filling Shapes with colours

Format AutoShape Dialog Box

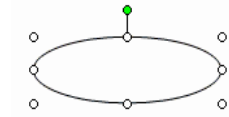
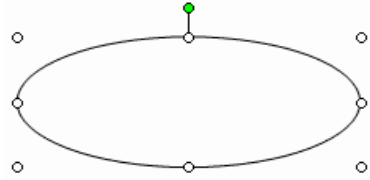
1. Right click the shape.
2. Select **Format AutoShape** from the pop-up **dialog box**.
3. Click on drop down arrow of **Line color, Line Style** or **Fill Color**.
4. Select the **Line color, Line Style** or **Fill Color** respectively.



Resizing Shapes

What if you decide that you want a bigger or smaller shape? Just:

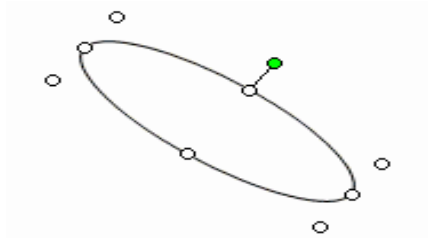
1. Click on the shape or object. [**White small circles** will appear on it.]
2. Click on one of the white small circles and drag it **outwards** (makes it bigger) or **inwards** (makes it smaller) to change its size.



NB: You can perform similar actions for the other shapes like rectangles, ovals, triangles, polygons, etc.

Rotating Shapes

You can also “**rotate**” a shape by clicking on the **green small circle**, holding down the button and dragging it to the right or left.



Moving Shapes

To move a shape:

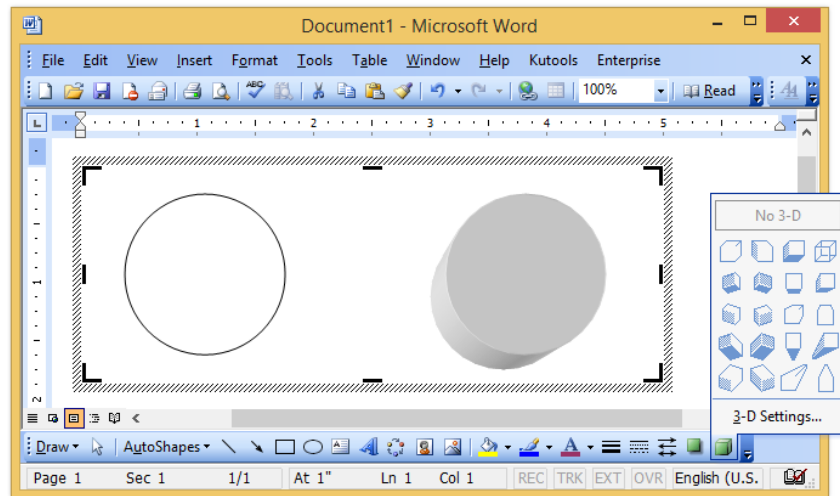
1. Move the cursor onto the shape. [The arrow cursor will turn to a cross.]
2. Click on the shape (the small circles should appear), hold down the button, move the cursor to where you want the shape to be (“drag” it) and let go of the button.

OR

- Alternatively, click on the shape and use the **Arrow Keys**.

Adding 3D Effects

1. Select the **shape or object**.
2. Click the **3-D Effects** on the drawing toolbar.
3. Move your mouse over the **menu options**.
4. Click an option to select the 3D effect.



3D Effects

After you have chosen a 3D effect, you can change other elements of your shape, including the **colour**, **depth**, **direction**, **lighting** and **surface** of the **3D effect** on your shape.

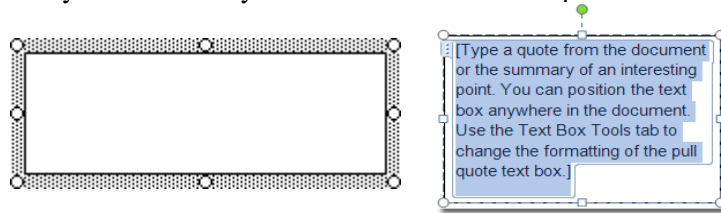
NB: You cannot add a **3D effect** to all shapes.

Chapter 34 - Drawing Toolbar (Text Box)

Placing text inside of a text box helps focus the reader's eye on the page content. Newsletters, reports, announcements, school projects, and other types of publications often use Word's text box feature.

Textbox

A **text box** is an object that you can add to your Word document to emphasize or set off your text.



Text Box – Word 2003 and 2007 respectively

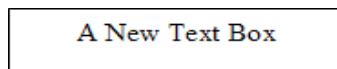
Displaying Text Box

Method 1: Using Menu Bar

1. Click **Insert** on the **Menu Bar**.
2. Select **Text Box** from the menu list.
3. The mouse pointer becomes a **crosshair**.
4. Place your **insertion point** where you want your text box.
5. Click and drag the text box until it is the appropriate size. Release the left mouse button when ready.
6. The text box will by default contain a white background colour, a thin black border and text.

Method 2: Using Drawing Toolbar

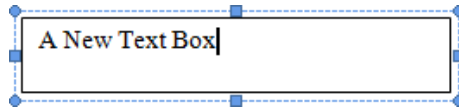
1. Click **Text Box** tool on the **Drawing Toolbar**.
2. Select **Text Box** from the menu list.
3. The mouse pointer becomes a **crosshair**.
4. Place your **insertion point** where you want your text box.
5. Click and drag the text box until it is the appropriate size. Release the left mouse button when ready.
6. The text box will by default contain a white background colour, a thin black border and text.



Text Box – Word 2003

Inserting Text into Text Box

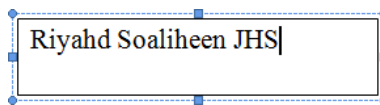
1. Click once inside the **Text Box**.
2. The box is selected, and a blinking insertion point appears inside the box.



3. You may have to delete the **default text** (A New Text Box)



4. Type in the text

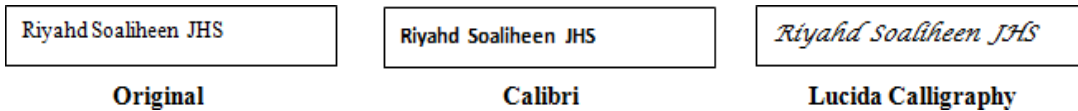


5. Click outside the **Text Box**

NB: If you click outside the box, the shading around the edge disappears and you can no longer type inside of it. Just click inside, though and you can go back and change what you wrote.

Formatting Text

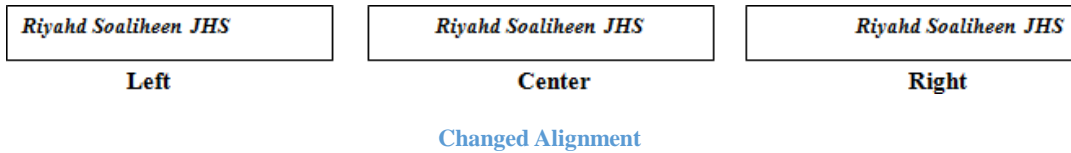
You can modify the text in the text box as normal: changing the font, style and font size, or changing its colour using “font colour” tool. You can also change its alignment (i.e., whether the text is on the left, right, or cantered in the middle and fill colour.



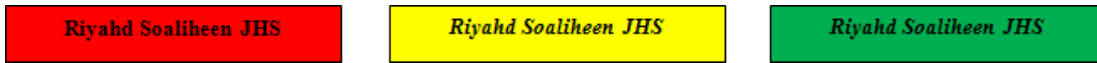
Examples of Changed Fonts



Examples of Changed Font Colors



Changed Alignment



Examples of Filled Colors

As with shapes, you can use the “**line style**” and “**line colour**” tools to change the width and colour of the border of the box. (Remember to click **on the border** of the box first to “**activate**” it.) In addition, you can “**fill in**” the center of the textbox with background colours using the “**fill colour**” tool as done above.



Added Line Style and Line Colour

Format Text Box Dialog Box

As mentioned earlier, the default for the text box in Word is a white background with a thin black border with text in it. Using the **Format Text Box** dialog box, you can choose different fill colours and lines, size, layout, and text box.


To Use the Format Text Box Dialog Box:

- Double-click a **text box border**. The **Format Text Box** dialog box appears.

OR

- Right-click the **text box border** and select **Format Text Box**. The Format Text Box dialog box appears.

To access the text box feature from the Drawing toolbar:

1. Click **View** on the **Menu Bar**.
2. Select **Toolbar** and then **Drawing** from the cascading menu. The Drawing toolbar appears at the bottom of your document.
3. Click the Text Box Button .
4. The **Format Text Box** dialog box offers you several **tabs** to choose from:
 - **Colour and Lines:** To fill a text box with colour and define border colours, styles, and weight
 - **Size:** To define a specific size
 - **Layout:** To use text wrapping and alignment
 - **Text Box:** To set internal margins

Managing Text Boxes

As with the shapes, you can move text boxes by clicking **on their border** (but not the dots), holding down the button, and dragging them to their new position. Alternatively, you can click on the border, and use the **Arrow Keys** on your keyboard

Resize a Text Box:

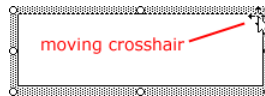
1. Click once on one of the **box's borders**. The box is now highlighted.
2. **Sizing handles** (small circles) appear. Hover the mouse pointer over any of the sizing handles until it turns into a **diagonally pointing arrow**.
3. Click and drag the sizing handle until the box is the desired size.



Resizing a Text Box

Move a Text Box:

1. Click once on the text **box's border**.
2. Hover your mouse pointer over the border until it becomes a **crosshair** with arrows.
3. Using this crosshair, click and drag the box until it is in the desired location.




Moving a Text Box

Chapter 35 - Drawing Toolbar (WordArt)

WordArt

WordArt is a program that allows you to treat text as a graphic. You can use the program to add special effects and flourishes to text, and then insert the text in your document. It is useful for creating special text elements such as logos or titles.

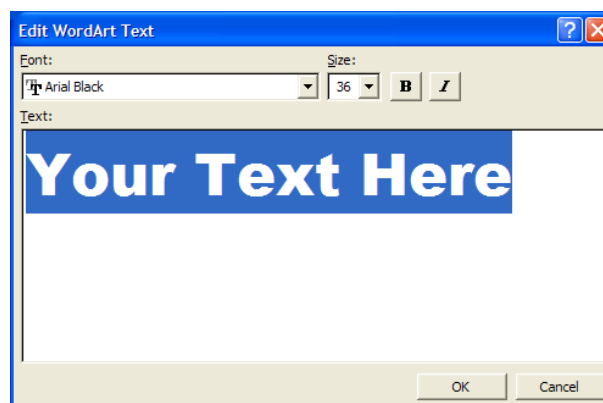
To insert WordArt:

1. Place the **insertion point** where you want to insert **WordArt**.
2. Click the **WordArt button**  on the **Drawing Toolbar**. The **WordArt gallery** opens.



Word Art Gallery

3. Choose a **WordArt style**. The **Edit WordArt Text** dialog box appears.



Word Art Text Dialog Box

4. Select the **font, size and style** of your choice.

5. Type in the text (e.g. Riyadh Soaliheen JHS, Example, etc.)
6. Click **OK**.

Here are just a few examples of what WordArt allows you to do:



WordArt Examples

WordArt Format Dialog Box

1. Right-click the **WordArt** object you created.
2. Select **Format WordArt**. The **WordArt dialog** box appears.
3. Use this dialog box to edit the **colour, size and layout**.

Chapter 36 - Drawing Toolbar (Clip Arts and Pictures)

Clip Art – Word 2003

Clip Art is a portion of the **MS Word** that helps the user to organize pictures, objects or images to document creation. It's a collection of pictures in a computer grouped into various types such as sports, art, seasons, etc. It contains pictures that are mainly provided by the application program. The **clip art gallery** can be accessed through one of the tools on the drawing toolbar.

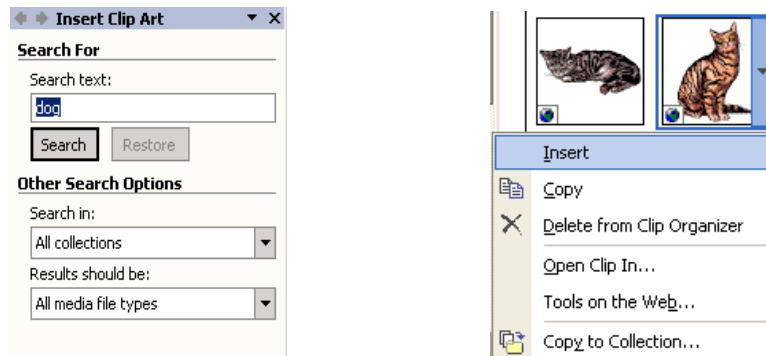
Inserting Clip Art:

Method 1: Using the Menu Bar

1. Place the **Insertion Point** where you want to insert the clip.
2. Click **Insert** on the **Menu Bar**.
3. Select **Picture** and then **Clip Art** from the cascading menu. The **Insert Clip Art** menu opens on the **Task Pane**.
4. Type a keyword (e.g. dog, cat, flower, etc.) in the **Search Text:** field.
5. Click **Go** or press the **Enter** key.
6. Select a clip from the **Clip Art Search Results** by clicking a **clip** to add it to the document.

Method 1: Using the Drawing Toolbar

1. Place the **Insertion Point** where you want to insert the clip.
2. Click **clip art** tool on the **Drawing Toolbar**.
3. Select **Picture** and then **Clip Art** from the cascading menu. The **Insert Clip Art** menu opens on the **Task Pane**.
4. Type a keyword (e.g. dog, cat, flower, etc.) in the **Search Text:** field.
5. Click **Go** or press the **Enter** key.
6. Select a clip from the **Clip Art Search Results** by clicking a **clip** to add it to the document.



Searching for Clip Art and Clip Organizer

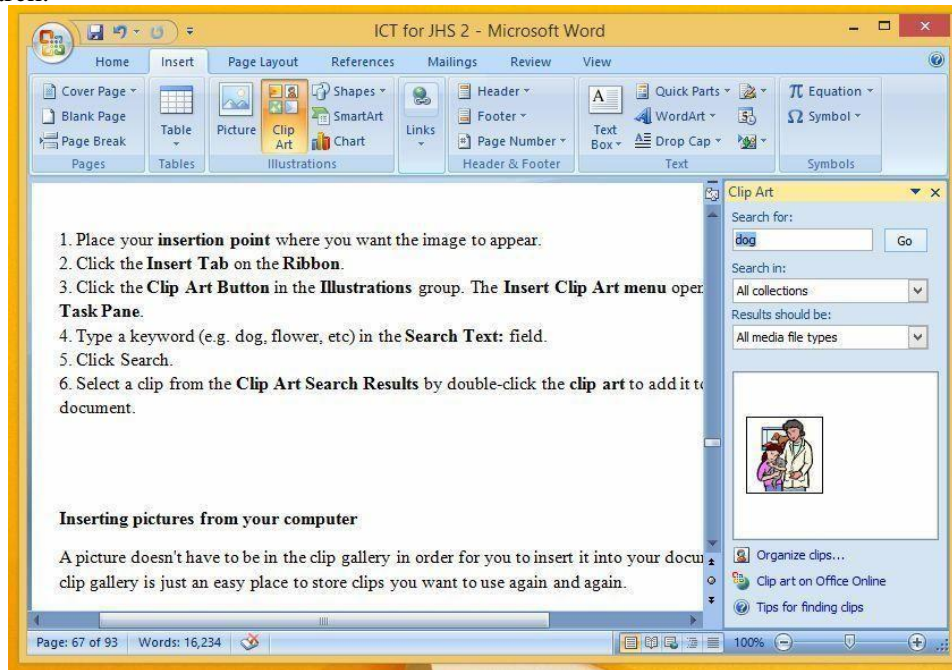
Copy and Paste Clip Art

1. With the **Clip Organizer** open, select the **thumbnail image** you wish to insert into your file.
2. Click the **down arrow** on the thumbnail image.
3. Click **Copy**.
4. Return to your file and **paste** the image into your file.

- The image is inserted into your file.

Clip Art – Word 2007

- Place your **insertion point** where you want the image to appear.
- Click the **Insert Tab** on the **Ribbon**.
- Click the **Clip Art Button** in the **Illustrations** group. The **Insert Clip Art** menu opens on the **Task Pane**.
- Type a keyword (e.g. dog, flower, etc.) in the **Search Text:** field.
- Click Search.



- Select a clip from the **Clip Art Search Results** by double-click the **clip art** to add it to the document.



Clip Art

NB: You may specify your search by using the following Search Options:

- Search in:** This specifies where **Word** will search for **clip art**. As long as the check box for **Everywhere** is checked, **Word** will search all collections.
- Results should be:** This specifies what type of file **Word** will search for (video, audio, photographs, or clip art). As long as the check box for **All Media Types** is checked, **Word** will search all media files.

Inserting Picture

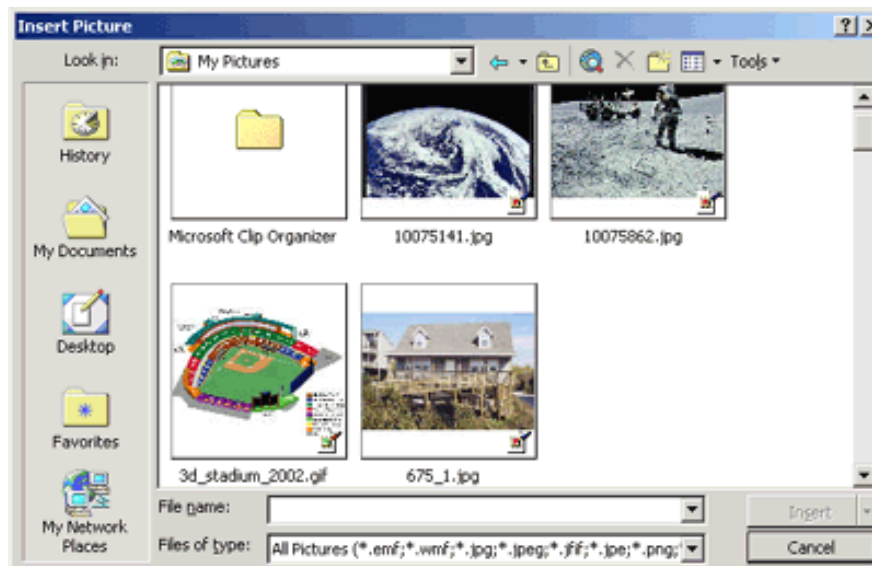
A picture doesn't have to be in the clip gallery in order for you to insert it into your document. The clip gallery is just an easy place to store clips you want to use again and again.

Method 1: Using Menu Bar

1. Place the **Insertion Point** where you want to place the picture.
2. Click **Insert** on the **Menu Bar**.
3. Select **Picture** and **From File** from the cascading menu. The **Insert Picture Dialog Box** opens.
4. Locate and select the picture to insert into your document. [You may have to **open** a folder to access the pictures.]
5. Click **Insert** at the bottom right corner (or just **Double Click**),

Method 2: Using the Drawing Toolbar

1. Place the **Insertion Point** where you want to place the picture.
2. Click on **Insert Picture** tool on the **Drawing Toolbar**.
3. Select **Picture** and **From File** from the cascading menu. The **Insert Picture Dialog Box** opens.
4. Locate and select the picture to insert into your document. [You may have to **open** a folder to access the pictures.]
5. Click **Insert** at the bottom right corner (or just **Double Click**),



Inserting a Picture from File

Method 3: Copy/Cut and Paste- Menu Bar

1. Locate the picture.
2. Click on the picture.
3. Click on **File** on the **Menu Bar**.
4. Select **Copy/ Cut** from the **Pop-Up Menu**.
5. Move to the document and insert the cursor where you want to place the picture.

6. Click on **File** on the **Menu Bar**.
7. Select **Paste** from the **Pop-Up Menu**.

Method 4: Copy/Cut and Paste- Right Clicking

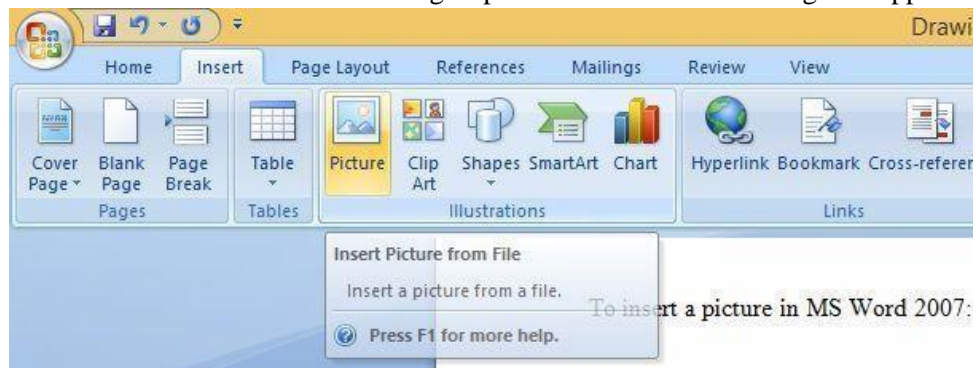
1. Locate the picture.
2. Right click on the picture and select **Copy/ Cut** from the **Pop-Up Menu**.
3. Move to the document and insert the cursor where you want to place the picture.
4. Right click and select **Paste** from the **Pop-Up Menu**.

Method 5: Copy/Cut and Paste- Shortcut

1. Locate the picture.
2. Click on the picture.
3. Press on **Ctrl + C** or **Ctrl + X**.
4. Move to the document and insert the cursor where you want to place the picture.
5. Press on **Ctrl + V**.

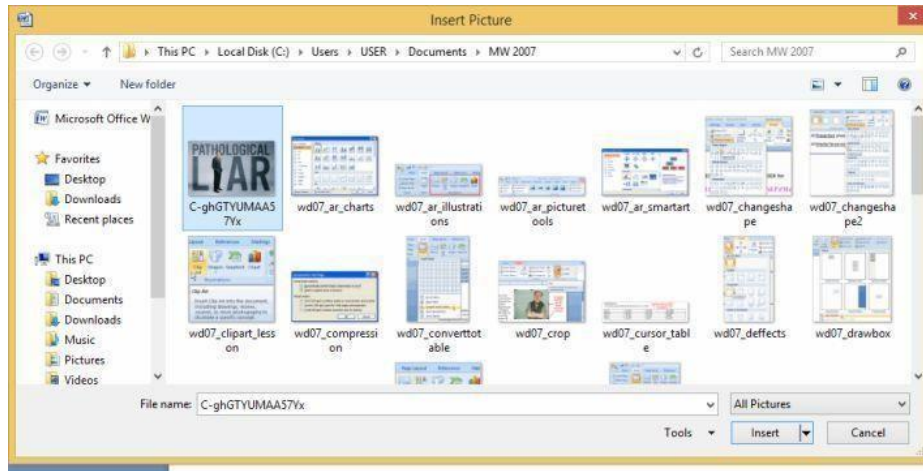
Insert a picture - Word 2007:

1. Place your **insertion point** where you want the image to appear.
2. Click the **Insert Tab** on the **Ribbon**.
3. Click the **Picture Button** in the **Illustrations** group. The **Insert Picture** dialog box appears.



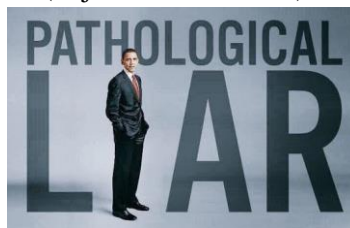
Picture Button

4. Browse to the picture you wish to include.



Insert Picture Dialog Box

5. Select the picture (as shown above)
6. Click **Insert** at the bottom right corner (or just **Double Click**) and it will appear in your document.



Inserted Picture

Moving Clips and Pictures

Once you have inserted a graphic into your document, you can re-position it until it's in the appropriate location.

By default, when a picture is imported into **Word**, it is **aligned to the left margin**. However, just as you would to text, you can change the alignment so the graphic is right-aligned or centered. You can also drag the image to anywhere on the page. It very easy to move picture that has been **wrapped** with texts.

Method 1

1. Select the picture or clip art.
2. Use the **alignment** buttons (left, right and center) to move the selected picture or clip to the center, right or left on the page.

Method 2

1. Select the picture or clip art.
2. Use your **mouse** to drag the selected picture or clip to any position on the page.

Method 3

1. Select the picture or clipart.

2. Use the **Arrow keys** on the keyboard to move the object.



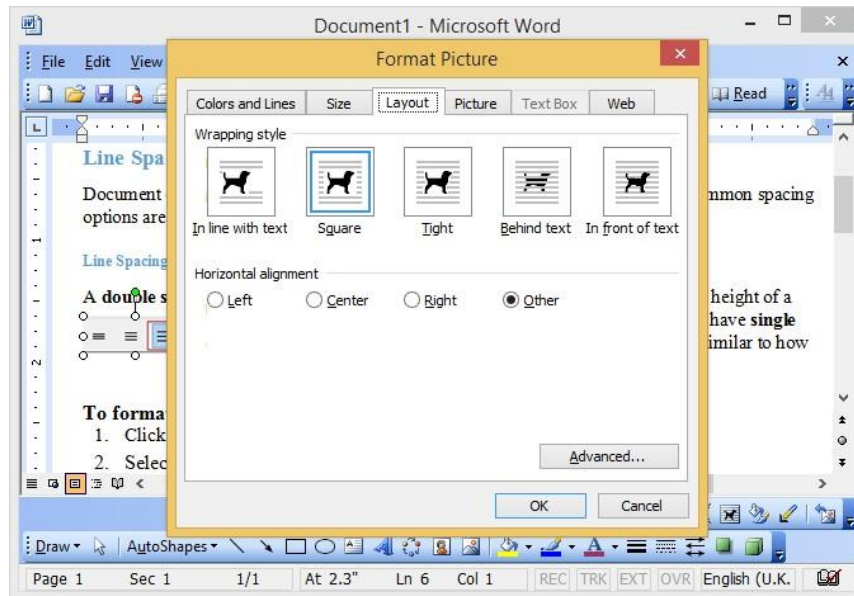
NB: The **I-beam** turns into a **cross shape** when you are dragging.

Text Wrapping

Text Wrap is a feature of word processors that allows you to surround a picture, clip art or a diagram with texts.

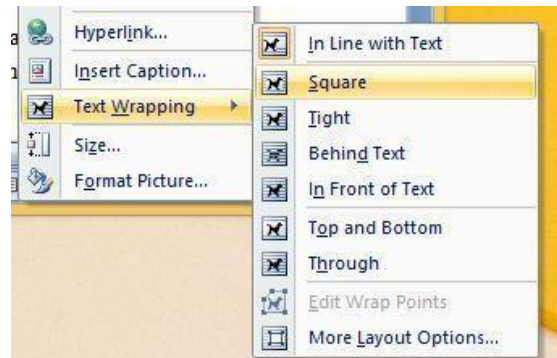
To text wrap – Word 2003:

1. **Double-click** the clip.
2. The **Format Picture** dialog box opens.
3. Click the **Layout** tab.
4. Select a **text wrapping** style.
5. Click **Ok**.

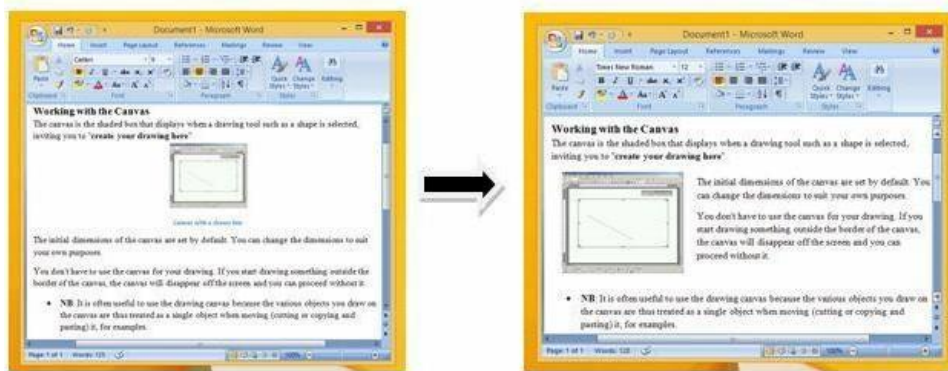


To text wrap – Word 2007:

1. Right click on the picture or clip art
2. Point to **Text Wrapping** and
3. Select text wrap option from the cascading **layout options**



4. Use the **mouse or arrow keys** to position the picture in the texts.



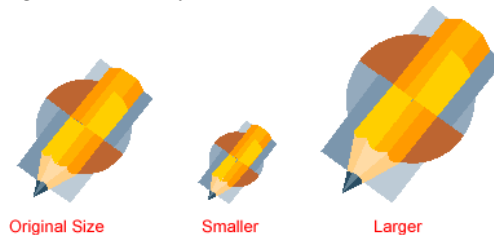
Wrapping Texts

Sizing Handles

You have two options when sizing your graphics. If it is important to maintain **proportions**, which will prevent the image from looking **skewed**, then use the corner handles to resize the image. If you do not need to maintain the graphic's proportions, you can use the **top, bottom, or side handles**.

To Change Size While Maintaining Proportions:

1. Click the image you want to **resize**.
2. Place the cursor over one of the corner handles. The cursor will change into a **double-headed arrow**.
3. Drag the handles until the image is the size you need.

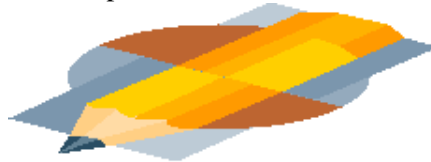


Sizing Pencil Graphics

NB: To keep the center of an object in the same place, hold down the **CTRL** key while dragging the mouse.

To Change Size While Not Maintaining Proportions:

If any of the middle handles are dragged (top, bottom, right, or left), only the height and width changes, thus changing the proportion or scale of the picture.



Shorter and Wider
Skewed Pencil Graphics

NB: Be careful; using only the sizing handle can make your pictures **blurry** and **distorted**.








Picture Toolbar








Sometimes you may need to not only adjust the sizing of your pictures, but you may notice that the picture is too dark or too bright for your liking. You can adjust your picture using **the Picture toolbar**.



Picture Toolbar

Below is a list of the tools offered on the **Picture Toolbar** and their functions:

- **Insert Picture from File**  : Insert another picture
- **Color**  : Automatic, grayscale, black and white, or watermark
- **More Contrast**  : Increase color intensity
- **Less Contrast**  : Decrease color intensity
- **More Brightness**  : Add white to lighten all colors
- **Less Brightness**  : Add black to darken the color
- **Crop**  : Cut the sides of an image

- **Rotate Left**  : Turns the image by 90 degrees to the left with each click
- **Line Style**  : Customize the border of an image
- **Compress Pictures**  : Change the resolution of your image
- **Text Wrap**  : Set how text wraps around the image
- **Format Picture**  : Display the Format Picture dialog box
- **Set Transparent Color**  : Use eyedropper to make areas of the picture transparent (mainly for web graphics)
- **Reset Picture**  : Return picture to its original format

To Use the Picture Toolbar:

1. Right-click the picture.
2. Choose Show **Picture Toolbar** from the shortcut menu.
3. Select the **tool** you want to use.

To delete a clip art or a picture:

1. Select the clip art or picture.
2. Press the **Delete** key on your keyboard.

Chapter 37 - Printing Documents

Print and Printing

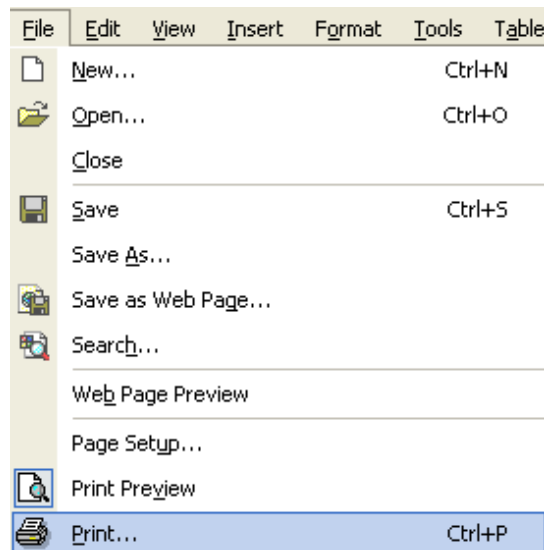
Print is a feature that allows you to convert electronic data (**softcopy**) on a computer onto a paper (**hardcopy**).

Printing is the process of converting electronic data (softcopy) onto a paper (hardcopy). The process involves a computer transferring data to a printer and generating a hard copy of the electronic data being printed.


Printing – Word 2003

Method 1: Using the Menu Bar

1. Open the document.
2. From the **File** menu, choose **Print**.
3. In the dialog box that opens, select the printing options that you want to apply.
4. Click on the **Ok** button.




Method 2: Using the Standard toolbar

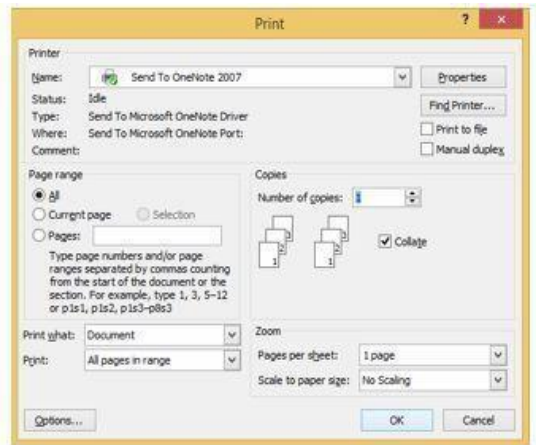
1. Open the document.
2. Click the **Print** button  on the **Standard toolbar**.
3. In the **dialog box** that opens, select the **printing options** that you want to apply.
4. Click on the **Ok** button.

Method 3: Using Shortcut

1. Open the document.
2. Use the shortcut, **Ctrl + P**.
3. In the dialog box that opens, select the printing options that you want to apply.
4. Click on the **OK** button.

Printing – Word 2007

1. Open the document.
2. Click **Office Button** . [This opens a large window called the **Backstage**].
3. In the left column, you click **Print**. [A smaller window opens with the commands **Print, Quick Print** and **Print Preview**].
4. Move the cursor to select **Print**. [Of course, you will need to have a printer hooked up to your computer].
5. In the dialog box that opens, select the printing options that you want to apply.
6. Click on the OK button.



Print Dialog Box

Setting Orientation

The two types of page orientations are:

- Portrait
- Landscape

To select page orientation:

1. Click **File** on the **menu bar**,
2. Click **Page Setup**.
3. Click on the **margin tab**
4. Click on Orientation and select **Portrait** or **Landscape**

NB:

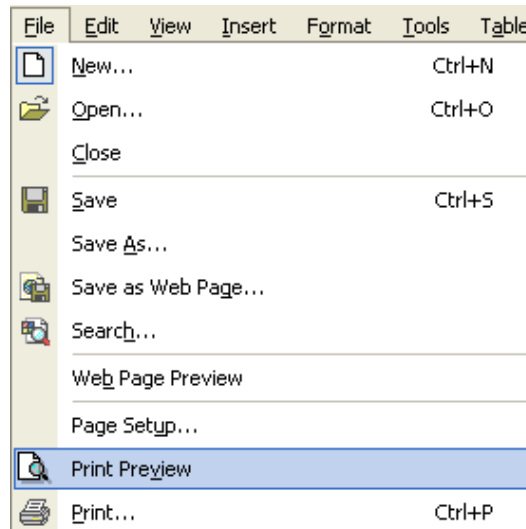
- The default orientation for a word processing document is **Portrait**.
- **Portrait** is the vertical layout while **Landscape** is the horizontal layout

Print Preview – word 2003


Print preview is a feature that allows you to view what a printed version of a document would look like on the screen before printing a **hard copy**.

Method 1: Using Menu Bar

1. Open the document (file) you want to preview.
2. Click on **File** then **Print Preview** on the **Menu Bar**.



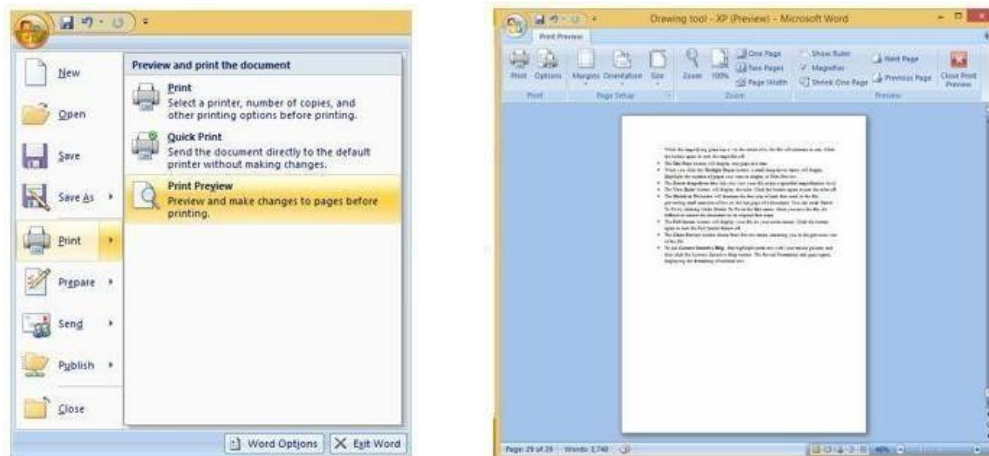
Method 2: Using Standard Toolbar.

1. Open the document (file) you want to preview.
2. Click the **Print Preview** button  on the **Standard** toolbar.

Print Preview – Word 2007

1. Open the document.
2. Click **Office Button** .
3. In the left column, you click **Print**.
4. Move the cursor to select **Print Preview** from the cascading menu.

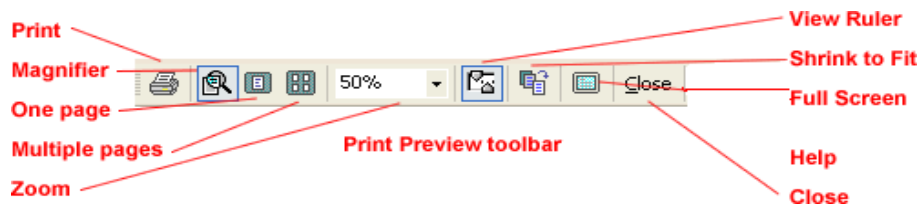
Once you have accessed **Print Preview**, your file will now be in **Print Preview mode**. It will look something like this:



Word 2007's Print Preview

Print Preview Toolbar

Print Preview mode shows you how your file is formatted. The tools available on the **Print Preview toolbar** help you view and edit your document before you print it.



- The **Print** button prints the file.
- The **Magnifier** button turns the mouse pointer into a small magnifying glass. When the magnifying glass has a + in the center of it, the file will enlarge when you left click. When the magnifying glass has a - in the center of it, the file will decrease in size. Click the button again to turn the magnifier off.
- The **One Page** button will display one page at a time.
- When you click the **Multiple Pages** button, a small drop-down menu will display. Highlight the number of pages you wish to display in Print Preview.
- The **Zoom** drop-down box lets you view your file under a specified magnification level.
- The **View Ruler** button will display the ruler. Click the button again to turn the ruler off.
- The **Shrink to Fit** button will decrease the font size of each font used in the file, preventing small amounts of text on the last page of a document. You can undo **Shrink To Fit** by clicking Undo Shrink To Fit on the Edit menu. Once you save the file, it's difficult to restore the document to its original font sizes.
- The **Full Screen** button will display your file on your entire screen. Click the button again to turn the Full Screen feature off or click Close Full Screen on the floating Full Screen toolbar.
- The **Close Preview** button closes Print Preview mode, returning you to the previous view of the file.

Importance of Print Preview

- You can find errors that may exist.
- Fix the layout of the document before printing.
- Saves ink or toner and paper by not having to print more than once.

ICT devices that can produce output (Print) on paper

- Printer,
- Plotter
- Facsimile (Fax)
- Photocopier

Softcopy and Hardcopy (Differences and Importance)

A document on the computer is called **softcopy** while a document which has been printed onto a paper is called **hardcopy**.

	Softcopy Output	Hardcopy Output
1	It is digital / electronic in form	It is physical / tangible in form
2	It is produced on an electronic screen	It is produced on paper / other physical support
3	It can be transferred / sent electronically	It can be transferred / transported physically

Importance of Hard Copies Formats

- Can be used without an electronic device
- Such books are free from computer virus infection.
- Actual notes can be written and highlights made on its pages for easy reference.
- Can be accessed and used without electricity
- They are available for use virtually everywhere.
- There is no need for the user to be computer literate.
- Can be used in areas where there is no electricity
- Information can be shared without using an electronic device
- Could be more portable than some computers

Importance of Soft Copies Formats (eBooks)

- Searching for a particular information is easier and faster – using the search feature
- Sharing information across long distances is faster and easier - using the internet or intranet or removable storage media such as pen drives, compact discs, etc.
- **Saves space** - Several e-books can be loaded onto a computer or other portable device
- **Cheaper** - due to its electronic format it costs less than equivalent books in hard copy formats
- **Versatile** – It is possible to change the font size, convert to audio, etc. to suit the preference of the user.

- Can be read even in the dark without light
- Maintains its state, no matter how old – does not get old or dirty or torn, etc.
- E-book enables the user to magnify the text to make reading easier for people with eye problems.
- Some specialized software can read the contents of e-book for people with poor eye sight or visually impaired.
- It is easier to incorporate text from one e-book through copy and paste.

Chapter 38 - Browsing Through Websites Using Hyperlinks



Hyperlinks

Have you ever noticed that certain words on the Web look a little bit different? Whenever you see a word or phrase that's in blue and/or underlined in blue colour, it is probably a hyperlink or link for short. For example, try clicking the link below.

Hey, I'm a link! [Click me!](#) (For the link to work, make sure you connected to the internet.)

Hyperlink is a chain of words, phrase or graphics (images) that a user clicks to access a new webpage or website on the internet. It can also be defined as a section of text or graphic that is capable of linking up with all the Webpages on a website or another.



From the picture above, you may notice that the cursor changes into a hand icon (or link is displayed) whenever you hover over a link. When an arrow cursor  changes to a hand cursor  on a text or graphic, it means that particular text or graphic has a link with another page or site. So, seeing hand icon or cursor means you've found a link.

Apart from text, many websites actually use images as links, so you can just click the image to navigate to another page.

A screenshot of a Microsoft .net website. The main heading is "Resolutions made easy". Below it, there are several hyperlinks: "Build XML Web services quickly.", "Make mobile data access easier.", and "Today's News". The "Today's News" section contains several news items, each with a hyperlink: "MSN Broadband!", "Job hunting?", "Better living through software.", and "Patch Windows now.". The Microsoft .net logo is visible in the bottom left corner.

Resolutions made easy

► Get your life organized and your PC in shape with these helpful resources from Microsoft, MSN, and our partners.

[Build XML Web services quickly.](#)
Learn the fundamental technologies and get started today.

[Make mobile data access easier.](#)
Get the SQL

Hyperlinks

Today's News

- [MSN Broadband!](#)
Get two months free when you sign up for one year. (U.S. only.)
- [Job hunting?](#)
Avoid common resume mistakes with tips from MSN Careers.
- [Better living through software.](#)
The buzz from CES includes new Windows Media-enabled DVD players, smart displays, Pocket PCs, UltimateTV, and more.
- [Patch Windows now.](#)
Get the security fix for Windows XP and other

Microsoft .net

Enterprise

Opening a link in a new Tab

Many browsers allow you to open links in new tabs. You can open as many links as you want, and they'll stay in the same browser window instead of cluttering your screen with multiple windows.

To open a link in a new tab, Right-click the link and select Open link in new tab (the exact wording may vary from browser to browser).



Browsing the internet with IE

NB: Links don't always go to another webpage or website. In some cases, they allow you to download a file.

Hyperlinks in Books

Hyperlinks are not only used to link only pages in the internet. They are also used to link pages in books and to link books to a website or webpage for reference. You can equally link text to a heading or bookmarks in a page or a book.

Example: Click [Here](#) to move to the beginning of the chapter.

NB:

- To open **Hyperlinks** in books, use the shortcut, **Ctrl + Click**.
- You may need to be connected to the internet to open links that are Webpages or websites.

- A link opened changes colour.
- **Downloading** is the transferring of data from a remote computer to local computer. It is the act of transmitting data from a remote computer on the internet or other networks to one's own computer.
- **Uploading** is the act of transmitting data from one's own computer to a remote computer on the internet or other networks.

Importance of Hyperlinks

As you can see, hyperlinks are an important part of using the Web and some books. They allow you to navigate between different Webpages, pages, download files, and do a whole lot more.

Chapter 39 - Accessing Information Using Website Address

You must have learnt earlier that a website is a collection of webpages linked to one another by hyperlinks. You must have also learnt how to access websites by clicking on hyperlinks as we have done in the previous lesson. But it is not always the case that to access websites you click on hyperlinks. Sometimes you need to type the **Web Address** of the main webpage in the address bar of a web browser.



The internet is very broad and there are a lot of ways of retrieving information from it. Some of the ways of accessing information from the internet are by:

- Using Uniform Resource locator (URL).
- Using search engines.

Understanding URL

URL is a website address which stands for **Uniform Resource Locator**. Think of it like a street address, with each portion of the URL as different parts of the address, and each giving you different information.

- **Examples of Web Addresses or URLs:**
<http://www.wikipedia.com>, <http://www.google.com>, <http://www.educationghana.net>,
<http://www.ghanaweb.com>, <http://www.moe.gov.gh>, <http://www.tv3.com>,
<http://www.edu Ghana.net>, <http://www.facebook.com>, <http://www.alatipha.blogspot.com>, etc.

From the above example, you can see that, URLs are made up of:

- Alphabets (a, b, c, d...)
- Numbers (1, 2, 3, ...)
- Symbols (Punctuation marks) such as forward slash (/), colon (:), period (.), question mark (?), underscore (_), dwindle (~), etc.

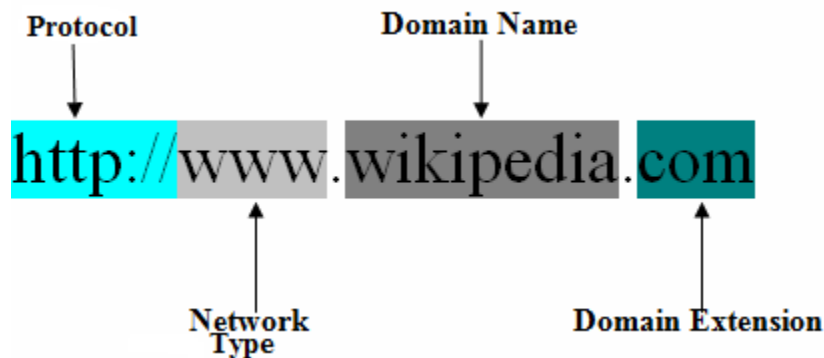
However, the web browser is not designed to understand the alphabets, numbers and symbols which are collectively known as URL. So, the URL will be converted into the numeric equivalent known as **Internet Protocol (IP) Address**.

Typing in the IP Address in the address bar will give you the same result like typing the URL. But the problem is that, it is very difficult to remember and type in the correct IP address hence the reliance on the URL

NB: Internet Protocol Address (IP Address) is a sequence of numbers used to identify computers and websites on the internet. e.g. 72.14.207.99, 69.171.229.11, etc.

Main Components of URL

- Protocol (Scheme)
- Network Type
- Domain Name
- Domain Extension



Main Components of URL

Protocol (Scheme)

Every URL begins with the scheme, popularly called the protocol. A **Protocol** is the mode of communication between communication devices. It's the set of rules that enable different types of computers and networks on the internet to communicate with one another. **Internet Protocol (IP)** is the format of communication between computers on the internet.

There are many types of protocol, but for typical web browsing you will mostly see **http** and **https**. Others are **FTP** and **SMTP**.

Browser usually won't show the protocol (scheme) in the address bar, and usually you don't need to type the scheme when typing a web address; instead, you can just begin with the domain name. The protocol is still always part of the URL; it just isn't being displayed.

Network Type

This specifies the type of network being used for communication between two or more computers. When you access a website, you normally connect to another computer called the **server** by using the internet or the [WWW](#). Network type is the name of the web server. The network type is also known as **Third Level Domain**.

Domain Name

The domain name is the most prominent part of a web address. It indicates the name of a computer or a network of computers on the internet. Typically, different pages on the same site will continue to use the

same domain name. It is the name of the file with the directory. It is also known as the **Second Level Domain**.

In most URLs, the network type like, **www** can be omitted. Google.com and www.google.com lead to the same page. However, other sub- domains cannot be omitted. For example, all pages under news.google.com require the news sub- domain in the URL.

Domain Extensions

Domain Extension is the notation at the end of web address that specifies an internet category or a country code. It is also known as **Top-Level Domain**.

There are two main types of domain extensions: **generic** and **country code**. Examples of generic domain extensions are: **.com, .edu, .gov, .mil, .org, .net, .aero, .biz, .coop, .info, .museum, .name, .pro, .cat, .jobs, .mobi, .tel, .travel, and .asia** and that of the country code domain extensions are **.uk, .us** and **.gh**.

- **.com** represents the word "**commercial**," and is the most widely used extension in the world. Most businesses prefer a .com domain name because it is a highly recognized symbol for having a business presence on the internet.
- **.net** represents the word "**network**," and is most commonly used by Internet Service Providers, web-hosting companies.
- **.org** represents the word "**organization**," and is primarily used by non-profit groups or trade associations.
- **.biz** stands for "**business**" and is used for small business websites
- **.edu** represents "**educational**" and is commonly used by educational institutions such as, but not limited to, schools, colleges and universities.
- **.gov** represents "**governmental**" and is commonly used by governmental ministries, entities and agencies.
- **.info** is for credible resource websites and represents "**information**". It's the most popular extension beyond **.com, .net** and **.org**.
- **.aero** represents "**aeroplane or air-transport industry**" and is commonly used by air-travel-related entities.
- **.mil** represents the word "**military**" and is primarily used by military.

Examples of Domain Extensions in Ghana

- .com.gh
- .edu.gh
- .gov.gh
- .org.gh
- .mil.gh

How to Access Information Using Web Address (URL)

1. Connect to the internet.
2. Launch a browser e.g. Chrome
3. Click in the **Address Bar**.
4. Type in the correct **web address (URL)** e.g. <http://www.cnn.com>
5. Press the **Enter** key on the keyboard.

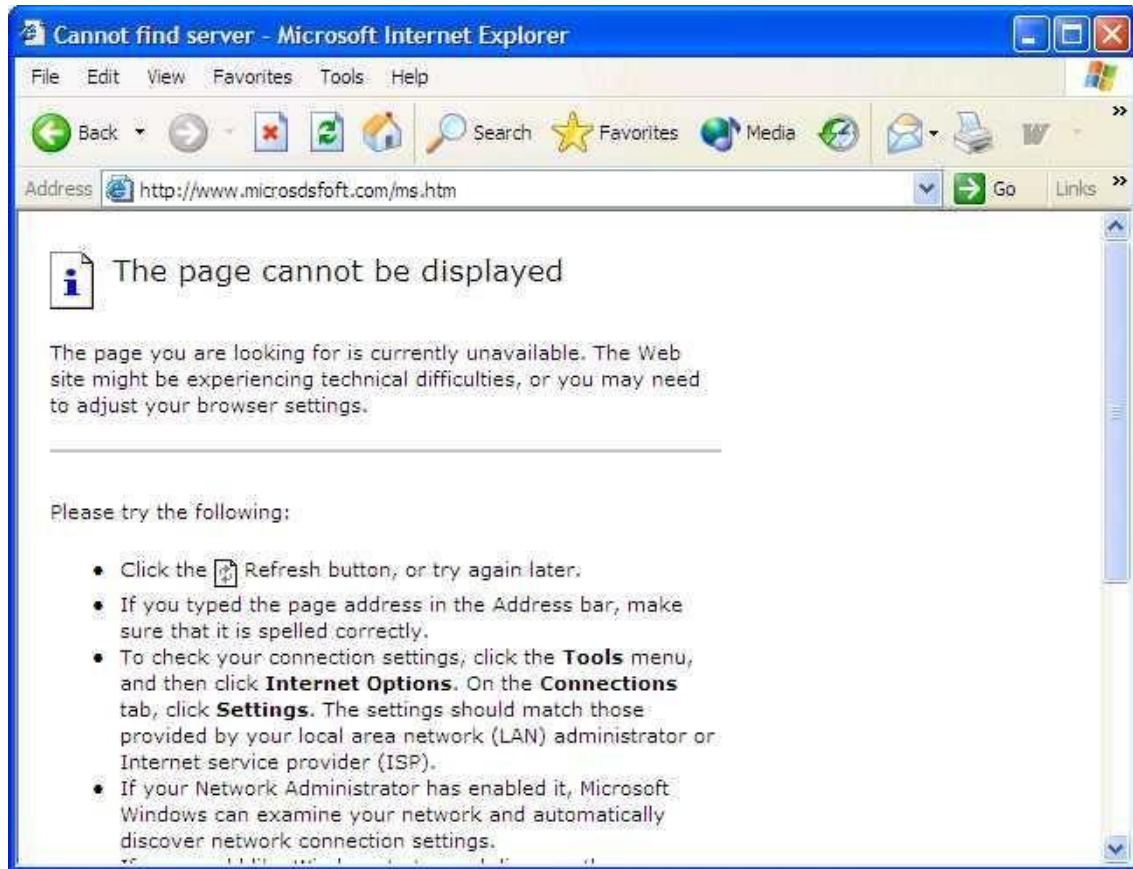


Displayed Webpage

Reasons that will make a Webpage not to load

Sometimes when you're browsing the Web, you'll see a screen like one below. This means the Website is unavailable. Several things can cause a Webpage not to load:

- You've typed in an incorrect web address (URL).
- You're not connected to the internet.
- You've lost your connection to the internet.
- The computer or server where the web page is stored is down.
- Too many users are trying to view the same web page at the same time.
- The web page no longer exists or maybe, it never existed in the first place.



Connection Problems

For all these cases, try going to the website again later. Whatever was causing the problem might be fixed a few minutes or hours later.

Chapter 40 - Accessing Information from Educational Software and Websites

In today's world, more and more things are done using computers, software and internet. Even if you don't consider yourself a computer person, you now need computer skills in order to conduct research, shop online, keep in touch with family and more.

The ability to access information using educational software and websites are some of the most important information literacy skills you can possess. By improving your search skills, you can find what you're looking for more quickly without having to sift through tons of irrelevant results. Hence this tutorial will give you some information on software and websites and literacy strategies to help you improve your searches and evaluate your results to find the most reliable information.

Educational Software

Educational software is software designed to give tuition and information for educational purposes. In other words, they are software designed to enhance teaching and learning processes. In fact, they assist students in learning and can also be used to take online examinations.

Examples of educational software/websites:

- Encarta
- Wikipedia
- Grolier
- Encyclopedia Britannica

Encarta

Encarta was a multimedia encyclopaedia program providing the user with a variety of features for research and activities for learning.

Originally available on CD-ROMs or DVDs. It was later available on the World Wide Web. The information on the Encarta CD/DVD and the website were not for free. One will have to buy the CD/DVD in order to have access to the information. Even one will have to subscribe to access some information on the Encarta website. Encarta can be used to search for information on various topics.

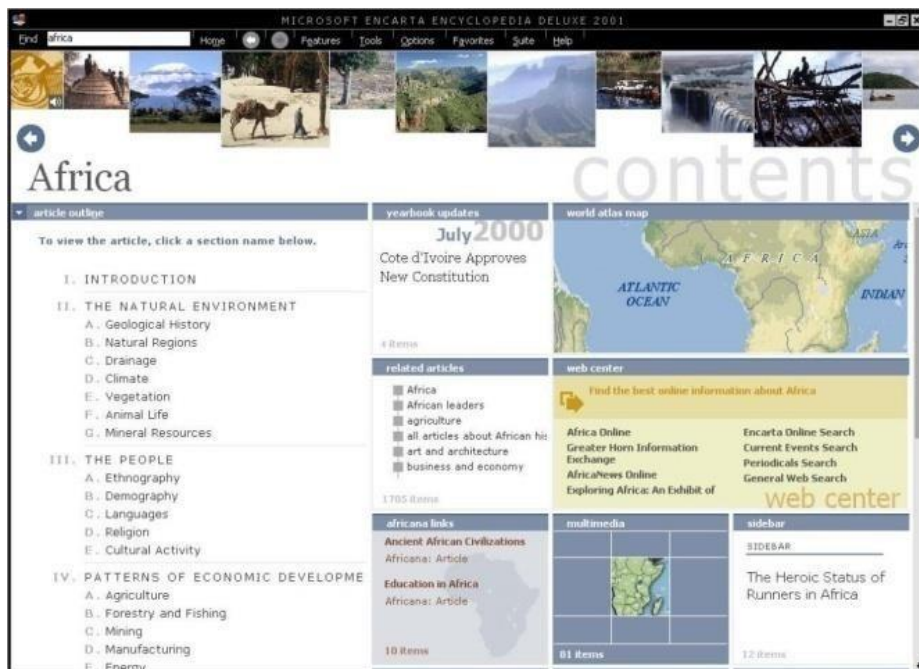
In 2009, both the **Encarta software** and the **Website** were discontinued because they have both been surpassed by rising competitors like **Wikipedia**. The Encarta is now only available on only CD/DVD to those who have bought them before the discontinuation.

How to use Encarta Software to search for information

1. Open the Encarta program



2. Left click in the **search box** and type what you want to look for e.g. Africa
3. Press the **Enter** key on your keyboard or click on the **GO** button beside the search bar.
4. If Encarta finds information on what you are searching for, it will display it in a searching list.



5. Click on the group where you want to read on the result from your search.
6. Under the group, click on one of the items to read its contents.

NB: To go back to previous page, click on the **Back** button located on the toolbar.

Wikipedia

Wikipedia comes from the two words: **wiki** and **pedia** (the short form for **encyclopaedia**). A **Wiki** is a site that lets users add or modify content and an **Encyclopaedia** is a reference work that contains information on all branches of knowledge or treats comprehensively a particular branch of knowledge usually in articles arranged alphabetically often by subject.

Hence, **Wikipedia** is a free online encyclopaedia containing the most comprehensive and widely used reference work humans have ever compiled. It is the largest and most popular general reference work on the **Internet**.

The quality of articles in a wiki can vary widely, but well-written ones always provide links to the original sources where you can verify the information.

To Search Wikipedia for Information

1. Type '<http://www.wikipedia.com>' in the **address bar**.
2. Press **Enter** key to display **Wikipedia home page**.
3. Click '**English**' to use **Wikipedia** in the English Language.
4. Type the **word** or **phrase** that you want to search e.g. Ghana
5. Press the **Enter** key



Searching for Ghana in Wikipedia

Grolier

Grolier is the most comprehensive collection of nonfiction content available online. Vast, vetted, and varied, it delivers limitless resources that provide learners with endless possibilities for exploration.

Just like Encarta, the Grolier is available on **CDs/DVDs** and **online (World Wide Web)**. The information on the Grolier CD/DVD and the website are not for free. One will have to buy the CD/DVD or subscribe to have access to some information on the Grolier website.

Using Grolier Online

Grolier will automatically search for your topic in all the databases.

1. Type search term(s) into the white search box and click on the "Go" button.



2. After the search, Grolier will display a list of articles found. An icon to the left of the article title indicates in which database the article is found.



3. To find additional articles on a topic, click on the hyperlink entitled, "(More Like This)" beneath the article title.

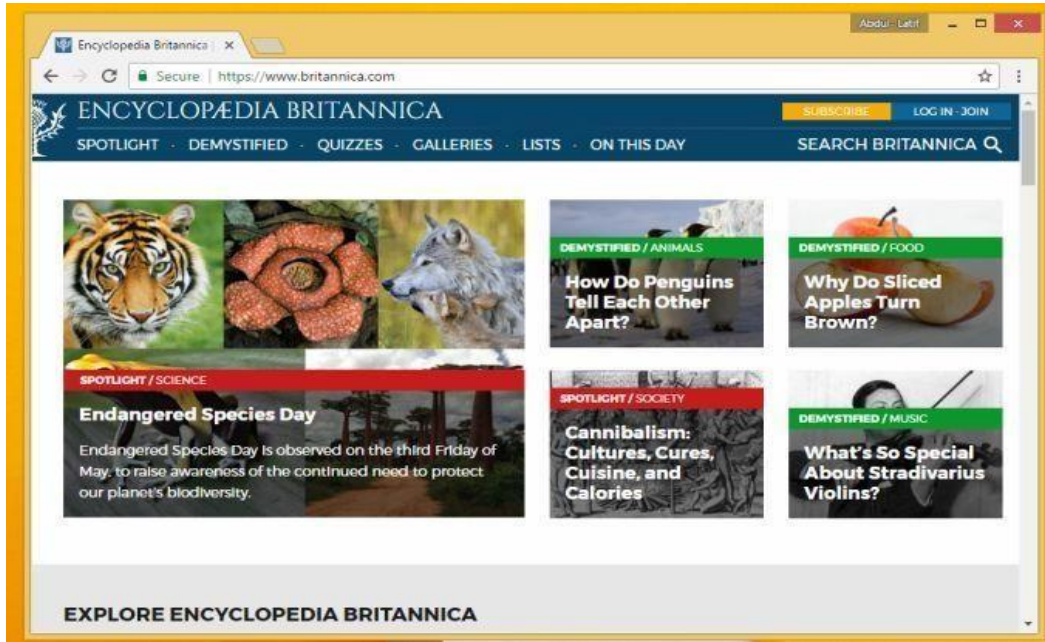
Encyclopaedia Britannica

The Encyclopaedia Britannica is a general knowledge English-language encyclopaedia. The name has been synonymous with reliable and trustworthy information for generations.

The 21st-century classroom is a hive of inquiry, collaboration, and digital learning. Britannica is there, with math, science, and other products that use today's technologies to make teaching and learning a more enriching experience.

To Search Encyclopaedia Britannica for Information

1. Type '<http://www.britannica.com>' in the **address bar**.
2. Press **Enter** key to display Britannica **home page**.



3. Type the word or phrase that you want to search e.g. Kwame Nkrumah
4. Press the **Enter** key



Chapter 41 - Locating and Transferring Information from Website to Word Processor

In year two we learnt about **Educational Software and Websites** such as Encarta, Wikipedia and Grolier. The problem of most of these educational software and websites are that they require **internet** and internet. Hence the need for students to make a copy of the information available offline by copying and pasting, and saving the information with a **Word Processor** such as **MS-Word**.

Transferring Information from Website to Word Processor

Just as information can be transferred (copied and pasted) from one document to another, so can information be transferred from a website to a word processor to create a document that can be used without internet (offline). This process involves four stages. Which are:

- **Locating** the information in the internet
- **Copying** the information from the location (webpage).
- **Pasting** the information onto a **word processor** (e.g. MS-Word); and then
- **Saving** the document (e.g. desktop, document folder, etc.)

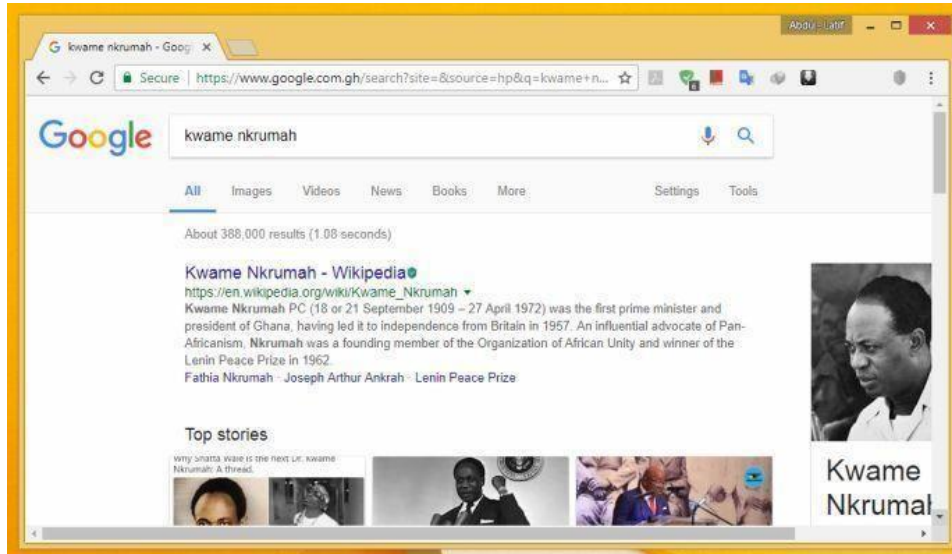
Locate Information on the Internet

There are many ways to locate information on the Internet. Some of which are:

1. Typing the **website address** in the **address bar**.
2. Using the **search engines**. E.g. google
3. Clicking a **link** in the currently visible page.
4. Choose a **website address** from a list of sites you have visited before (history).
5. Use the **Back** and **Forward** buttons on the toolbar to return to a site you have recently visited.
6. Clicking on websites in the **bookmarks**.

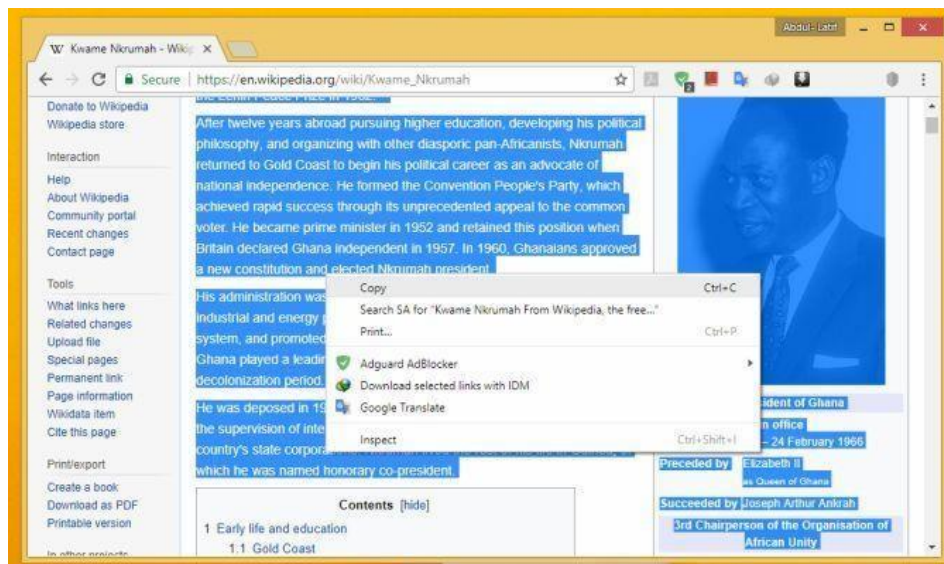
The commonest and what we will be using in this lesson to locate information in the internet is, **typing the website address in the address bar** or **using the search engines**. To do this:

1. Launch a browser e.g. chrome.
2. Type the **search engine** (website address) e.g. <http://www.google.com> in the address bar.
3. Press **Enter** key.
4. Type the **word** or **phrase** that you want to search (e.g. Kwame Nkrumah) in the search bar.
5. Press the **Enter** key.
6. Scroll through the thousands of results and select the result that best suit what you are searching for by clicking on its hyperlink to open the page.



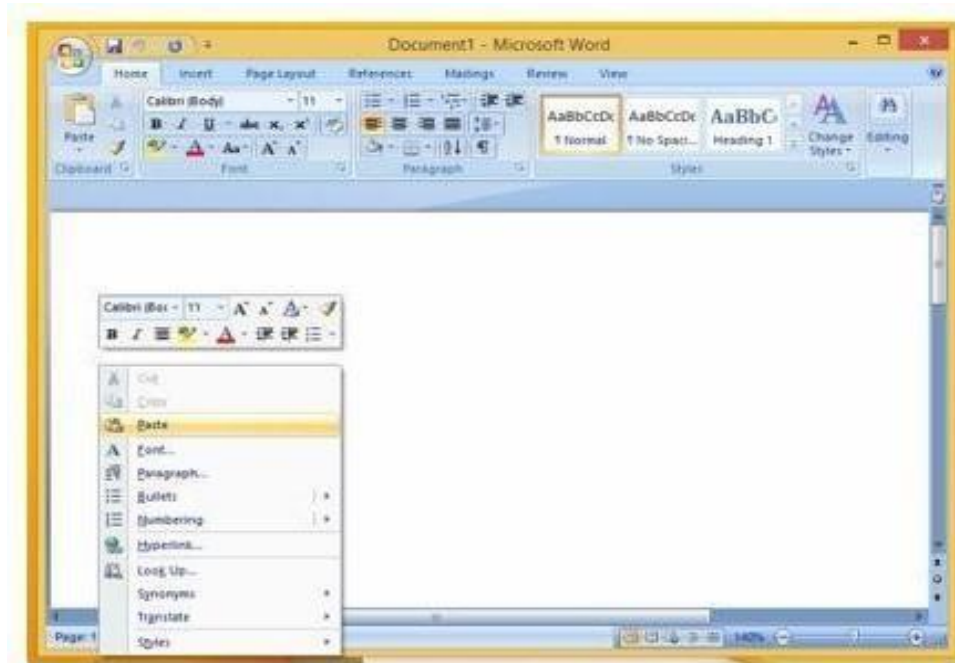
Copying the information from the webpage

- Highlight the information.
- Right click on the highlight and select **Copy** from the pop-up menu or use the shortcut, **Ctrl + C**.



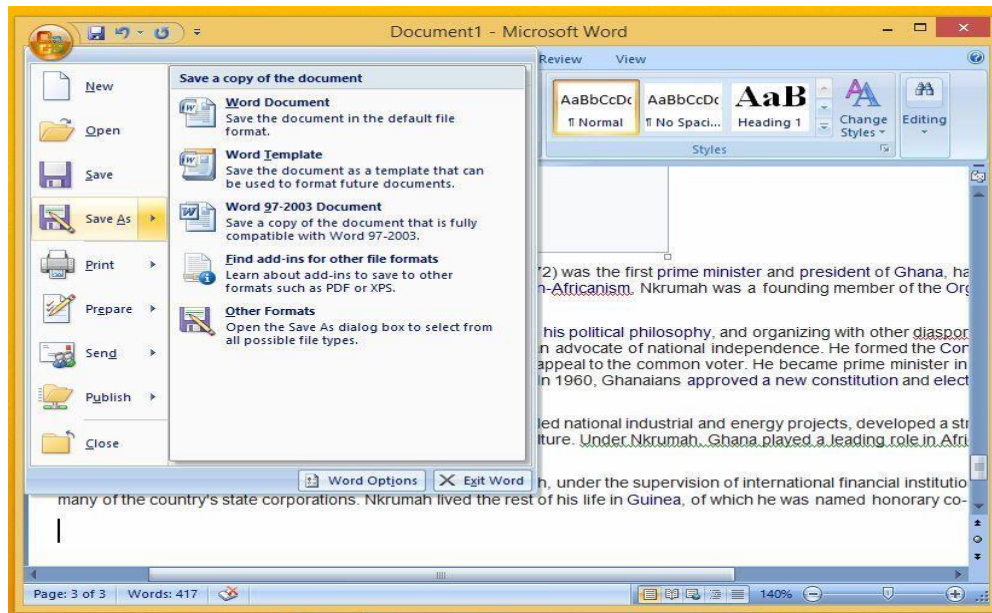
Pasting the information onto a word processor (e.g. MS-Word);

- Launch a word processor e.g. MS-Word.
- Right click on the document and select **Paste** from the pop-up menu or use the shortcut, **Ctrl + V**.

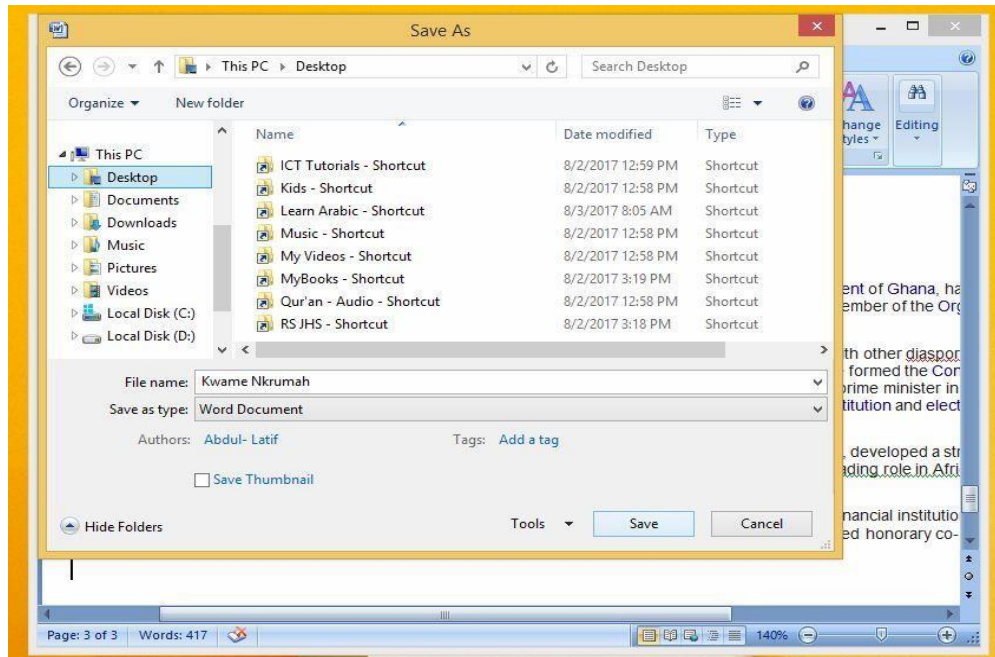


Saving the document (e.g. desktop, document folder, etc.)

1. Click **File** from the **Menu Bar** or **Office Button** .




2. In the left column, you click **Save As**. [You may choose to name the document by typing the name into the space for 'File Name'].



3. Select location for the file (e.g. desktop)
4. Move the cursor to **SAVE** and click it or press **Enter** Key.

Summary

- Launch a browser e.g. chrome.
- Type the website address (e.g. <http://www.google.com>)
- Press **Enter** key.
- Type the word or phrase that you want to search (e.g. Kwame Nkrumah) in the search bar
- Press the **Enter** key.
- Scroll through the thousands of results and select the result that best suit what you are searching for by clicking on its hyperlink to open the page.
- Highlight the information.
- Right click on the highlight and select **Copy** from the pop-up menu.
- Launch MS-Word.
- Right click on the document and select **Paste** from the pop-up menu.
- Click **File** from the **Menu Bar** or **Office Button** .
- In the left column, you click **Save As**. [You may choose to name the document by typing the name into the space for '**File Name**'].
- Select location of the file (e.g. desktop)
- Move the cursor to **SAVE** and click it or press **Enter** Key.

Chapter 42 - Ways of Sharing Information

Got information in the form of a document, graphic, spreadsheet, program or just a thought you want to share with your co-workers or family and friends? The method you choose to share it depends on the content you're sharing, your personal work style, the tools you have and if you're at home, in your office or on the road.

The following are the commonest ways of sharing information:

- E-mail with/without Attachments
- Instant Messaging (IM)
- Websites and blogs
- Sending a Fax
- Network File Shares
- Storage Devices: CDs, DVDs, or Floppy Discs, and USB Storage Devices

E-mail

E-mail is quick, easy, and you're probably already familiar with how it works. Using Microsoft Office **Outlook**, **Google** or **Yahoo** mails to send and receive e-mail works great for sharing thoughts, issues, questions, and even larger materials. For instance, a prospective job seeker can use e-mail to apply for a job.

	Benefits	Challenges
1	Easily exchange information	May not get an immediate response from recipient
2	Recipient can get back to you on their own time	Some companies have limits on the file sizes you can put in your e-mail, making it difficult to share large files
3	Share information with many people at once	Virus can attack the file
4	Have a record of your communication	

Sending Attachments

Attachment is a file that is sent with an email message. Attaching files to e-mail is a great way to share documents with people. Students can attach their assignment to e-mails and send it to their teacher for marking.

	Benefits	Challenges
1	Share larger amounts of information than e-mail messages alone can handle	Consolidating feedback from many people into one file is difficult when you receive many different versions of the same file
2	Quickly send documents you think others may find interesting	Many IT departments limit the size of a file you can attach in an e-mail since large files can clog the recipient's e-mail inbox
3	Distribute documents to many people at once	

Instant Messaging (IM)

Instant Messaging (IM) is an online chat service that involves text and graphic based messages between users. E.g. WhatsApp, Telegram, etc.

	Benefits	Challenges
1	Real-time text, data, audio, and video sharing	Use of public IM services do not log or encrypt data transmissions
2	Exchange of quick questions and answers	Sharing large or complex information very difficult
3	Knowing when friends are available	Documenting your communication is normally not possible
4	It allows PCs and Smartphones to participate	
5	Saving time and money	

Websites and Blogs

A **website** is a collection of related webpages. A **blog** on the other hand is a website that maintain on going chronicle of information through discussions. Blog is an abbreviation of **weblog**. **Shared Workspace Site** is an example of probably the most convenient way for co-workers to work together on documents and projects.

	Benefits	Challenges
1	Consolidate feedback in one file	Co-workers disconnected to the network won't be able to access the shared workspace site
2	Have one version of a file that everyone can view, modify, and add comments	Requires IT support to set up and maintain SharePoint Services
3	Manage file revisions and project updates	Have one view of the status of projects and documents
4	Set up a shared location to store team and project documents	
5	Keep shared calendars	

Using Fax Services

Fax is a telephonic transmission of scanned-in printed text or picture to a telephone line associated with a printer or other output devices. It's a device that transfers hardcopy documents through telephone lines.

	Benefits	Challenges
1	Send documents to people who need a hardcopy	No immediate response
2	Send faxes to an e-mail address or a standard fax machine	Using fax services to work together on files isn't a viable solution.
3	Send faxes to as many recipients as you want	Quality of document usually low
4	Send documents that need a signature	It takes long time to transmit
5	Send documents to people who don't have computers	

Network File Shares

A simple way to share large files is to copy the file to a server on your company's network. You can also publish a folder on your own computer as a network file share location. Most companies, schools and universities use this method to share information among workers; students and teachers/lecturers: etc.

	Benefits	Challenges
1	Share large files	It's difficult to make sure two or more reviewers aren't making conflicting changes.
2	Keep archives of files for reference	Some co-workers may not have access to the file share.
3	Give many people access to a file	
4	Using file shares to work together on documents.	
5	Working in highly secure environments where access to files shares is rigidly controlled.	

Storage Devices

Storage devices are handy ways to share presentations, digital photos, videos, and audio files with your work colleagues and friends or to carry files between work, school and home. If the recipient isn't on a network or the file is really big, sometimes it's still the best way to go. Examples of storage devices that can be used to share information are CDs, DVDs or Floppy Discs, and USB Storage Devices

	Benefits	Challenges
1	Works well when co-worker are disconnected from the Internet or don't have access to e-mail	Newer computers might not have a floppy disc drive
2	Sharing larger programs and files, as well as collections of files (such as pictures and songs)	Floppy discs have file size limitations
3	Taking information with you when you're working away from the office	Distributing files to many people at once is very difficult
4	Quick file transfers between disconnected computers	Consolidating feedback from several co-workers is not easy
5	Getting quick feedback or comments on your files	

Chapter 43 - Email Messaging

We learnt in year one that, **Email** is a network communication system used to transmit messages from one networked computer to another over the Internet.

To **compose email** means to create a message in the form of text entered from the keyboard with or without an **attachment**.

You cannot compose (and send) an email without logging into an email account.

Log In

Log In is the process by which an individual gains access to a computer system or a website by identifying and authenticating themselves with a **username** and a **password**. Log In is also known as **Log On** or **Sign In**. You need to **sign-up** (register) before you can **log-in** to email or any website or blog.

NB: **Logging In** means the process of gaining access to your e-mail account or website.

How to Sign In / Log Into E-mail Account

1. Open your e-mail service log in webpage (mail ISP). E.g. www.gmail.com or www.ymail.com
2. Type your e-mail **username** or **user ID**.
3. Type your password.
4. Click on **Sign In** or press **Enter** key to launch your e-mail account.

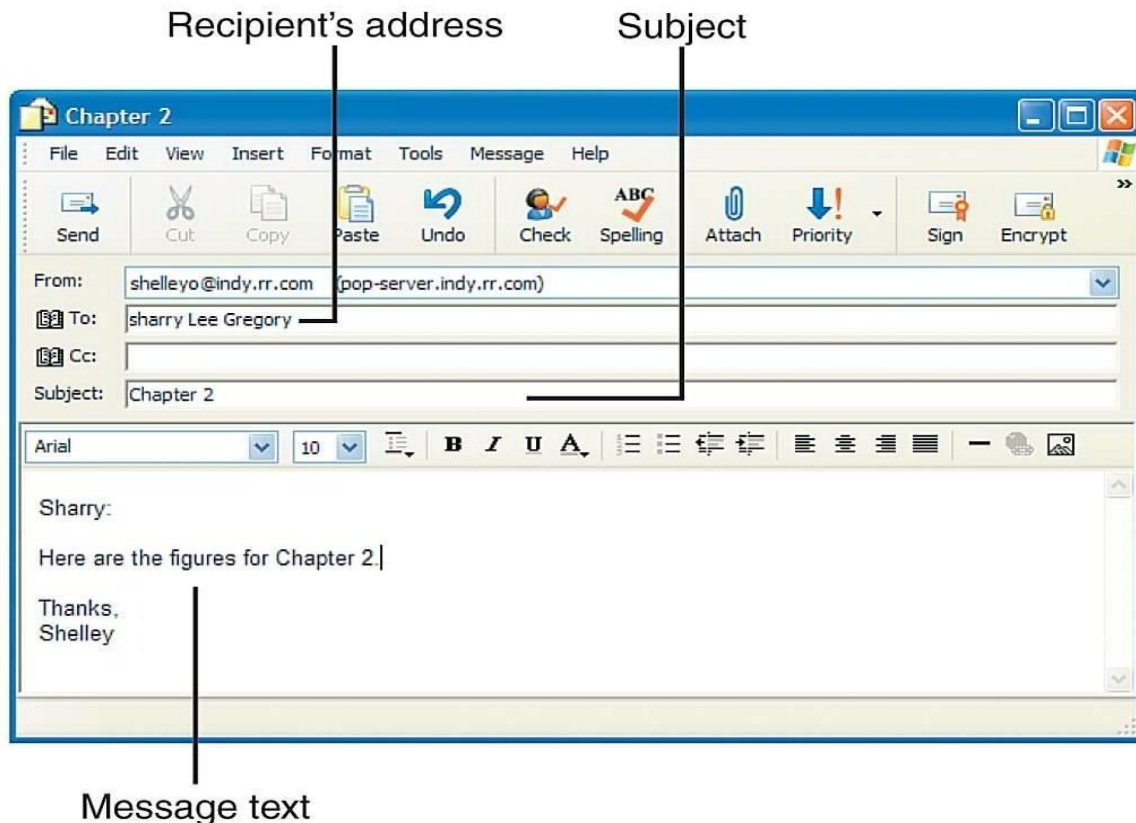


Ymail Sign In Forms

E-mail terminologies

- **From:** is the location where the sender's email address is inserted.
- **To:** is the location where the original **recipient(s)** email address(es) is/are inserted.

- **Carbon copy (Cc)** is used to send the same information to other recipients apart from the original recipient.
- **Blind carbon copy (Bcc)** is used to secretly send the same information to other recipients.
- message.
- **Subject** is the location where the title/theme of the email message is inserted before sending a message.




Composing E-mail Messages

1. Log into your e-mail account.

2. Click the **Create Mail (compose)** button . The New Message window appears.


3. Type the **recipient's e-mail address** or **add recipient from your Address Book**  in the


To: box .

4. (Optional) To send a copy of a message to someone, click in the **Cc:** field  and/or the **Bcc:** field and repeat Steps 3 to enter their e-mail addresses.

5. Click the **Subject** field  and enter a subject for the e-mail.

6. Click the **Message Body**, in the lower pane, then type the message as you would in a word processor.

7. (Optional) To send a **file or picture** along with your message click the **Attach** button  on the toolbar and then select the file in the **Insert Attachment** dialog box.

8. When you're finished with the message, click the **Send Message** button  on the toolbar.



A composed email message

NB:

✓ **Things to consider when composing e-mail account:**

1. The recipients of the e-mail message.
2. The subject of the e-mail message
3. The message itself.

✓ The **Recipient's Email Address** is mandatory to complete on email window when composing email.


✓ If you are sending to multiple people, use a **semicolon (;)** to separate the email addresses.

✓ Carbon Copies (**Cc**) and Blind Carbon Copies (**Bcc**).

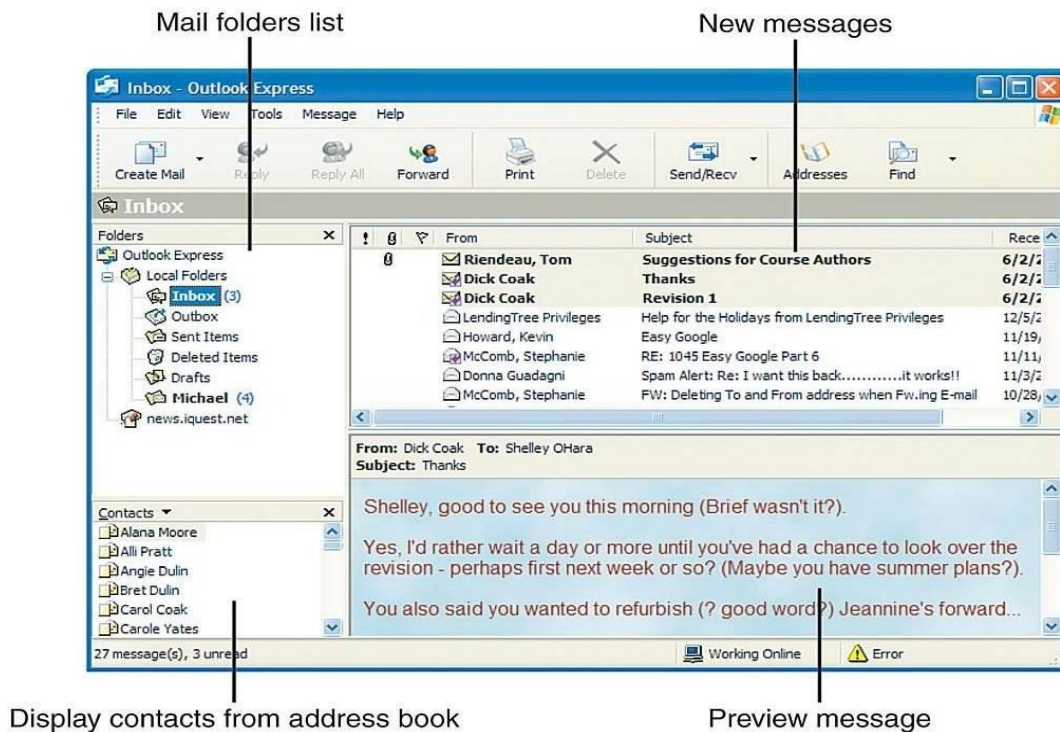
Chapter 44 - Accessing E-mail Messages


Every email account has an inbox. The **inbox** refers to the location in the email account where email messages are stored. Every email you receive goes to the inbox. To access and read email, you must visit your inbox.


Accessing E-mail Messages

1. Log into your e-mail account.
2. If the contents of the **Inbox** folder  do not display, click on the inbox folder to display the contents.
3. Click the message you want to read. The contents of the message appear in the lower-right pane, and the **From** and **Subject** information appear at the top of this pane

From: Dan High **To:** Emily Mahlen; Melissa Berg
Subject: Your next projects



4. (Optional) If a message has one or more files attached to it, a **paper clip**  will also appear in this area. To open any file attached to a message, click the paper clip icon and then click the file you want to open from the list that appears from the paper clip.
5. (Optional) Using **Reading Pane**, click the **Previous** and **Next** buttons on the toolbar to access previous and next e-mail messages in the **Inbox**.

NB: Any new, unread messages appear in **bold** and have a **closed envelope icon**  next to them.

Chapter 45 - Replying E-mail Messages

You can reply to a message, just like you would answer a letter. This lesson explains how to do it.

Replying E-mail Messages

1. Find and open the message you want to reply to.

2. Click the reply option you want to use: **Reply to Author**



or **Reply to All**



3. Type your reply in the message body above the email message you're replying.

4. (Optional) To send a **file or picture** along with your message click the **Attach** button



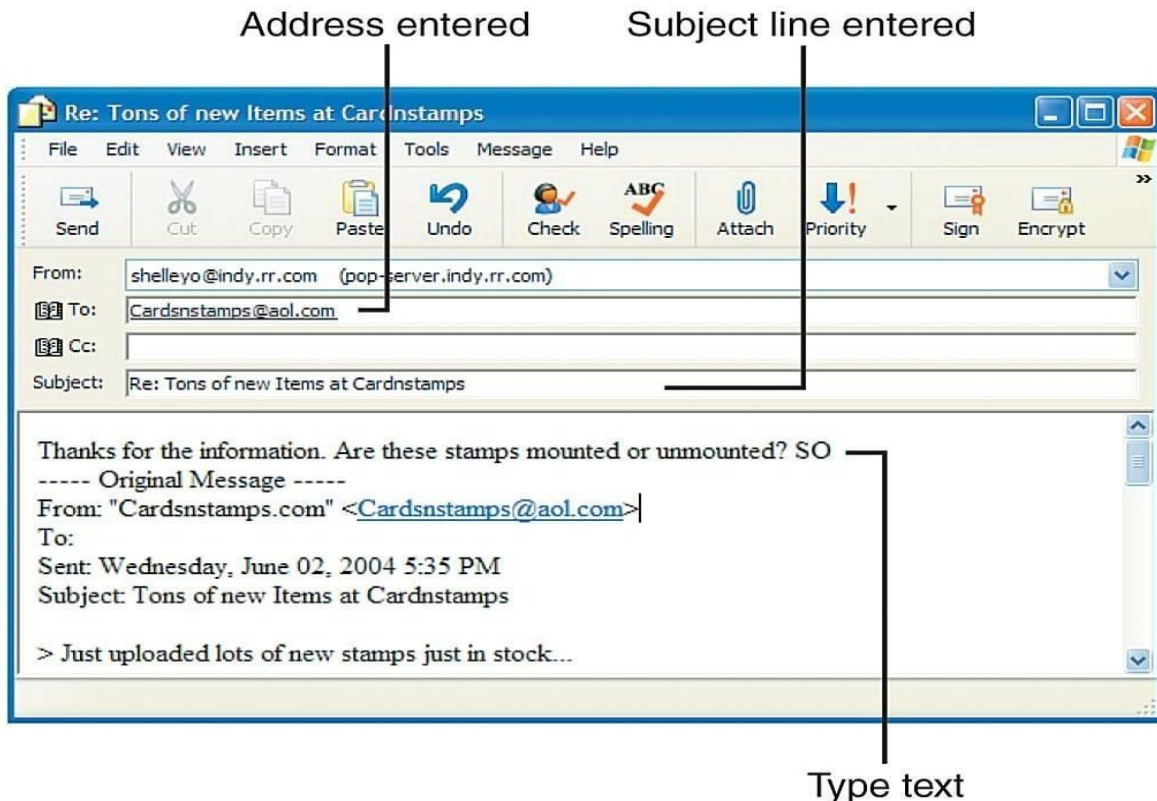
on the toolbar and then select the file in the **Insert Attachment** dialog box.

5. Click the **Send** button



Send

on the toolbar when you're finished.



NB:

- ✓ **Reply to Author:** Sends the reply only to the author of the message.
- ✓ **Reply to All:** Sends the reply to everyone who received the message.

- ✓ When replying to an email, **Re:** is added to the subject (theme) of the email.


Log Out

Log Out is the process by which an individual ends the access to a computer system or website. Log out is also known as **logoff**, **signoff** or **sign out**.

- **Logging Out** means to end access to a computer system, e-mail account or a website. Logging out informs the computer or website that the current user wishes to end the login session.

How to Log Out / Sign Out of E-mail Account

1. Open your e-mail service webpage (mail ISP) E.g. gmail.com or ymail.com
2. In the top right, click your photo.
3. Click **Sign out** from the **Pop-Up Menu**.



The screenshot shows the Yahoo! homepage. At the top, there is a navigation bar with links for Home, Mail, Flickr, Tumblr, Answers, Groups, Mobile, and More. Below this is the Yahoo! logo and a search bar. On the left side, there is a vertical menu with icons for Mail, News, Sports, Finance, Autos, Celebrity, Shopping, and Movies. The main content area features a large article titled "Gomez, Swift turn heads at Grammys" with a photo of Selena Gomez and Taylor Swift. Below this are four smaller article thumbnails: "Grammys live blog: Best performances", "Gaga channels: Bowie on Grammys", "Justin Bieber wins his first Grammy", and "East Coast braces for vast winter". In the top right corner, there is a user profile for "Emily" with a notification icon for Mail. A dropdown menu is open, showing the user's name "Emily McPeck", email address "emcpeek88@yahoo.com", and options for "Account info", "Add account", and "Sign Out". A green arrow points to the "Sign Out" option.

Signing out of Ymail

Chapter 46 - Deleting and Retrieving Email Messages

There are a couple of common places from which you may want to delete an email message: from the message window or from the Inbox.

Deleting Messages

Deleting Messages from the message window:

1. Open the message in the inbox.
2. Click **Delete** button  e-mail toolbar.

Deleting a Message from Inbox

1. Click on inbox.
2. Select the first message to be deleted
3. Click **Delete** from e-mail toolbar.

Deleting many Messages from Inbox

1. Click on inbox.
2. Select the first message to be deleted
3. Hold down the [**Shift**] key, Select the next item.
4. Repeat steps 3 until all messages to be deleted are selected
5. Click **Delete** from e-mail toolbar.

Retrieving Deleted Messages

If you have accidentally deleted a message that you want to keep, you can retrieve it if your Deleted Items folder has not been emptied yet.

1. From the Folder list, select **Deleted Items (trash)**. Items in the **Deleted Items** folder will appear.
2. Select the message (s) you want to keep (retrieve).
3. Drag the message to the Inbox



Chapter 47 - The Spreadsheet (Excel)

A spreadsheet is a grid or table made from columns and rows that is primarily used to work with numbers and text. It is an accounting program for the computer.

NB: The common spreadsheet applications include **Lotus 1-2-3, Quattro Pro, Open Office** and **MS-Excel**.

Launching MS- Excel

To launch a new blank worksheet, if the icon (shortcut) of MS- Excel is not on the desktop, follow these steps:

1. Click the **Start Button**  to open the **Start Menu**.
2. Click on **All Programs** . (A menu listing the different program categories pops out above the Start menu).
3. Point to **Microsoft Office Suite**. (The Microsoft Office Suite menu pops out above the Start menu. The Microsoft **Office Excel** is part of the menu. Can you find it?)
4. Click on **Microsoft Office Excel**.


If the icon (shortcut) is on the desktop:

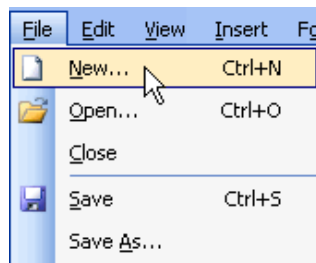
1. Move the mouse cursor to the **icon** of **MS- Excel** on the desktop.
2. Double click on the icon to open a new blank worksheet.

OR

1. Move the mouse cursor to the **icon** of **MS- Excel** on the desktop.
2. Right click on the icon.
3. Select **Open** from the **Pop-Up Menu**.

Launch a new blank Worksheet if Microsoft Excel is already opened

1. Click File from the Menu Bar or Office Button .
2. In the left column, you click **New** option.



OR

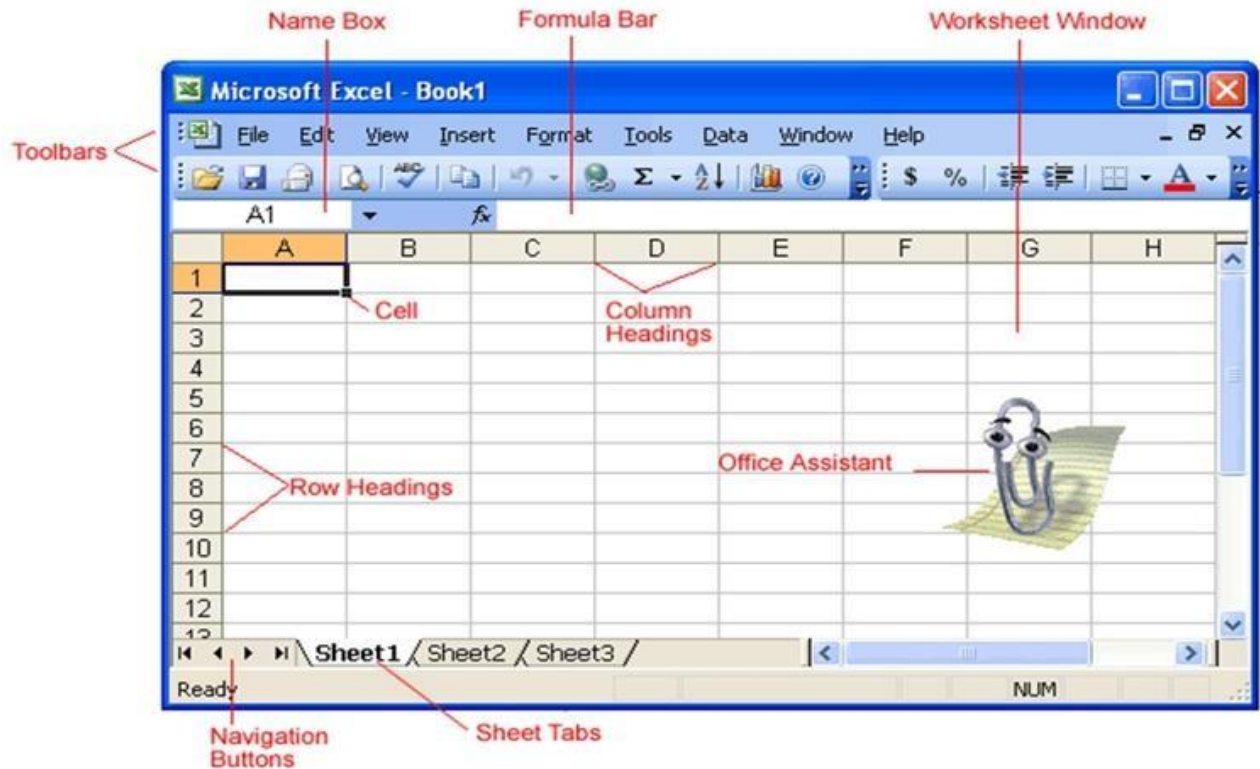
- Click the **New** tool on the **Standard Toolbar** to open a new blank document.

OR

- Use the shortcut keys, **CTRL + N** (Depress and hold **CTRL**, Press and release 'N') to open a blank document.

Features of Excel

Many items you see on the Excel screen are standard in almost all other Microsoft software programs, including Word, PowerPoint, and previous versions of Excel. Some elements are specific to this version of Excel.



Features of Excel

Title bar

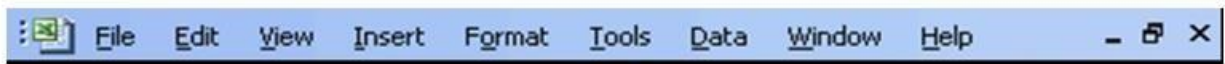
The Title bar displays both the name of the application and the name of the spreadsheet, and the control box.



Title Bar

Menu bar

The Menu bar displays all of the menus that are available for use in Excel. The contents of any menu can be displayed by clicking on the menu name with the left mouse button.



Menu Bar

Toolbars

Below the menu bar are the toolbars. A **toolbar** is a bar containing buttons and options that you use to carry out or access commands more quickly than by opening the menus and the respective dialog boxes.

Toolbars consist of icons that act as short-cuts to the commands found under the menus. The **standard, formatting and drawing toolbars** are the main examples of Toolbars.

Standard Toolbar



Standard Toolbar



Labeled Standard Toolbar

1. **New:** Create a new, blank spreadsheet
2. **Open:** Open a previously saved spreadsheet
3. **Save:** Save your current spreadsheet
4. **Permission:** Microsoft has enabled Information Rights Management (IRM) within the new version of Excel, which can help protect sensitive documents from being copied or forwarded. Click this for more information and options.
5. **Print:** Prints the current document.
6. **Print Preview:** Preview the potential print of the current document.
7. **Research:** Microsoft has enabled Information Rights Management (IRM) within the new version of Excel, which can help protect sensitive documents from being copied or forwarded. Click this for more information and options.
8. **Copy:** Copies the current selection to the clipboard, which can then be pasted elsewhere in the document.
9. **Paste:** Takes the current clipboard contents and inserts them.
10. **Undo:** Undoes the last action in the document, reverting “back” a step-in time.
11. **Insert Hyperlink:** Inserts a hyperlink to an Internet location.
12. **AutoSum:** A drop-down menu of available mathematical operations to perform.
13. **Sort Ascending:** Sorts the current selection in ascending order.
14. **Chart Wizard:** Opens the “Chart Wizard,” which will walk you through the creation of a chart / diagram using the currently selected information.
15. **Microsoft Excel Help:** Brings up the Excel Help window, which will allow you to type in a key-word for more information or click anything on screen to directly bring up further information on that subject.
16. **More Options:** There are a variety of extra options you can call or add to the toolbar, such as Spell Check, Sort Descending, Cut, Redo, etc. By clicking the triangle, you can access these options; at the same time, you can drag this toolbar outwards more to make more available space for these options directly on the toolbar.

Formatting Toolbar



Format Toolbar



Labeled Format Toolbar

1. **Font:** Change the font of the selected cell(s)
2. **Size:** Change the font size of the selection
3. **Bold:** Put the selection in **bold** face
4. **Italics:** *Italicize* the selection
5. **Underline:** Underline the selection
6. **Align Left:** Align the current selection to the left
7. **Center:** Align the current selection to the center
8. **Align Right:** Align the current selection to the right
9. **Merge & Center:** Combine two selected cells into one new cell that spans the width of both and center the contents of this new cell
10. **Currency Style:** Change the style in which currency is displayed
11. **Percent Style:** Change the style in which percent is displayed
12. **Decrease Indent:** Decrease the indent of a cell by approximately one character
13. **Border:** Add or alter the style of borders to format a cell with
14. **Fill Colour:** Select a colour to fill the background of a cell with
15. **Font Colour:** Select a colour to apply to a selection of text

Drawing Toolbar



Drawing Toolbar

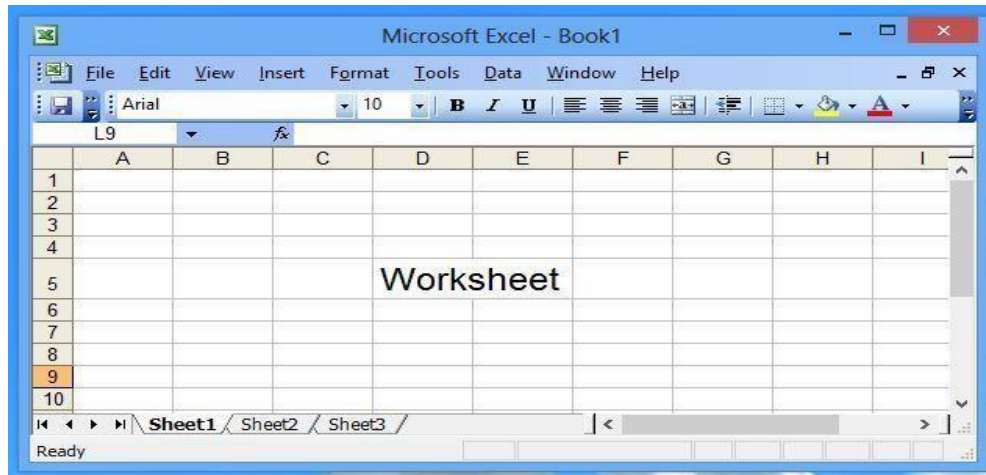
Explaining Terms

Workbook

A workbook is an Excel file containing one or more worksheets. It automatically shows in the workspace when you open Microsoft Excel. A workbook is the file you save anytime you create a new document in MS-Excel. Also called a **spreadsheet**.

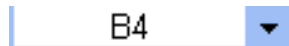
Worksheet

A worksheet is a single excel page in a workbook. It is a grid of cells consisting of 65,536 **rows** by 256 **columns**. By **default**, every excel document has **three worksheets**. You can add or remove worksheets from a document.



Name Box

Name box is the rectangular area above the top-left corner of a worksheet in which excel displays the cell reference of the active cell. It shows the address of the current selection or active cell. E.g. B4, A1, D8, G400, CH5, IV65536, etc.



Formula Bar

The Formula bar displays information entered or being entered as you type in the current or active cell. The contents of a cell can also be edited in the Formula bar.



Navigation buttons

Navigation buttons allow you to move to another worksheet in an Excel workbook. They are used to display the first, previous, next, or last worksheets in a workbook.

Sheet Tabs

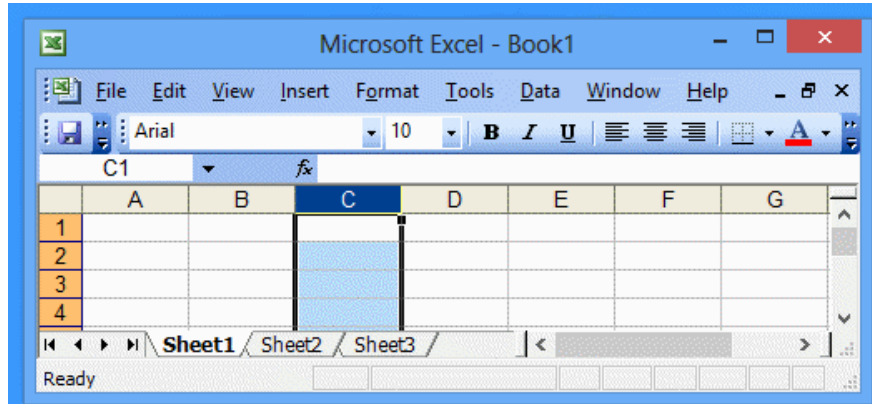
Sheet tabs separate a workbook into specific worksheets. A workbook defaults to three worksheets. A workbook must contain at least one worksheet.



Navigation Buttons and Sheet Tabs

Column

A column is defined as the vertical space that goes up and down the window. Letters of the alphabet are used to identify columns location. There are **256 columns** in a single Excel worksheet. The **first column is labelled A** up to the 26th which is **Z**. The 27th column is labelled as **AA** and 53rd, **BA**. **The last column is labelled IV**.

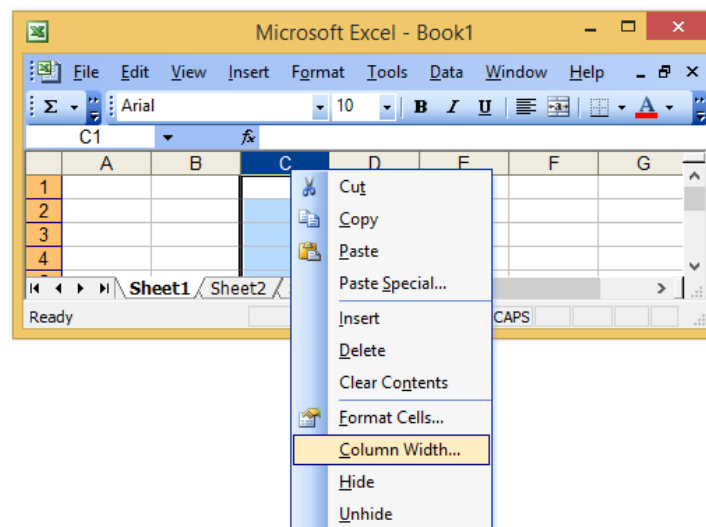


Adjusting column width

You can adjust the width of a column by using the mouse to drag the borders of the column heading.

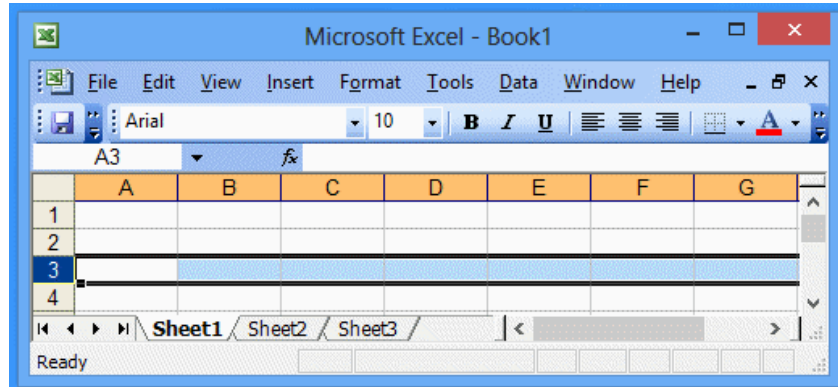
OR

1. Click the column heading to select the column
2. Right click on the column heading and select column width
3. Enter the width size and
4. Click **Ok** or press the Enter key



Row

A row is defined as the horizontal space that moves across the window. It is identified by numbers that appear on the left and then run down the Excel screen. There are **65,536** rows in an Excel worksheet. **The first row is labelled 1 and the last row is labelled 65,536.**

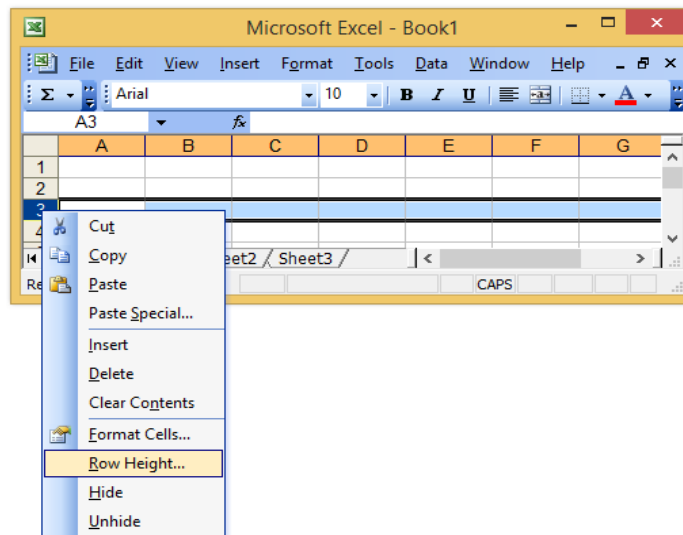


Adjusting row height

You can adjust the height of a row by using the mouse to drag the borders of the row heading.

OR

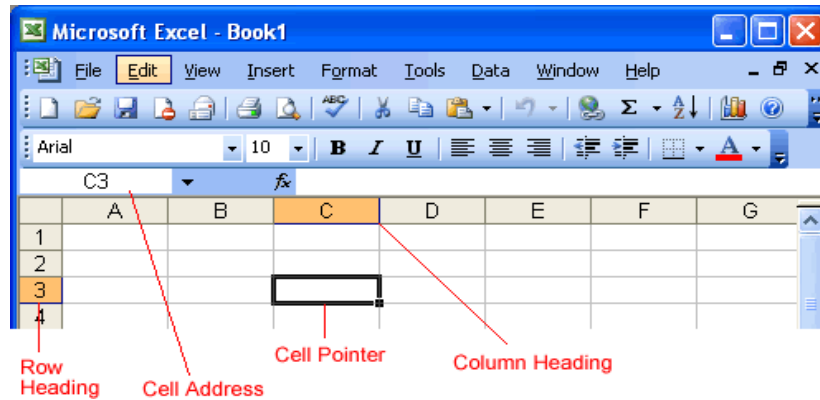
1. Click the row heading to select the row
2. Right click on the row heading and select row height
3. Enter the height size and
4. Click **Ok** or press the Enter key



Cell

An Excel worksheet is made up of **columns** and **rows** as explained earlier. Where these columns and rows intersect, they form little boxes called **cells**.

A cell is defined as the space where a specific row and column intersect. A cell has a name or address. The name is comprised of two parts: the **column letter** and the **row number**. The name of a cell is known as **cell address**. The cell address identifies the location of each cell. E.g. C3, G4, A10, Z100, etc.



In the picture above, **cell C3**—formed by the intersection of **column C** and **row 3**—contains a dark border. It is the **active cell**. The active cell, or the cell that can be acted upon. All other cells reveal a light gray border. The heavy border around the **selected (active) cell** is called the **cell pointer**. Data and formulas are entered into the active cells.

NB: Cell addresses starting with row numbers, like 3C, 4G, 9J, 7H, 56D. etc are **invalid** cell addresses.

Cell Range

A group of cells is known as a cell range. The cell range is the addresses of the first and last cells, separated by colon. For example, a cell range that included cells C8, D8, E8 and F8, would be written as C8:F8. Likewise, E5, E6, E7, E8 and E9, would be written as E5:E9.

Moving Around the Worksheet

To move a around a worksheet:

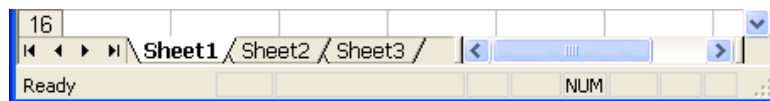
- **Activate** any cell: point to a cell with the mouse and click.
- **Move** the pointer one cell to the left, right, up, or down with the keyboard **arrow keys**.

Moving between Worksheets

As mentioned, each workbook defaults to three worksheets. These worksheets are represented by tabs—named Sheet1, Sheet2 and Sheet3—that appear at the bottom of the Excel window.

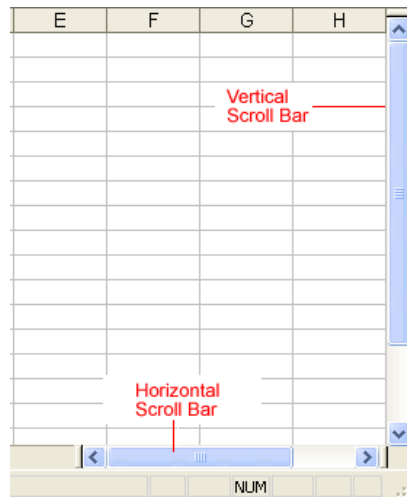
To move from one worksheet to another worksheet:

- Simply click the sheet tab (Sheet1, Sheet2, or Sheet 3) that you want to display.



Scrolling through the Worksheet

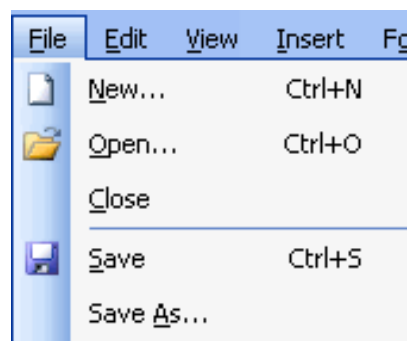
- The **vertical scroll bar** located along the right edge of the screen is used to move up or down the spreadsheet.
- The **horizontal scroll bar** located at the bottom of the screen is used to move left or right across the spreadsheet.



The **PgUp** and **PgDn** keys on the keyboard are used to move the cursor up or down one screen at a time. Other keys that move the active cell are **Home**, which moves to the first column on the current row; and **Ctrl + Home**, which moves the cursor to the top-left corner of the spreadsheet, or cell A1.

File Menu - Terms









The File menu contains all of the operations that we'll discuss in this lesson: **New**, **Open**, **Close**, **Save**, and **Save As**.



- **New**: This is used to create a new workbook.
- **Open**: This is used to open an existing file from a floppy disk or hard drive of your computer.
- **Close**: This is used to close a spreadsheet.
- **Save As**: This is used to save a new file for the first time or to save an existing file with a different name.

- **Save:** This is used to save a file that has had changes made to it. If you close the workbook without saving it, any changes that were made will be lost.

Excel Pointers

- **Normal pointer**  : it is used to select a cell or range; indicates ready mode.
- **Fill handle**  : It is used to create an alpha-numeric series in a range.
- **I - Beam**  : It is used to edit contents of formula bar.
- **Move**  : it is used to change the location of selected cell or cells.
- **Column Resizer**  : It is used to widen or narrow the width of a column.
- **Row Resizer**  : It is used to increase or decrease the height of a row.
- **Column Selector**  : It is used to select a whole a column.
- **Row Selector**  : It is used to select a whole a row.

Uses of Excel or Spreadsheet

- **Use to maintain values:** By calculating numbers.
- **Representing values graphically:** By creating charts based on worksheet figures.
- **Analyse data:** Creating data summaries and short-lists using **PivotTables** or **AutoFilters**.
- **Organize data:** Sorting data in ascending or descending order.
- **Create “what-if“ data for decision making:** Using variable values to investigate and sample different outcomes.
- **Calculating employee payments:** It is used to prepare salaries of workers or employees.
- Keeping simple company accounts.
- It makes it faster and accurately when performing mathematical calculation.
- It is used to prepare records of organization and employees.
- Simple stock control systems.

Summary

- Each Excel worksheet is made up of columns and rows.
- A **column** is a vertical space that goes up and down the window identified by an alphabet.
- A **row** is a horizontal space that moves across the window identified by a number.
- A **cell** is defined as the space where a specific column and row intersect.
- A darkened border, called the **cell pointer**, identifies a cell.
- Each cell has a unique **cell address**, which is composed of a cell's column and row.
- **Range** is a group of specified/selected adjacent cells.

- The **active cell** is the cell that receives the data or command you give it. It is a dark rectangle that outlines the cell you are working in.
- **Worksheet** is the electronic sheet that contains rows and columns.
- The worksheets are labelled **Sheet1**, **Sheet2** and **Sheet3**.
- In order to access a **worksheet**, click on the tab that says **Sheet#**.
- A **workbook** is a spreadsheet file which consists of one or more worksheet(s).

Chapter 48 - Creating Workbook

A **blank workbook** is displayed when Microsoft Excel is first opened (see chapter 47 for how to launch a workbook). You can type information or design a layout directly in this blank workbook.

Types of Data in Spreadsheet

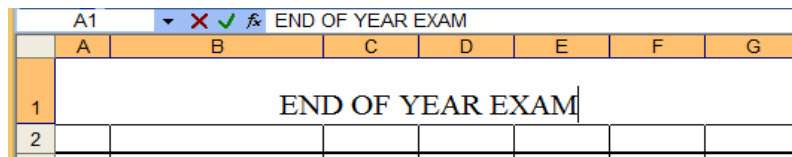
You can enter four types of data in a cell: **labels/text**, **numbers**, **functions** and **formulas**.

- **Value:** Values are generally raw numbers or dates. Generally, a value is a number on which calculations can be done using formulas. Any entry that starts with $+$, $-$, or a period ($.$), is a value. E.g. 17.83, +23324411111
- **Labels / Text:** A label is any text entry that contains an alphabet or non-numeric character (like #, &, etc.). values are descriptive pieces of information such as names, months, etc. E.g. Musah, January, Friday, 24.04', #6, 7th, 57 Lane, etc.
- **Formula:** formulas are instructions for excel to perform calculations. E.g. $A7+B7$, $=C4*C5$, $=F11-G11$, $=Z6/M20$, etc.
- **Function:** A **function** is a **predefined (inbuilt) formula** that helps perform common mathematical functions. E.g. $=SUM(A5:G5)$, $AVERAGE(B2:B6)$,

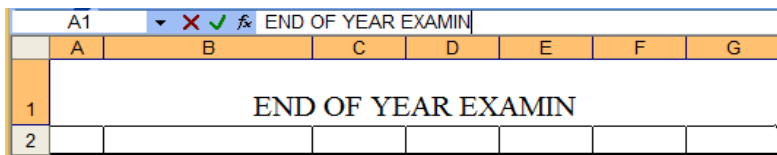
Entering Data

To enter data into a cell:

- Click the cell where you want to type information.
- Type the data. An insertion point appears in the cell as the data is typed.



- The data can be typed in either the **active cell** (as in above) or in the **Formula bar** (as in below).



- Data being typed appears in both the **active cell** and **Formula bar**.
- Click on the **Enter Key** or the **Arrow Keys** to move to the next cell.

Data Entry Techniques

- **AutoFill:** Enter the first value in a recognized series and use the fill handle to extend the series.

- **Fill Series:** Enter the first two values in a series and use the fill handle to extend the series.
- **AutoComplete:** Type the first few letters in a cell, and if a similar value exists in the same column, Excel suggests the existing value.
- **Pick from Drop-down List:** Right-click a cell, and from the shortcut menu that appears, choose **Pick From Drop-down List**. A list of existing values in the cell's column appears. Click the value you want to enter into the cell.


NB; Excel's **AutoComplete** feature keeps track of previously entered text. If the first few characters you type in a cell match an existing entry in that column, Excel fills in the remaining characters for you.

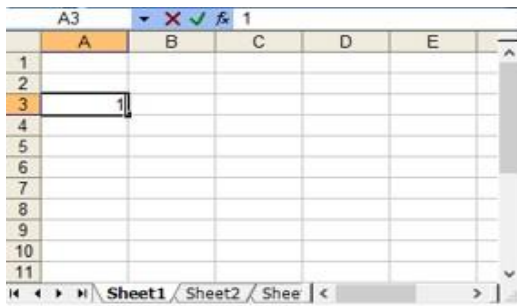
Automatic (Serial) Numbering

Unlike like Word, Excel does not provide button to number data automatically. But you can easily add sequential numbers to rows of data by dragging the fill handle a column with series of numbers or using the **row function**.

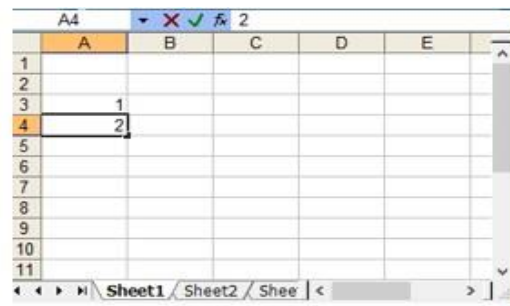
Fill a row or column with a series of numbers

To do this:

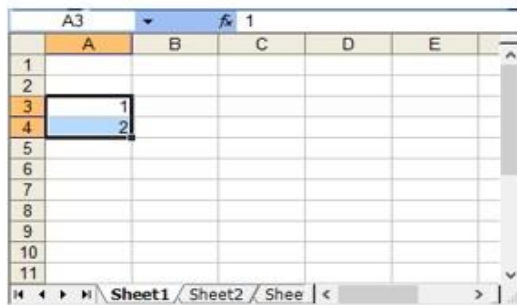
1. Select the first cell in the range that you want to fill (e.g. A3).
2. Type the starting value for the series (e.g. 1 in A3).
3. Type a value in the next cell to establish a pattern (e.g. 2 in A4). [Tip: For example, if you want the series 1, 2, 3, 4, 5..., type 1 and 2 in the first two cells. If you want the series 2, 4, 6, 8..., type 2 and 4.]
4. Select the cells that contain the values (e.g. A3 and A4)
5. Drag the fill handle  across the range that you want to fill (e.g. A3:A10)



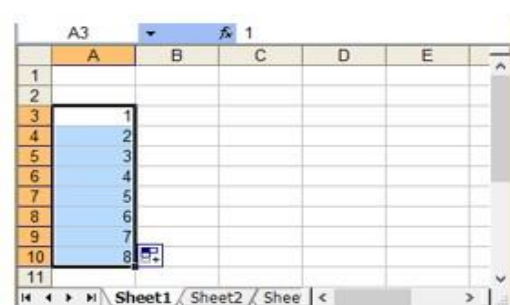
Step 1& 2



Step 3




Step 4



Step 5

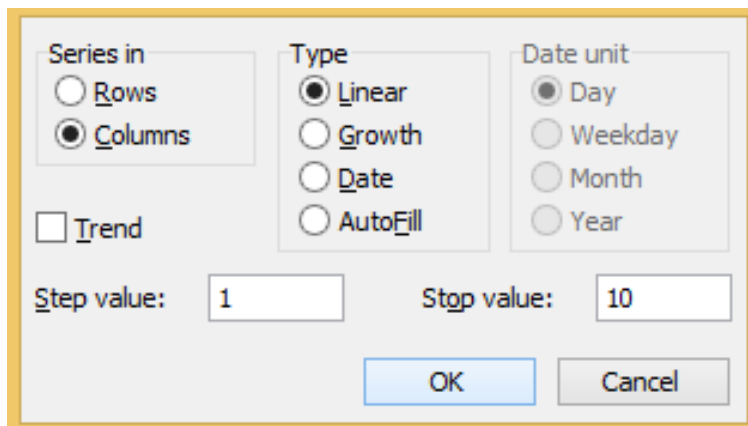
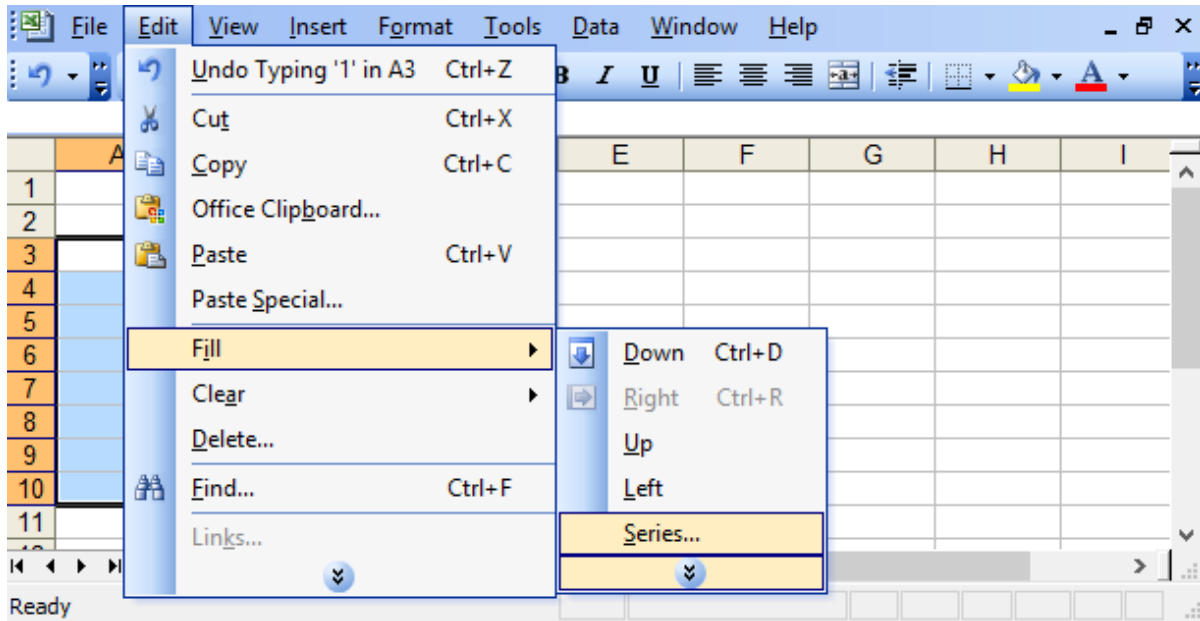
NB: As you drag the fill handle across each cell, Excel displays a preview of the value. If you want a different pattern, drag the fill handle by holding down the right-click button and then choose a pattern.

Alternative A

1. Select the first cell in the range that you want to fill. (e.g. A3)
2. Type the starting value for the series. (e.g. type 1 in A3)
3. Hold down the **Ctrl** key.
4. Drag the fill handle  across the range that you want to fill. (e.g. A3:A10)


Alternative B

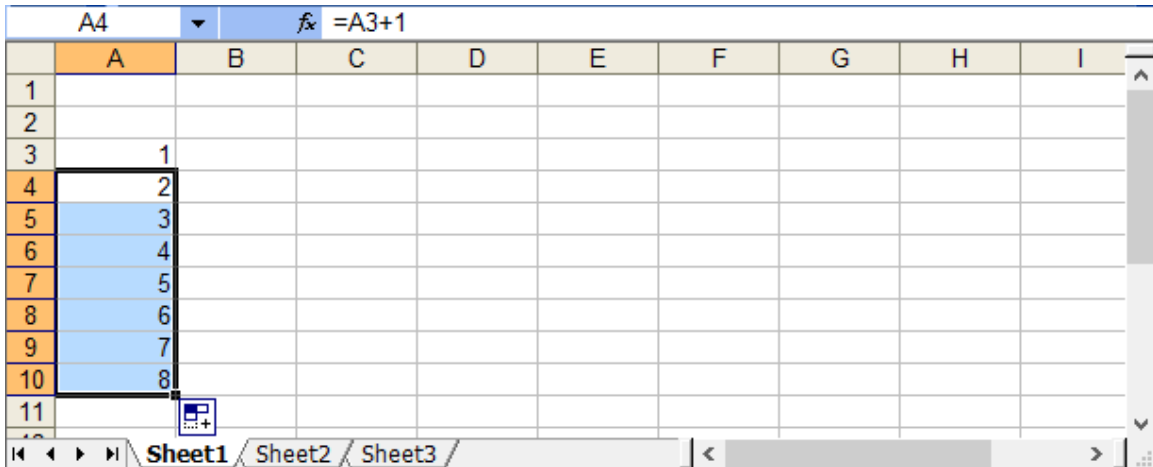
1. Select the first cell in the range that you want to fill. (e.g. A3)
2. Type the starting value for the series. (e.g. type 1 in A3)
3. Select the range. (e.g. A1 to A9)
4. Click on **Edit** on the **Menu Bar**.
5. Point to **fill**.
6. Click on **series**.
7. Enter the step value (e.g. 1).
8. Enter the end value (e.g. 7).
9. Click OK.




Fill and Series Pop up options

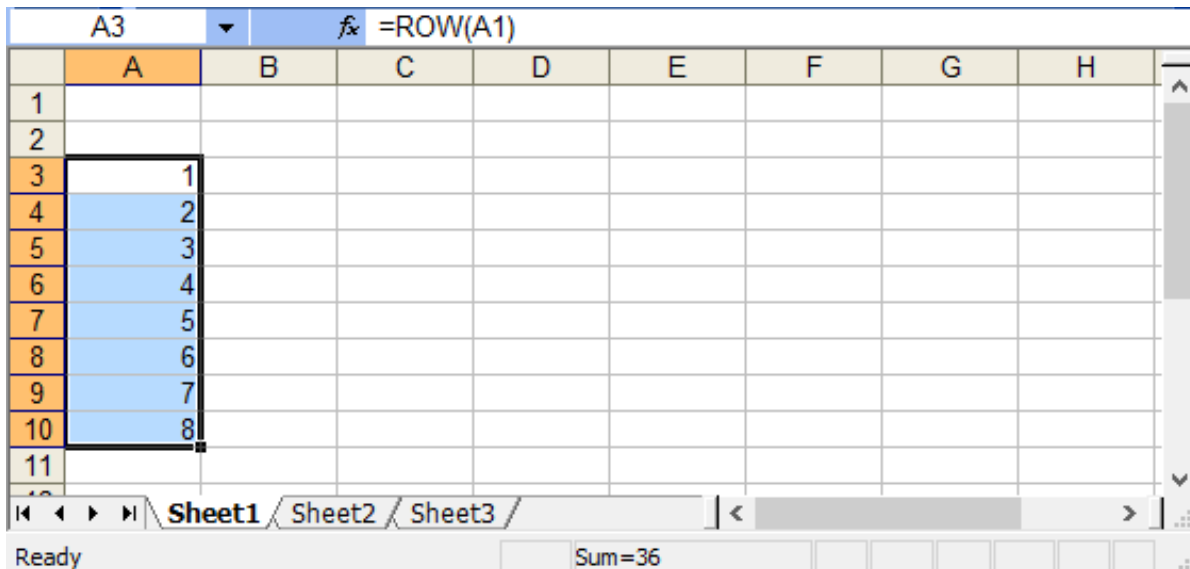
Alternative C

1. Select the first cell in the range that you want to fill. (e.g. A3)
2. Type the starting value for the series. (e.g. type 1 in A3)
3. Type a formula in the next cell to establish a pattern. (e.g. =A3+1)
4. Select the cells that contain the starting formula (e.g. A4)
5. Drag the fill handle  across the range that you want to fill. (e.g. A4:A10)



Use function to number rows or columns

1. Select the first cell in the range that you want to fill. (e.g. A3)
2. Type the ROW function (e.g. =ROW(A1)). [The ROW function returns the number of the row that you reference. For example, =ROW(A1) returns the number 1.]
3. Select the cells that contain the function (e.g. A3).
4. Drag the fill handle  across the range that you want to fill. (e.g. A3:A10)



ROW function

The screenshot shows a Microsoft Excel window titled "Microsoft Excel - Eye [Read-Only]". The ribbon includes File, Edit, View, Insert, Format, Tools, Data, Window, and Help. The formula bar shows the formula $=SUM(C11:F11)$ in cell G11. The spreadsheet contains the following data:

END OF YEAR EXAMINATION						
No.	Name of Student	Maths	English	Science	ICT	Total
1	Dana Shamsudeen	78	84	67	75	304
2	Sulemana Nurideen	65	76	84	80	305
3	Iddrisu Ayisha	78	90	87	77	332
4	Zakaria Nurat	63	76	74	65	278
5	Alhassan Ibrahim	79	82	91	70	322
6	Alhassan Fatima	50	55	65	60	230
7	Abubakari Huzeiru	68	71	66	72	277
8	Fuseini Rahama	59	75	63	68	265
Total		540	609	597	567	2313

An example of a workbook with data and series

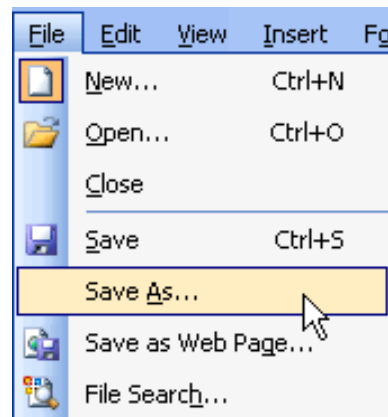
Chapter 49 - Saving Workbook

Every workbook created in Excel must be saved and assigned a name to distinguish it from other workbooks. The first time you save a workbook, Excel will prompt you to assign a name through the **Save As** operation. Once assigned a name, any additional changes made to the text, numbers, functions or formulas must be saved using the **Save** operation.

Save As

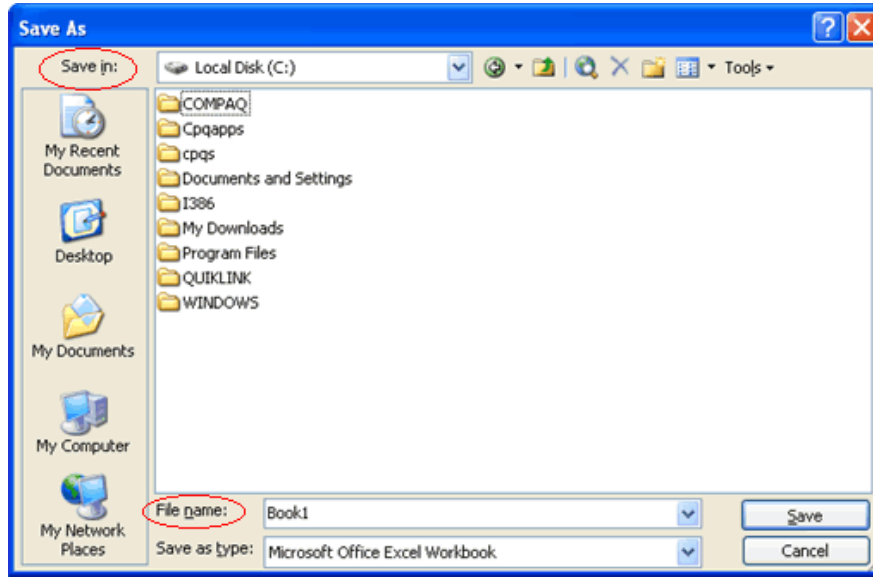
To save a new workbook:

- Choose **File** from the **menu bar**.
- Click on **Save As** from the cascading menu.




Choose the **Save As** command when saving an Excel file for the first time.

- Click the **Save In:** drop-down menu and locate where the file will be saved. Choose **Local Disk (C:)** or **Desktop** to save the file to your computer.
- Type a name for your file in the **File Name:** box.
- Click the **Save** button at bottom right corner or press the **Enter** key.



To save changes made to an existing workbook:

- Choose **File** from the menu bar.
- **Click on Save** from the cascading menu or Click the  Save button on the Standard toolbar.

✓ If you're saving the file for the first time and you do not choose a file name, Microsoft Excel will assign a file name for you.

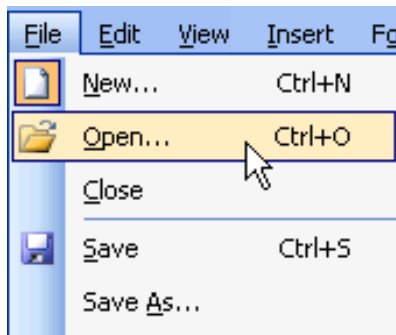
✓ It's a good idea to save frequently when working in a spreadsheet. Losing information is never fun! You can quickly save your spreadsheet by using the quick-key combination Ctrl + S.

Chapter 50 - Opening and Closing Workbook

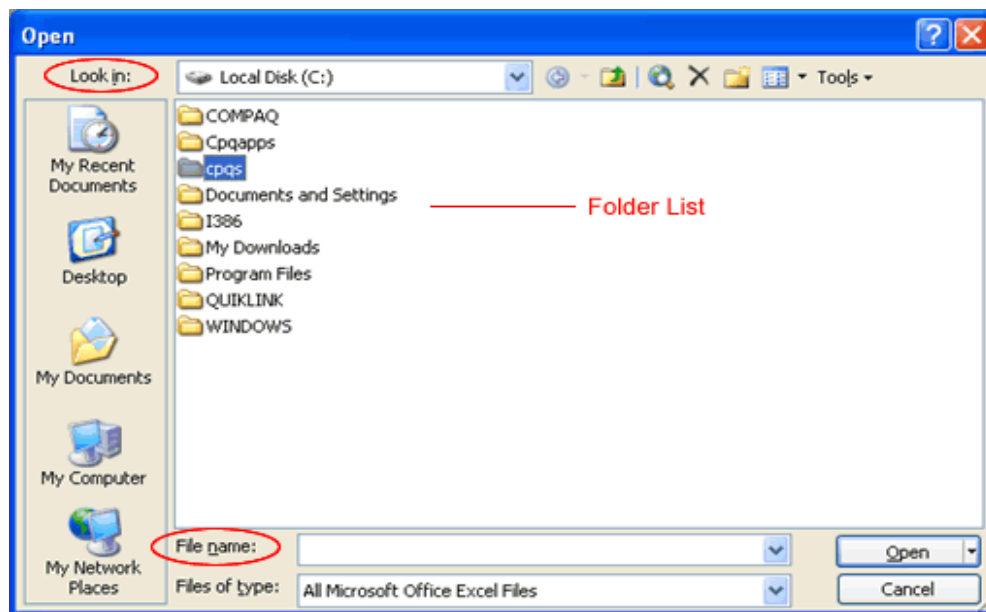
You can open any workbook that has previously been saved and given a name.

Opening Existing Excel Workbook

- Launch Excel
- Choose **File** from the **menu bar**
- Click on **Open** from the cascading menu.



- The **Open dialog box** opens.



- In the **Look in** list, click the desktop, drive or folder that contains the file you want to open.
- In the **folder list**, open the folder that contains the file.
- Once the folder is opened, select the file you want to open (or just double click on the file).
- Click the **Open** button at the bottom right corner.

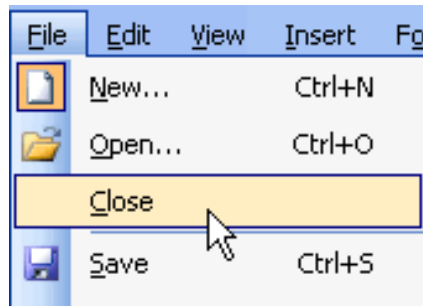
Opening Workbook from Desktop, Local Disk or Folder

1. Locate the file (on the desktop, local disk or folder).
2. Double click on the file to open it.

Closing Workbook

To close an existing Excel workbook:

1. Choose **File** from the **menu bar**.
2. Click on **Close** from the cascading menu.



OR

- Click on the **Close** button on the **Title Bar**.

NB: Excel will prompt you to save information if anything new has been typed between the last save and the time you close the file.

Chapter 51 - Editing Spreadsheet

Information in a spreadsheet is likely to change over time or may require editing. **Editing** is the process of correcting mistakes and making changes to the content of a document. Editing involves selecting a cell, range or worksheet; direct cell editing; deleting; redo and undo; move (cut, copy and paste).

Selecting multiple cells

The currently selected cell in Excel is called the **active cell**. You can also select a group of adjacent cells or a **cell range**. Many operations can be performed against a cell range, including moving, copying, deleting and formatting.

To select all cells in a column:

- Click the gray **Column** heading to select the entire column. (Click and drag the cursor across other column headings to select those columns.)

	A	B	C	D
1	First Name	Last Name	Address	Phone
2	John	Jones	123 Street	555-5555
3	Jane	Smith	345 Street	555-1234
4	Joe	Smith	456 Street	555-5678
5				
6				
7				

Click on the gray column heading to select the entire column.

To select all cells in a row:

- Click the gray **Row** heading to select the entire row. (Click and drag the cursor down through the row headings select those rows.)

	A	B	C	D	E	F
1	First Name	Last Name	Address	Phone		
2	John	Jones	123 Street	555-5555		
3	Jane	Smith	345 Street	555-1234		
4	Joe	Smith	456 Street	555-5678		
5						

Click on the gray row heading to select the entire row.

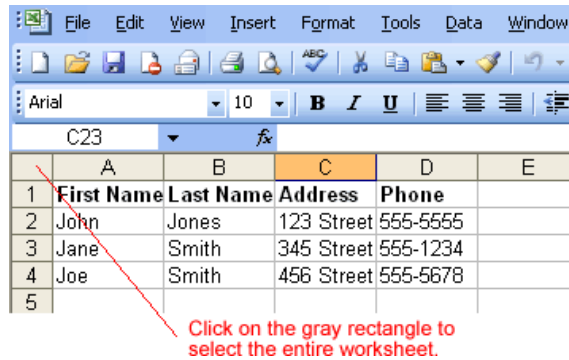
To select a range of cells:

- Move to the **first cell** in the range.
- The mouse pointer becomes a **large cross**.
- Click and hold the left mouse button and **drag** left or right, up or down to the last cell you want to select.
- Release the mouse button.
- The cells you selected are shaded.

	A	B	C	D	E
1	First Name	Last Name	Address	Phone	
2	John	Jones	123 Street	555-5555	
3	Jane	Smith	345 Street	555-1234	
4	Joe	Smith	456 Street	555-5678	
5					
6					

To select the entire worksheet:

- Click the **gray rectangle** in the upper-left corner to select entire worksheet.



Select columns and rows that are not directly next to one another

1. Select one of the ranges you want to select.
2. Hold down the **Control** key while selecting other ranges.

	A	B	C	D
1	First Name	Last Name	Address	Phone
2	John	Jones	123 Street	555-5555
3	Jane	Smith	345 Street	555-1234
4	Joe	Smith	456 Street	555-5678
5				
6				
7				

Direct Cell Editing

Information can be changed in the following ways:


- Direct cell editing
- Formula bar editing

Method 1: Direct cell editing


This method will allow you to edit the entire cell or portion of it directly at the cell.

Direct editing of entire text in a cell

1. **Click** the cell that contains the information to be changed.

2. Type the new entry. The old entry is **replaced** by the new entry.
3. Press **Enter** key or click the **Enter button** on the Formula bar  to complete the entry.


Direct editing of portion of text in a cell

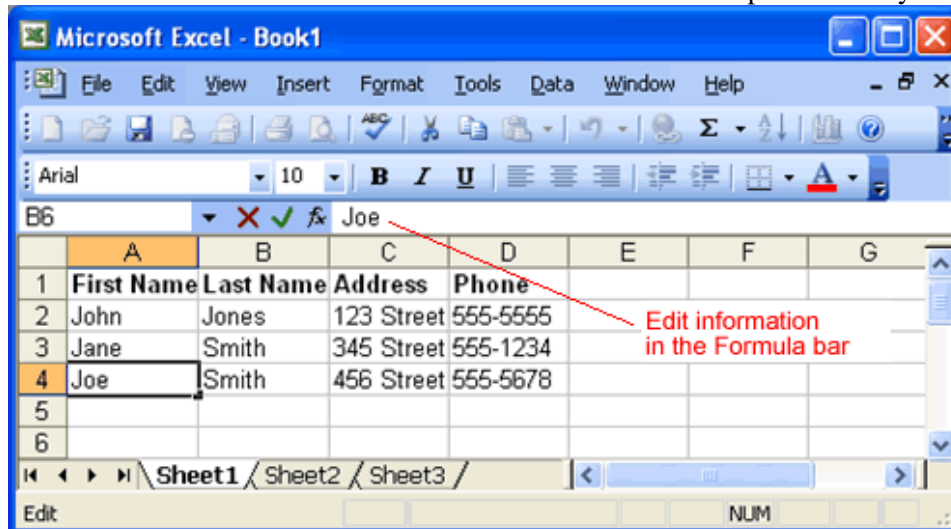
1. **Double Click** the cell that contains the information to be changed. [The cell is opened for **direct editing**.]
2. Move the **mouse pointer** or **insertion point** to the text you want edit in the cell.
3. Erase the text to be edited
4. Type the new entry.
5. Press **Enter** key or click the **Enter button** on the Formula bar  to complete the entry.

	A	B	C	D	
1	First Name	Last Name	Address	Phone	
2	John	Jones	123 Street	555-5555	
3	Jane	Smith	345 Street	555-1234	
4	Joe	Smith	456 Street	555-5678	

Double-click on the cell and edit information directly in the cell

Method 2: Formula bar editing

1. Click the cell that contains the information to be changed.
2. Move the **mouse pointer** or **insertion point** to the **Formula bar**
3. Edit the entry in the **Formula bar**.
4. Press **Enter** or click the **Enter button** on the Formula bar  to complete the entry.



If the original entry is long and requires only a minor adjustment (in spelling, for example), then you can directly edit the information in the cell.

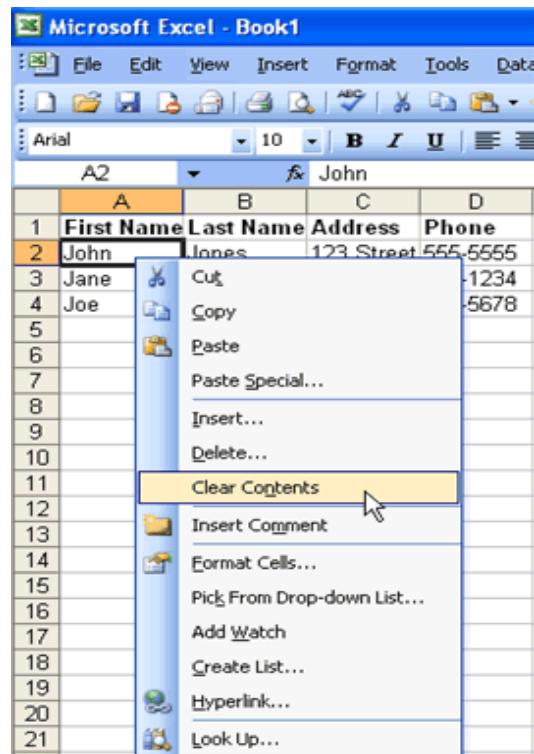
Deleting Information in Cells

To delete data that already appears in a cell:

1. Click the cell that contains the information to be deleted.
2. Press the **Delete** key,

Deleting information in a cell range or worksheet

1. Select the **cell range**.
2. Right-click on the selected cell range
3. And choose **Clear Contents** from the shortcut menu.




To delete data being typed but not yet added to the cell:

- Cancel an entry by pressing the **Escape** key.

Undo and Redo

Undo

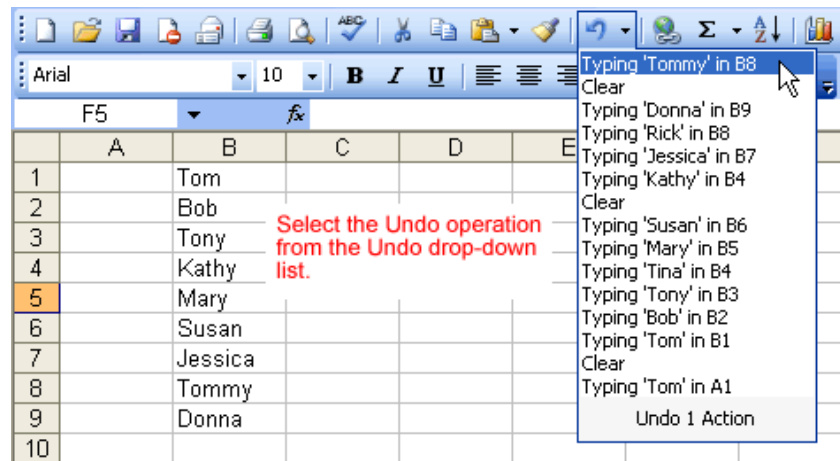
Sometimes you might do something to a spreadsheet that you didn't mean to do, like type the wrong number in a cell. Excel allows you to undo an operation. Use the **Undo button**  on the Standard toolbar to recover an error. The last single action is recoverable.

To undo recent actions (typing, formatting, etc.) one at a time:

- Click the **Undo button** .


To undo several recent actions at once:

- Click the arrow next to the **Undo** button.
- Select the desired **Undo** operation(s) from the list.



- Microsoft Excel reverses the selected action and all actions that appear in the list above it.

Redo

An **Undo** operation can be cancelled by applying a **Redo** . This is useful when an Undo operation was mistakenly applied. Remember, a Redo is possible only if you have not changed an Excel spreadsheet since the last Undo operation was completed:

To Redo an Undo operation:

- Press the **Redo** button .

To Redo several recent Undo actions at once:

1. Click the arrow next to **Redo** button.
2. Select the desired Redo operation from the list.
3. Microsoft Excel reverses the **Undo** operation.

Moving information

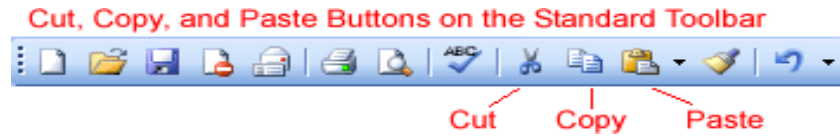
Cut, Copy and Paste

Cut, Copy and **Paste** are useful operations in Excel. You can quickly copy or cut information in cells (text, numbers or formulas) and paste them into other cells. These operations save you from having to type and retype the same information.

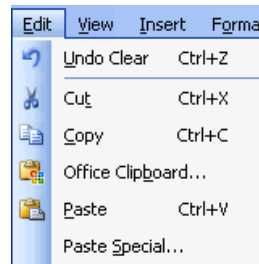
- ✓ The **Copy** feature allows you to copy selected information from the spreadsheet and temporarily place it on the Clipboard in your computer's memory for pasting elsewhere.
- ✓ The **Cut** feature allows you to remove information from cells in the spreadsheet and temporarily place it on the Clipboard in your computer's memory for pasting elsewhere.

- ✓ The **Paste** feature allows you to select any of the collected items on the Clipboard and paste them into a cell of the same or a different spreadsheet.

The **Cut**, **Copy** and **Paste** buttons are located on the Standard toolbar.




The **Cut**, **Copy** and **Paste** operations also appear as choices in the **Edit** menu:

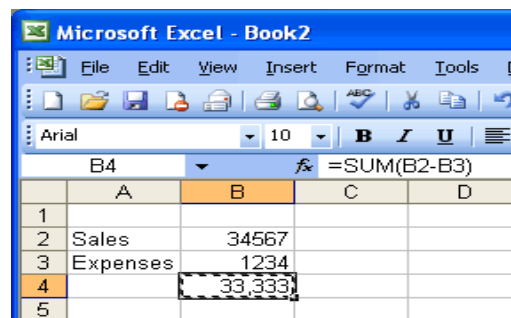


The **Cut**, **Copy** and **Paste** operations can also be performed through shortcut keys:

Cut	Ctrl + X
Copy	Ctrl + C
Paste	Ctrl + V

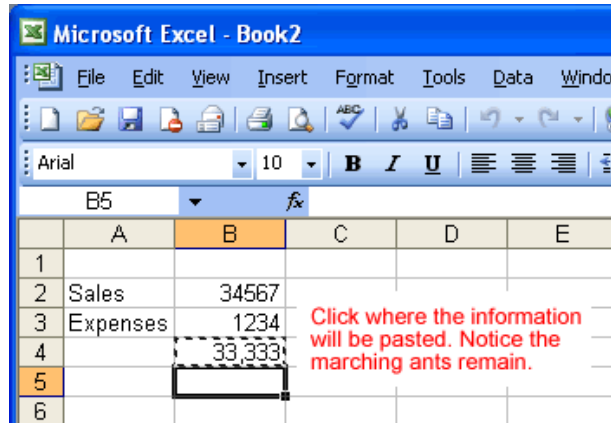
To Copy and Paste:

- Select a cell or range to be duplicated.
- Click the  **Copy button** on the **Standard toolbar**.
- The border of the copied cell(s) takes on the appearance of marching ants.



Marching ants appear during the copy process


- Click the cell where you want to place the duplicated information. The cell will be highlighted. (If you are copying contents into **more than one cell**, click the **first cell** where you want to place the duplicated information).

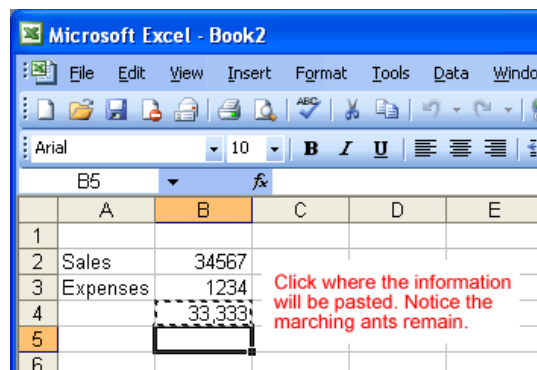


- Press the **Enter** key. Your information is copied to the new location.

NB: Be careful if you paste copied cell information into cells that already contain data. If you do, the existing data is overwritten.

To Cut and Paste:

- Select a cell or range to be cut.
- Click the **Cut**  button on the **Standard toolbar**.
- The border of the cut cell(s) take on the appearance of marching ants.
- Click the cell where you want to place the duplicated information. The cell will be highlighted. (If you want to paste the contents into **more than one cell**, click the **first cell** where you want to place the duplicated information).



- Press the **Enter** key. Your information is pasted to the new location. The original is deleted.

NB: You do not have to paste information that has been cut. You can use Cut to delete information from a cell.

Drag and Drop

Another way to move information from one cell to another is to use the drag-and-drop method. You use the cursor to point to the information to be moved and then drag the cell to its new location.

To use drag and drop:

- Highlight and select the cell(s) you want to **move** to a new location.
- Position the mouse pointer near one of the **outside edges** of the selected cell(s). The mouse pointer changes from a large, white cross into a slender, black cross with arrows at all ends.

	A	B	C
1			
2	Savings	245	
3			
4			
5			

Large, white cross

	A	B	C
1			
2	Savings	245	
3			
4			
5			

Slender, black cross with arrows at all ends

- Keep the mouse pointer on the **outer edge** of the selected cell, click and hold the left mouse button and **drag** the cell(s) to a new location.

	A	B	C	D	E
1					
2	Savings	245			
3					
4					
5					
6					
7					

C5:D5

- Release the mouse button to move the information to its new location.

Chapter 52 - Formatting Spreadsheet

Formatting is the process of changing the appearance of text in a document. Formatting is done with the use of tools that are found on the **Format Toolbar** or **Format Menu**. Examples of these tools are; font type, font size font style (bold/italic/underline), etc.

Formatting Techniques in Spreadsheet

1. Changing font style (bold, italic and underline).
2. Changing font (typeface, size and colour).
3. Changing alignment (left, center and right).
4. Indenting (increase and decrease).
5. Adding styles (comma, currency and percentage).
6. Changing decimals (increase and decrease)
7. Inserting charts and borders.
8. Adding fill colour.
9. Merging cells.
10. Adjusting cells (rows and columns).

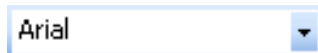
Changing Font Type

The number of typefaces or type available for use varies depending on the software installed on your computer.

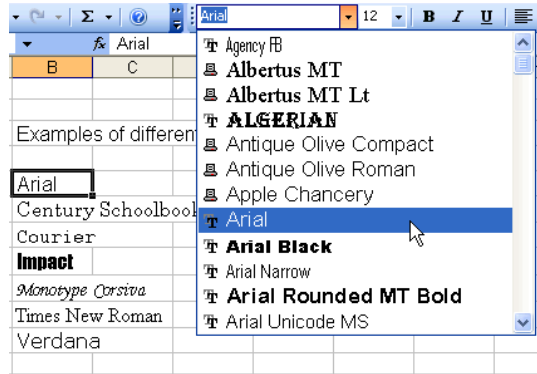
	A	B	C	D	E
1					
2					
3		Examples of different typefaces:			
4					
5		Arial			
6		Century Schoolbook			
7		Courier			
8		Impact			
9		<i>Monotype Corsiva</i>			
10		Times New Roman			
11		Verdana			
12					

To apply a typeface to information in a cell:

- Select a cell or range of cells.
- Click the down arrow to the right of the **font name** list box on the **Formatting toolbar**.



- A drop-down list of available fonts appears.



- Click on the **typeface** or type of your choice.
- The selection list closes and the new font is applied to the selected cells.

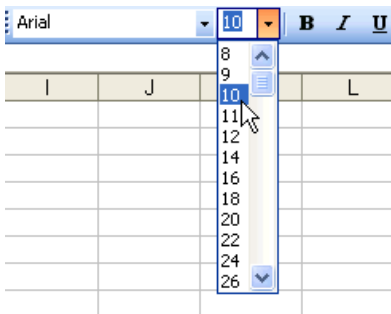
Changing Font Size

The font size list varies from typeface to typeface. The Arial font sizes, for example, are 8, 9, 10, 11, 12, 14, 16, 18, 20, 22, 24, 26, 28, 36, 48, and 72.

	A	B	C	D	E
1					
2					
3		Examples of different sizes:			
4					
5		Arial, 8			
6		Arial, 10			
7		Arial, 12			
8		Arial, 14			
9		Arial, 16			
10		Arial, 18			
11		Arial, 20			
12					

To apply a font size to information in a cell:


- Select a cell or range of cells.
- Click the down arrow to the right of the **font size** list box  on the Formatting toolbar.
- A drop-down list of available font sizes appears.

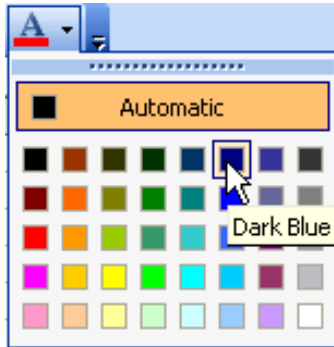


- Click the **font size** of your choice.
- The selection list closes, and the new font size is applied to the selected cells.

Changing Font Colour

To apply colour to information in cells:

- Select a cell or range of cells.
- Click the down arrow to the right of the **font colour** list box .
- A drop-down list of available colours appear.




- Click the **colour** of your choice.
- The selection list closes, and the new font colour is applied to the selected cells.


Underline, Italics and Bold

In addition to the typeface, size, and colour, you can also apply **bold**, *italics*, and/or underline font style attributes to any text or numbers in cells.

To select a font style:

- Select a cell or range of cells.
 - Click any of the following options  on the Formatting toolbar.
 - **Bold** button: (Ctrl + B).
 - *Italics* button: (Ctrl + I).
 - Underline button: (Ctrl + U).
 - The attribute(s) selected (**bold**, *italics*, or underline) are applied to the font.
- ✓ The **bold**, *italics*, and underline buttons on the **Formatting** toolbar are like toggle switches. Click once to turn it on and click again to turn it off.

Changing alignment (left, center and right).

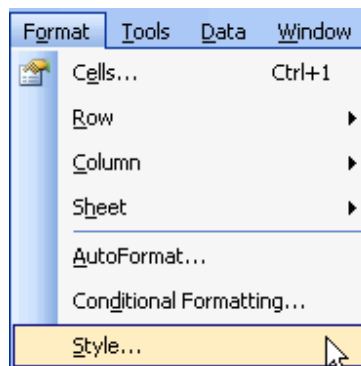
1. Select a cell or range of cells.
2. Click on the alignment  of your choice.
3. The selected alignment is applied to the selected cells or text.

Design and Styles

Styles can save a lot of time when formatting a spreadsheet. A **style** is a unique collection of font attributes (number, alignment, font, border, patterns, and protection). Many different styles can be created in a spreadsheet, each with different attributes and names. When applied to a cell, information in it resembles the attributes defined for that style.


To apply a style:

- Select the cell or range of cells.
- Choose **Format** from the **menu bar**.
- Click on **Style** from the cascading menu.



- Select a style from the **Style name** drop-down list.
 - ✓ You can change the style attributes (number, alignment, font, border, patterns, and protection) for any style name.
 - ✓ You can create new styles by clicking the **Add** button in the Style dialog box.


Changing Number styles attributes (currency, percentage and comma).

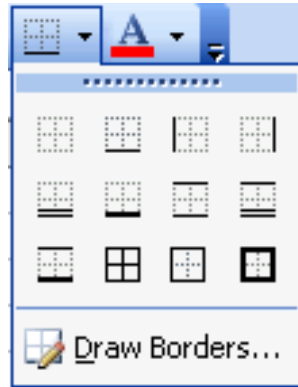
1. Select a cell or range of cells.
2. Click on the **style**  of your choice.
3. The selected style is applied to the selected cells or text.

Adding Border to Cell or Cell Range

Borders can be applied to cells in your worksheet to emphasize important data or to assign names to columns or rows.

To add a border to a cell or cell range:

- Select a cell or range of cells.
- Click the down arrow next to the **Borders** button .
- The Border drop-down appears.



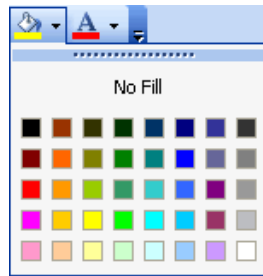
- Choose a **borderline** style from the **Border** drop-down menu.
- The selected cells display the chosen border.

Adding Colour to Cells

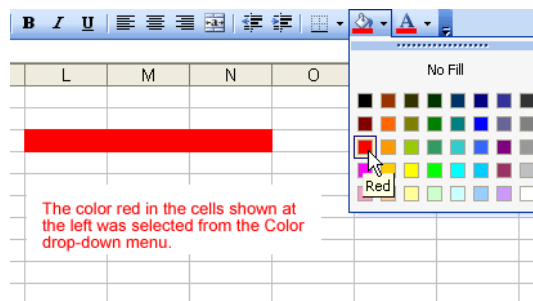
Colours can be applied to cells in your worksheet to emphasize important data or to assign names to columns or rows.

To add colour to a cell:

- Select a cell or range of cells.
- Click the down arrow next to the **Fill Colour** button . A **Fill Colour** drop-down menu displays.




- Choose a **fill colour** from the **Fill Colour** drop-down menu.

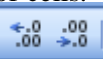


- The selected cells display the colour.


Indenting (increase and decrease).

1. Select a cell or range of cells.
2. Click on the **indent**  of your choice.
3. The selected indent is applied to the selected cells or text.

Changing decimals (increase and decrease)

1. Select a cell or range of cells.
2. Click on the **decimal**  of your choice.
3. The selected decimal is applied to the selected cells or text.

Merging cells.

1. Select a range of cells.
2. Click on the **Merge button** .
3. If selected range contains text, a dialog box with warning will pop up.
4. Click **Ok** to merge or **Cancel** not to merge.

Chapter 53 - Printing and Print Previewing Spreadsheet

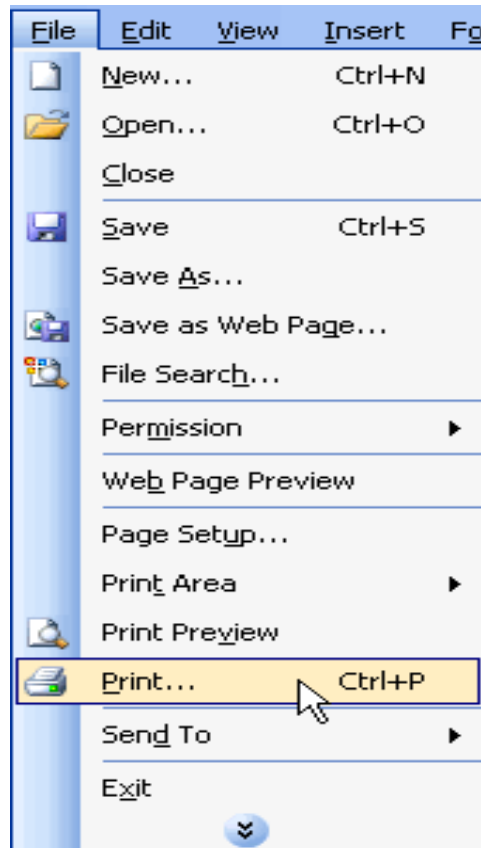
Printing a worksheet or workbook

Printing in Excel is much like printing in other Office applications such as Microsoft Word. As previously mentioned, Excel defaults to printing the entire worksheet.

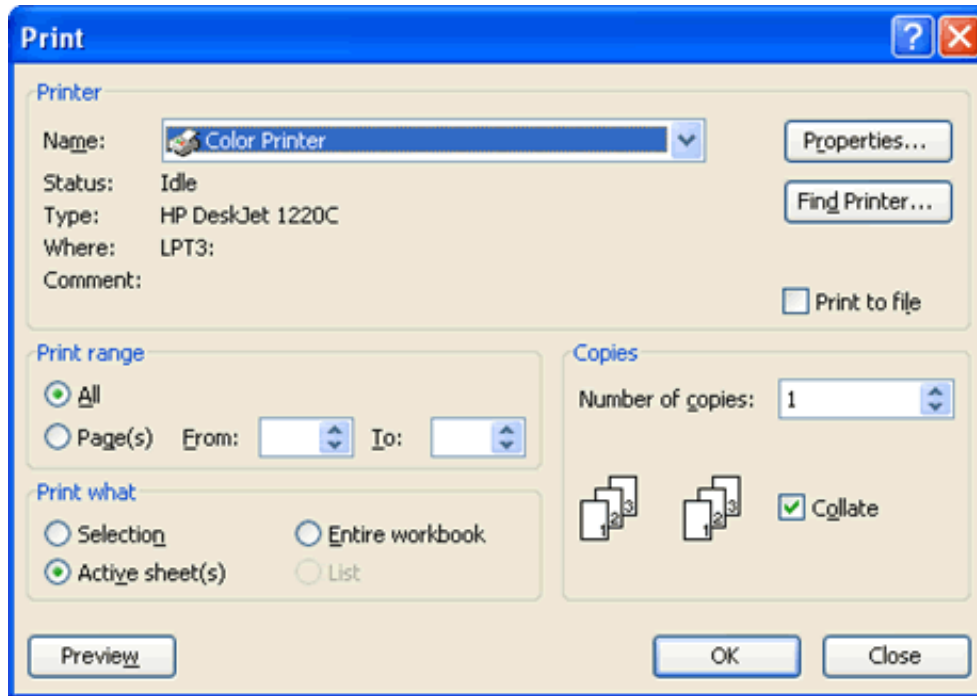
Printing is the process of a computer transferring data to a computer printer and generating a hard copy of the electronic data being printed.

To print a worksheet:

1. Choose **File** from the **menu bar**.
2. Click **Print** from the cascading menu.



3. The **Print** dialog box opens.



4. Specify the printer **name** where the spreadsheet will print. If you only have one printer in your home or office, Excel will default to that printer.

5. In **Print Range**, choose whether to print **All** or a certain range of pages (**Pages From n to y**, where n and y are the beginning and ending page numbers).

6. In **Print what**, choose whether to print a **Selection**, the **Active sheet**, or the **Entire Workbook** (all worksheets in the workbook). Excel defaults to the active sheet.

7. Choose the **Number of copies** to print by clicking the up or down arrows.

8. Click **OK** to print the worksheet.

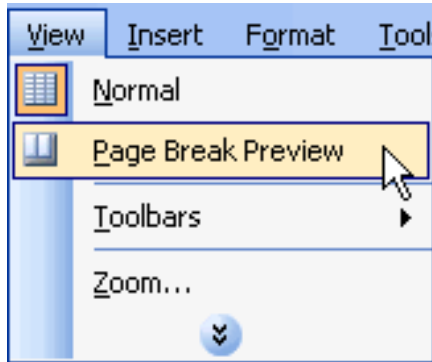
NB: Don't print your Excel spreadsheet without checking spelling first! Excel includes two tools to help correct spelling errors: **AutoCorrect** and **Spelling**.

Specify Print Area

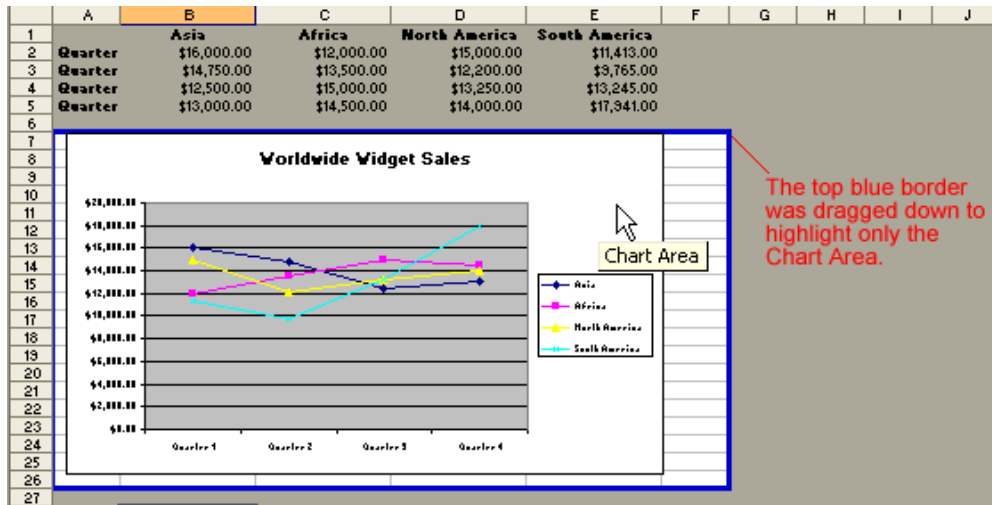
In Excel, you can print an entire workbook, a worksheet, a cell range, or a cell. Excel defaults to printing the entire worksheet. But if you want to print only a certain area of a spreadsheet, you can define a **print area**.

To specify a print area:

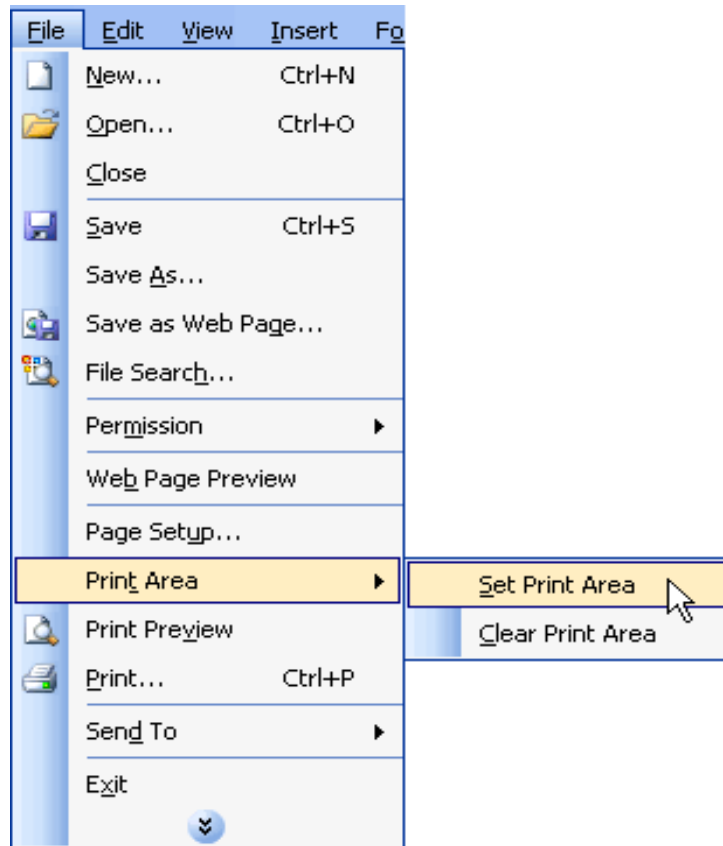
1. Choose **View** from the **menu bar**.
2. Click on **Page Break Preview** from the cascading menu.



3. A reduced image of the chart is displayed on the screen.
4. Click one of four blue-coloured borders, drag to highlight, then select the area to print.



5. Choose **File** from the **menu bar**
6. Click on **Print Area**, then **Set Print Area** from the cascading menu.



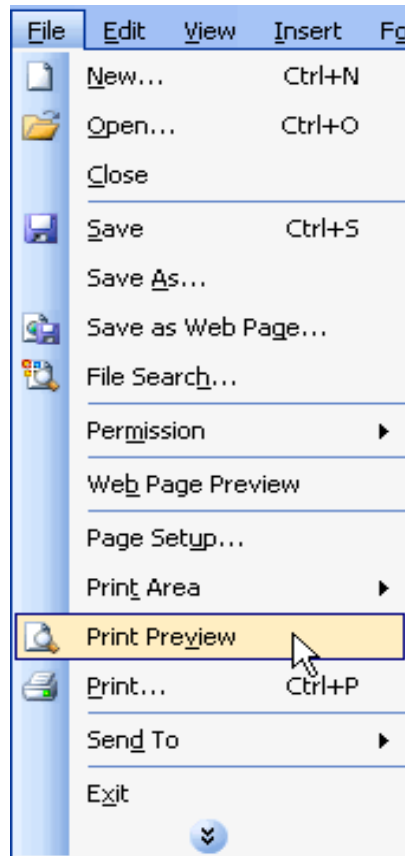
NB: Only the area you defined in the print range will print when the worksheet is submitted to the printer for printing.

Print Previewing Worksheet

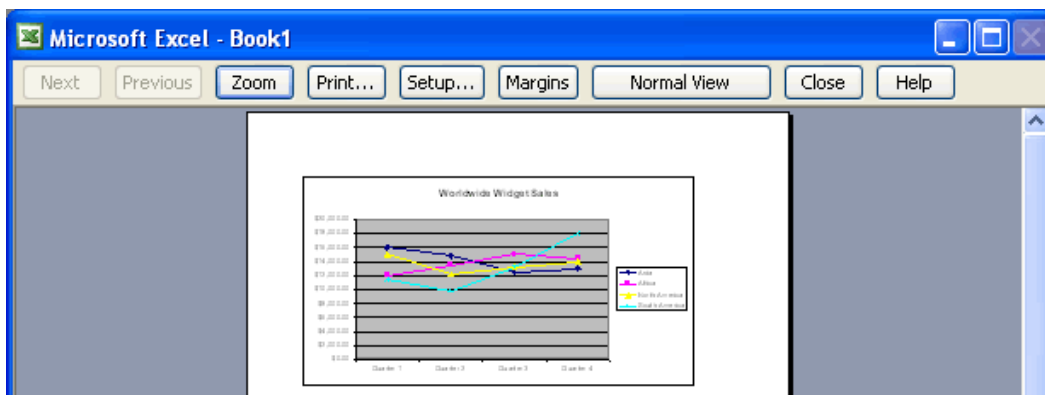
Excel provides a **Print Preview** capability that shows a smaller picture of the printed page directly on the computer screen. Print Preview is a good way for you to review formatting and make sure that columns, rows, and margins appear exactly where you want them to be.

To Print Preview:

1. Choose **File** from the **menu bar**
2. Click on **Print Preview** on the cascading menu **OR** Click the **Print Preview** button on the Standard toolbar.



3. In the **Print Preview** window, the document is sized so the entire page is visible on the screen. Simply check the spreadsheet for overall formatting and layout.



NB: The Zoom button in Print Preview will enlarge the data so it can be read.

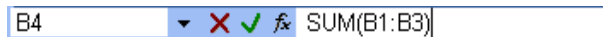
Chapter 54 – Formulae, Functions and AutoSum

Formulae

In school, you learned formulas to calculate math problems. Microsoft Excel uses these same **formulae** to perform calculations in a spreadsheet. A **formula** is mathematical equation used to perform calculation in an Excel worksheet or workbook. It is a combination of values (numbers or cell references) and math operators (+, -, /, *, =) into an algebraic expression. In excel, formula is used to create a relationship between two or more cells. Excel requires every formula to begin with an equal to sign (=) or minus (-).

Operation	Purpose
+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Percent
^	Caret
<	Less than
>	Greater than
=	Equal to
<>	Not equal to
<=	Less than or equal to
=>	Greater than or equal to

NB: A formula is fully visible in the Formula bar.



Creating Addition Formula

A simple formula in Excel contains one mathematical operation only: one number plus a second number equals a third number. Writing a simple formula is no more difficult than that: 1+1. The only difference in Excel is that all formulas **must** begin with the **equals sign (=)**. It is not enough to type **1+1** in Excel because what will appear in the cell is "1+1." You must begin the equation with an equals sign, or =1+1. This holds true for any formula—simple or complicated—that adds, subtracts, multiplies or divides.

To create a simple formula that adds two numbers:

1. Click the cell where the formula will be defined.
2. Type the equals sign (=) to let Excel know that a formula is being defined.
3. Type the first number to be added (128, for example).
4. Type the **addition sign (+)** to let Excel know that an add operation is to be performed.
5. Type the second number to be added (345, for example).
6. Press **Enter** or click the **Enter button** on the Formula bar to complete the formula.

	A	B	C	D
1				
2		473		
3				
4				

The formula, =128+345, produces an answer of 473.

NB: Excel **will not always tell you** if your formula contains an error, so it's up to you to check all of your formulas.

What if a column contains many numbers, each of which regularly changes? You don't want to write a new formula each time a number is changed. Luckily, Excel lets you include cell references in formulas.

To create a simple formula that adds the contents of two cells:

1. Type the numbers you want to calculate in separate cells (for example, type 128 in cell B2 and 345 in cell B3).
2. Click the cell where the answer will appear (B4, for example).
3. Type the equals sign (=) to let Excel know that a formula is being defined.
4. Type the cell number that contains the first number to be added (B2, for example).
5. Type the **addition sign (+)** to let Excel know that an add operation is to be performed.
6. Type the cell number that contains the first number to be added (B3, for example).
7. Press **Enter** or click the **Enter button** on the Formula bar to complete the formula.

Type the formula, =B2+B3, in cell B4 and press Enter to see the result.

Creating Subtraction Formula

Formulas can be created by using either numbers or cell references in the definition. You can also use the mouse to select the cells to be used in the formula instead of typing the cell number or cell reference. Using this method, we are going to write a simple formula that subtracts one cell from another: =B3-B2.

To create a simple formula using the point-and-click method:

1. Type the numbers you want to calculate in separate cells (for example, type 128 in cell B2 and 345 in cell B3).
2. Click the cell where the answer will appear (B4, for example).
3. Type the equals sign (=) to let Excel know that a formula is being defined.
4. Click on the **first cell** to be included in the formula (B3, for example).
5. Type the **subtraction sign (-)** to let Excel know that a subtraction operation is to be performed.
6. Click on the **next cell** in the formula (B2, for example).

- If you include multiple cells in the formula, repeat steps 4 and 5 until the entire formula is entered.
- Press **Enter** or click the **Enter button** on the Formula bar to complete the formula.

	A	B	C	D	E
1					
2		128			
3		345			
4		=B3-B2			
5					
6					

Creating Multiplication Formulas

Creating multiplication formulas is similar to addition and subtraction formulas. To **multiply** two cells, the formula—B2 and B3—you would need to insert a multiplication operator * between them: **=B2*B3**.

To create a simple formula that multiplies the contents of two cells:

- Type the numbers you want to calculate in separate cells (for example, type 128 in cell B2 and 345 in cell B3).
- Click the cell where the answer will appear (B4, for example).
- Type the equals sign (=) to let Excel know a formula is being defined.
- Click the **first cell** to be included in the formula (B2, for example).
- Type a **mathematical operator** (the multiplication symbol, or *). The operator displays in the cell and Formula bar.
- Click the **next cell** in the formula (B3, for example).
- If you include multiple cells in the formula, repeat steps 4 and 5 until the entire formula is entered.
- Press **Enter** or click the **Enter button** on the Formula bar to complete the formula.

	A	B	C	D	E
1					
2		128			
3		345			
4		=B2*B3			
5					
6					

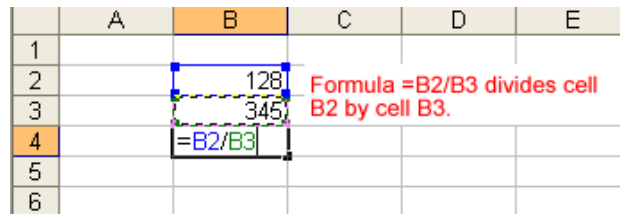
Creating Division Formulas

Creating division formulas is similar to the addition, subtraction, and multiplication formulas. To **divide** the contents of cell B2 by cell B3, you would need to insert a division operator, or /, between them: **=B2/B3**.

To create a simple formula that divides one cell by another:

- Type the numbers you want to calculate in separate cells (for example, type 128 in cell B2 and 345 in cell B3).

2. Click the cell where the answer will appear (B4, for example).
3. Type the equals sign (=) to let Excel know a formula is being defined.
4. Click the **first cell** to be included in the formula (B2, for example).
5. Type a **mathematical operator** (the division symbol, or /). The operator displays in the cell and Formula bar.
6. Click the **next cell** in the formula (B3, for example).
7. If you include multiple cells in the formula, repeat steps 4 and 5 until the entire formula is entered.
8. Press **Enter** or click the **Enter button** on the Formula bar. This step ends the formula.



	A	B	C	D	E
1					
2		128			
3		345			
4		=B2/B3			
5					
6					

Function

A **function** is a **predefined formula** that helps perform common mathematical functions. Functions save you the time of writing lengthy formulas. You could use an Excel function called **Average**, for example, to quickly find the average of range of numbers. Or you could use the **Sum** function to find the sum of a cell range. Excel contains many different functions.

Each function has a specific order, called **syntax**, which must be strictly followed for the function to work correctly.

Syntax order:

- All functions begin with the = sign.
- After the = sign, define the **function name** (e.g., Sum).
- Add one or more **arguments**—numbers, text, or cell references—enclosed by parentheses. If there is more than one argument, separate each by a comma.

An example of a function with one argument that adds a range of cells, B3 through B10:

=SUM(B3:B10)

equal sign function name argument

An example of a function with **more than one argument** that calculates the average of numbers in a range of cells, B3 through B10 and C3 through C10:

=AVG(B3:B10, C3:C10)

equal sign function name argument

Excel literally has hundreds of different **functions** to assist with your calculations. Building formulas can be difficult and time consuming. Excel's functions can save you a lot of time and headaches.

Excel's different functions


There are many different functions in Excel. Some of the more common functions include:

Statistical functions

- **SUM:** Summation adds a range of cells together. It calculates the sum of an argument.
- **AVERAGE:** Average calculates the average of a range of cells or the argument.
- **COUNT:** This counts the number of chosen data or values in a range of cells or argument.
- **MAX:** This identifies the largest number or value in a range of cells or argument.
- **MIN:** This identifies the smallest number or value in a range of cells or argument.

Date and time functions

- **DATE:** This converts a serial number to a day of the month.
- **Day of Week**
- **DAYS360:** This calculates the number of days between two dates based on a 360-day year.
- **TIME:** This returns the serial number of a particular time.
- **HOURL:** This converts a serial number to an hour.
- **MINUTE:** This converts a serial number to a minute.
- **TODAY:** This returns the serial number of today's date.
- **MONTH:** This converts a serial number to a month.
- **YEAR:** This converts a serial number to a year.

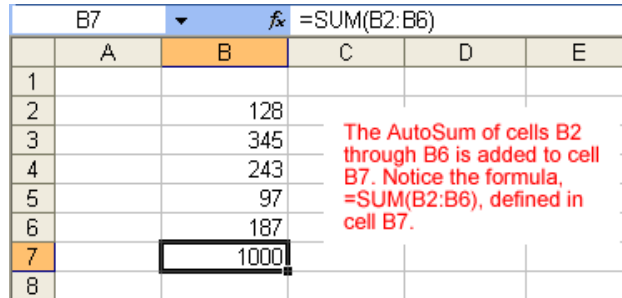
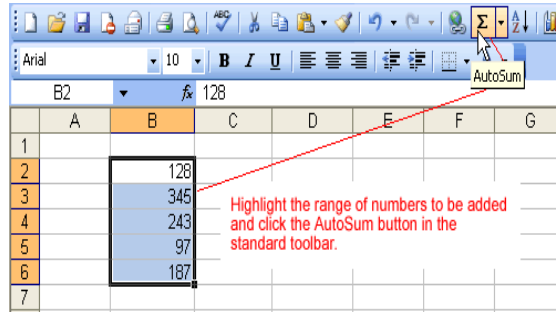
 **NB:** You don't have to memorize these functions, but you should have an idea of what each can do for you.

AutoSum

AutoSum is a function that the computer user can use to automatically add the figures within a certain range of cells and view the result in a cell designated to display the result. It is simply a tool that adds up figures in a spreadsheet.

To calculate the AutoSum of a range of data:

1. Type the numbers to be included in the formula in separate cells of column B (type 128 in cell B2, 345 in cell B3, 243 in cell B4, 97 in cell B5, and 187 cell B6).
2. Click the **first cell** (B2) to be included in the formula.
3. Using the point-click-drag method, drag the mouse to define a cell range from cell B2 through cell B6.
4. On the **Standard** toolbar, click the **Sum** button.
5. The sum of the numbers is added to cell B7, or the cell immediately beneath the defined range of numbers.




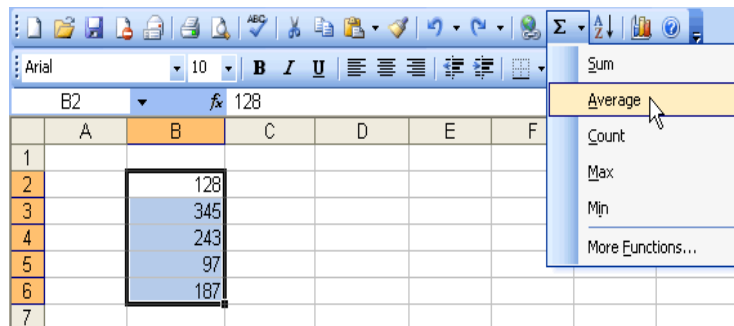
☛ Notice the formula, **=SUM(B2:B6)**, has been defined to cell B7.

Finding the average of a range of numbers

The **Average** function calculates the average of a range of numbers. The Average function can be selected from the **AutoSum** drop-down menu.

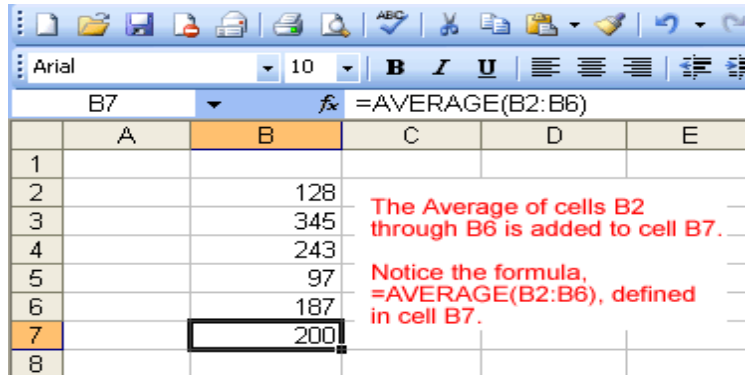
To calculate the average of a range of data:

1. Type the numbers to be included in the formula in separate cells of column B (type 128 in cell B2, 345 in cell B3, 243 in cell B4, 97 in cell B5, and 187 in cell B6).
2. Click the **first cell** (B2) to be included in the formula.
3. Using the point-click-drag method, **drag** the mouse to define a cell range from cell B2 through cell B6.
4. On the **Standard** toolbar, click on the drop-down part of the **AutoSum**  button.
5. Select the **Average function** from the drop-down Functions list.



6. The average of the numbers is added to cell B7, or the cell immediately beneath the defined range of numbers.

7. Notice the formula, =AVERAGE(B2:B6), has been defined to cell B7.



Exercise:

Study worksheet below carefully and use it to answer (1-6):

	A	B	C	D	E	F	G	H
1	END OF YEAR EXAMINATION							
2	No.	Name of Student	Maths	English	Science	ICT	Total	
3	1	Dana Shamsudeen	78	84	67	75	304	
4	2	Sulemana Nurideen	65	76	84	80	305	
5	3	Iddrisu Ayisha	78	90	87	77	332	
6	4	Zakaria Nurat	63	76	74	65	278	
7	5	Alhassan Ibrahim	79	82	91	70	322	
8	6	Alhassan Fatima	50	55	65	60	230	
9	7	Abubakari Huzeiru	68	71	66	72	277	
10	8	Fuseini Rahama	59	75	63	68	265	
11		Total	540	609	597	567	2313	
12								

1. Outline the steps by which the serial no. (1, 2, 3, ... 8) were generated without typing them one by one.

.....

.....

2. What is the cell address for the following:

I. "Maths"

II. "Alhassan Ibrahim"

3. Write down the cell range in which "End of Year Examination" was typed.

.....

4. Write the spreadsheet formula that was used in computing the total value “230” in cell G6.

.....

5. Write the spreadsheet function used in computing the total value “609” in cell D11.

.....

6. How many cells are in the cell range C4:E9?

Summary

- Formulas are mathematical equations used to perform calculations in an Excel worksheet or workbook. They are expressions which calculates the value of a cell.
- Functions are predefined formulas that perform calculations in an Excel worksheet or workbook. They are predefined formulas and are already available in excel.
- Both need to be written in a specific way, which is called the syntax, in order to calculate properly.
- Both also need at least one argument, which on the most basic level identifies the values for which to perform the action.
- For formulas, the basic syntax is equal (=), function name (AVERAGE, in the example below), and argument. E.g. =AVERAGE(A1:A20)
- For functions, the basic syntax is equal (=), function name (ROUND, in the example below), argument, and argument tooltip, which is an additional action to perform (2, in the example below represents 2 digits). E.g. =ROUND(A1,2)
- A syntax refers to the layout and order of the function and its argument
- Value are numbers which can later be used in formulas
- Label / Text are all words describing the values (numbers)

Chapter 55 - Toolbars

What is Toolbar?

A **toolbar** is a bar containing buttons and options that you use to carry out or access commands more quickly than by opening the menus and the respective dialog boxes.

Toolbars are normally located below the menu bar in Microsoft Word and other Microsoft Office programs. They contain icons or **buttons**, representing the **most commonly used commands**. Microsoft created such toolbars because often it's easier to click a button than it is to open a menu and search for a command.

The **Standard and Formatting toolbars** are the two most commonly used toolbars in Office programs. When you open Word, Excel or PowerPoint, the Standard and Formatting toolbars are turned on by default.

NB:

- A **toolbar** is simply a bar with buttons and options that you use to carry out commands
- Certain toolbar buttons (and their corresponding commands) are unique to specific Office programs, but there are others such as New, Open, Save, and Print that are common to Word, Excel, and PowerPoint.
- If you forget what an icon on a toolbar means, hover your mouse pointer over the button. A label will appear telling you what the button does. This label is called a **tooltip**.
- It doesn't matter which way you choose to execute common commands. It's just a matter of preference.

Displaying and Hiding Toolbars

As you just learned, the Standard and Formatting toolbars are turned on by default in **Word** and **Excel**. However, all of these programs (including Power Point and Outlook) include other helpful toolbars that can be **displayed or hidden** as you need them.

To display a toolbar:

1. Choose **View** from the **menu bar**.
2. Point to **Toolbars** from the **cascading view menu**.
3. The **cascading toolbar menu** appears.
4. **Check marks** appear next to currently displayed toolbars.
5. Click the toolbar without a **check** you want to display.

To hide a toolbar:

1. Choose **View** from the **menu bar**.
2. Point to **Toolbars** from the **cascading view menu**. [The **cascading toolbar menu** appears.]
3. **Check marks** appear next to currently displayed toolbars.
4. Click the toolbar with a check to hide it.



Toolbars

The Task Pane

The task pane is a dockable dialog window that give users a convenient way to use commands, access more information and modify their documents. It's located on the right side of your screen and is present when you first start an Office 2003 program.

Use the task pane to create new files, open files, search for files, cut and paste text and graphics, and apply styles to your Office files from a single location.

To display the task pane:

1. Choose **View** from the menu bar.
2. Point to **Toolbars**. [The **cascading toolbar menu** appears.]
3. Choose **Task Pane**.
4. The task pane displays on the right side of the window.

To hide the task pane:

1. Choose **View** from the **menu bar**.
2. Point to **Toolbars** from the **cascading view menu**. [The **cascading toolbar menu** appears.]
3. Choose **Task Pane**.
4. The task pane is hidden.

OR

- Click the **small X** in the upper right corner of the task pane.

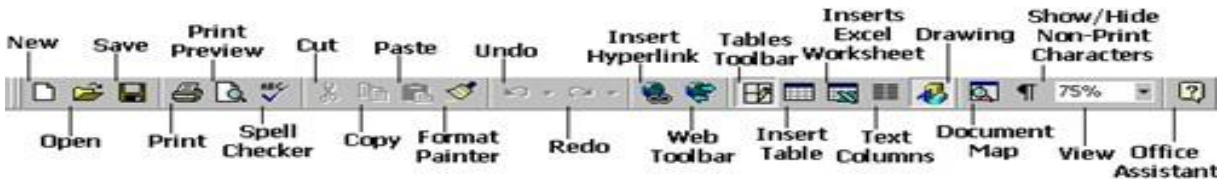
NB: A **ToolTip** (yellow tag) appears when you move the mouse over any of the **Icons** on the toolbar. The ToolTip explains what function that particular Icon performs.

Standard Toolbar

Standard toolbar is toolbar that contains the most commonly used tools in a software. It usually sits below the menu bar. In word, it features buttons for creating, opening, saving and printing of documents, as well as, other tools such as for cutting, copying and pasting.



Standard Toolbar



Labeled Standard Toolbar

Below is a list of the tools offered on the Standard Toolbar and their functions:

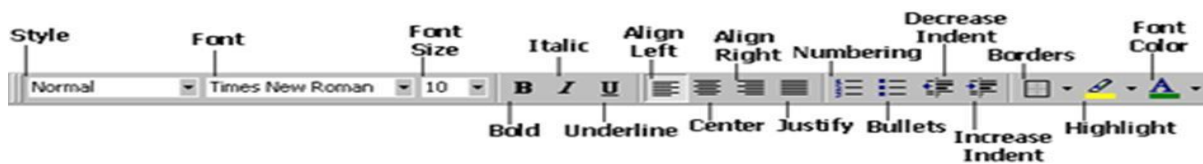
- **New:** Creates a new, blank document.
- **Open:** Opens a document previously created and saved in Word.
- **Save:** Saves the active document to a specified location.
- **Print:** Prints active document.
- **Print Preview:** Displays what the document will look like when you print it.
- **Spell Checker:** Checks active document for spelling and grammatical errors.
- **Cut:** Cuts the selected text and places it on the clipboard.
- **Copy:** Copies the selected text and places it on the clipboard.
- **Paste:** Pastes the contents of the clipboard to a new location.
- **Format:** Painter Copies the formatting of the selected text to a new text selection.
- **Undo:** Undoes the last document change.
- **Redo:** Redoes the last action that was undone.
- **Insert Hyperlink:** Creates a hyperlink from the selected text. That is, inserts a website in a document.
- **Web Toolbar:** Shows web toolbar.
- **Tables Toolbar:** Shows tables' toolbar.
- **Insert Table:** Inserts a table.
- **Insert Excel:** Worksheet Inserts an Excel Worksheet into a document.
- **Text Columns:** Changes the number of text columns per page.
- **Drawing:** Shows drawing toolbar.
- **Document Map:** Changes the view of the document.
- **Show/Hide:** Shows and hides non-print characters.
- **View/Zoom:** Magnifies or reduces the document contents by the specified zoom percentage.
- **Office Assistant:** Help function

Formatting Toolbar

The Formatting toolbar is a feature in **MS-Word** that offers users shortcut buttons to help format a document quickly. It consists of tools used to select and change the appearance of text in a document.



Format Toolbar



Labeled Formatting Toolbar

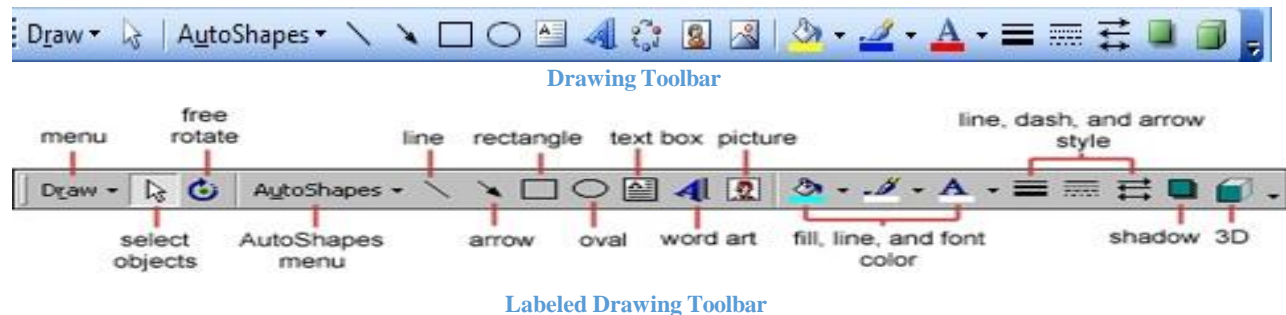
Below is a list of Formatting toolbar buttons and a brief description of each.

- **Font Style:** Changes the style of the selected text.
- **Font Type:** Changes the typeface of font for the selected text.
- **Font Size:** Changes the point size of the selected text.
- **Bold:** Makes the selected text dark (bold) to help emphasize the text.
- **Italic:** Makes the selected text slanted forward (italic) to help emphasize the text.
- **Underline:** Underlines the selected text to help emphasize the text.
- **Align Left:** Aligns the selected text/paragraph(s) to the left margin. It creates a straight line of text on the left-hand side of the page.
- **Center:** Centers the selected text/paragraph(s). It puts text in the middle of a page horizontally.
- **Align Right:** Aligns the selected text/paragraph(s) right. It creates a straight line of text on the right-hand side of the page.
- **Justify:** Justifies the selected text/paragraph(s). It creates a straight line of text on both the left and right-hand sides of the page.
- **Numbers:** Creates a numbered list or numbers the selected paragraph(s).
- **Bullets:** Creates a bulleted list or adds bullets the selected paragraph(s).
- **Decrease:** Indent Decreases the space (indentation) between the left and right margin of selected paragraph(s).
- **Increase:** Indent Increases the space (indentation) between the left and right margin of selected paragraph(s).
- **Borders:** Creates a border around the selected text/paragraph(s)
- **Highlight:** Allows you to select (highlight) specified text.
- **Font Color:** Allows you to change the color of the text.

Drawing Toolbar

The Drawing toolbar is a feature in **MS-Word** that allows users to draw and colour shapes, add text effects and create text boxes within a document. It's located at the bottom of the window, between the Horizontal Scroll bar and the Status bar.

The Drawing Toolbar also offers tools for inserting organizational charts, ready-made pictures, pre-drawn shapes, clip art or draw their own shapes.



Below is a list of Drawing toolbar buttons and a brief description of each.

- **Draw:** Offers a number of options for defining the relative positions, arrangements, rotation, etc., of drawings in a document.
- **Select Objects:** Changes the pointer to a selection arrow so you can click to select objects in the active window.
- **AutoShapes:** Offers a group of ready-made shapes that include basic shapes, such as rectangles and circles, including a variety of lines and connectors, block arrows, flowchart symbols, stars and banners, and callouts.
- **Line:** Allows you to draw a straight line when you click and drag in the active window.
- **Arrow:** Draws or inserts a line with an arrow head when you click and drag in the active window.
- **Rectangle:** Draws a rectangle when you click and drag on the active window. You can also draw a square using this tool by holding SHIFT while you drag.
- **Oval:** Draws an oval where you click and drag in the active document. To draw a (perfect) circle, hold down SHIFT while you drag.
- **Text Box:** It is used to draw a text box with horizontal direction when you click and drag in the active document.
- **Insert WordArt:** It is used to create decorative text by inserting a Microsoft Office drawing objects.
- **Insert Diagram:** It is used to create an organizational chart, a circle, radial, pyramid or Venn diagram in your document.
- **Clip Art:** Opens the Clip Gallery where you can select the clip art image you want to insert in your document or update your clip art collection.
- **Insert Picture:** It is used to add or inserts an existing picture in your active document at the insertion point.
- **Fill Color:** It is used to add, modify or remove the fill color or effects from the selected object.
- **Line Color:** It is used to change the Colour of a line. It Adds, modifies or removes the line color from the selected object.
- **Font Color:** It is used to change the colour of text. It allows you to add, modify or remove the text color of the selected text.
- **Line Style:** It is used to select a thickness for the selected line.

- **Dash Style:** It allows you to control the appearance of the selected line.
- **Arrow Style:** It allows you to select the style of arrowhead.
- **Shadow Style:** It allows you to select the shadow appearance of the selected drawing object.
- **3-D Style:** It allows you to add depth to drawing objects such as lines, AutoShapes, and freeform objects.








Scrollbars

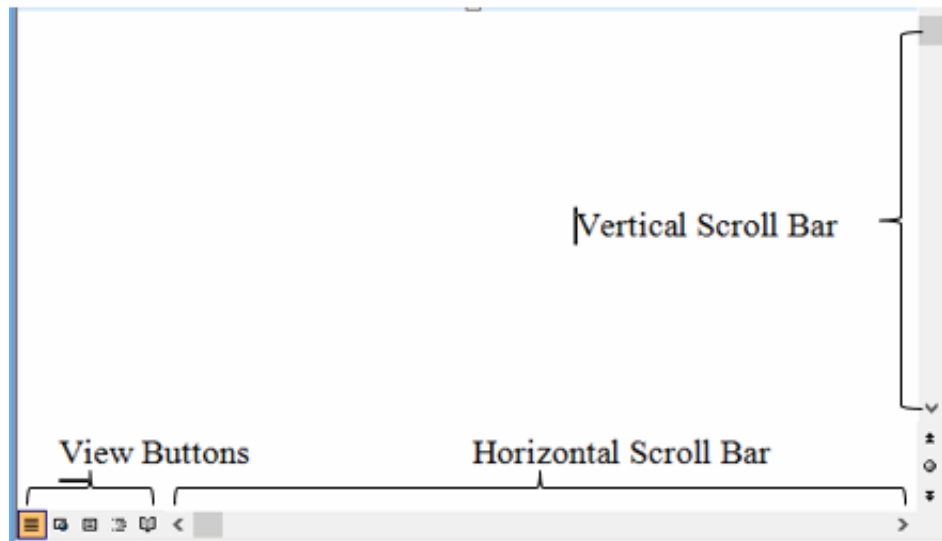
The scrollbar is a bar that consists of tools that are used to view hidden information in documents and websites. It normally appears at the right side or the bottom of a window when all information in that window cannot be seen at the same time.

The scrollbar at the **right side** is called the **Vertical Scrollbar** while the one at the **bottom** of the window is called the **Horizontal Scrollbar**. The vertical scrollbar is used to scroll **Up** and **Down** to view hidden information while the horizontal scrollbar is used to scroll **Right** and **Left** to view hidden information.

The scrollbars also feature **scroll arrows** that allow you to move easily through a document. It's especially convenient when viewing a long document.

To scroll:

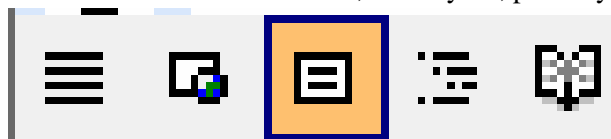
- Click the **scroll up-arrow button**  to scroll up.
 - Click the **scroll down arrow button**  to scroll down.
 - Click the **Previous Page** (up double arrow) button  to scroll up one page at a time.
 - Click the **Next Page** (down double arrow) button  to scroll down one page at a time.
 - Click the scroll to **browse button**  to open a browse menu.
 - Click the **scroll right arrow button**  to scroll right.
 - Click the **scroll left arrow button**  to scroll left.
- OR**
- ✓ **Click and drag** the scrollbars to view your document.



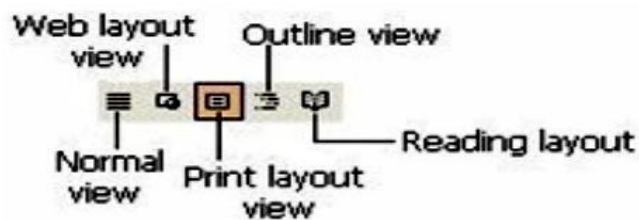
Word window with labeled scroll bar

View Toolbar

View toolbar is a toolbar that offers buttons used to view documents in various ways. This toolbar allows you to change the layout view of the document to normal, web layout, print layout and outline view.



View Toolbar



Labeled View Toolbar

Below is a list of View toolbar buttons and a brief description of each.

Normal View is best used for typing, editing, formatting and proofreading. It provides a maximum amount of space without rulers or page numbers cluttering your view. In short:

- It has only horizontal ruler.
- It does not display margins.
- It does not display header & footer.
- It displays dotted page break.

Web Layout View shows what your text will look like on a webpage.

- It is like as Web Page.
- It has only horizontal ruler.
- It has only one page.

Print Layout View shows what your document will look like when it is printed. Under Print Layout view, you can see all elements of the page. Print Preview shows you this as well.

- It is default layout view of MS-Word.
- It displays both rulers.
- It displays margins.
- It displays header and footer.
- It is the best view.


Outline View is used to create and edit outlines. Outline view only shows the headings in a document. This view is particularly handy when making notes.

- It displays text in outline format.
- It displays headings or any level.
- It displays outline hierarchy.

Full Screen View displays ONLY the document you are working on. All other pieces of the Word window are removed except for one button that allows you to close the view screen.

- It displays text or document in the whole screen.
- It hides temporarily Menu bar, Toolbars.

Reading Layout View: If you are opening a document primarily to read it, reading layout view optimizes the reading experience. Reading layout view hides all toolbars except for the Reading Layout and Reviewing toolbars.

 **NB:** Reading Layout View = **Alt + R**, To close Reading Layout view = **Esc** or **Alt + C**.

Differences between Menu Bar and Toolbar

- Menu bar contains **words** while toolbar contains **images and icons**.
- Functionally, clicking on menu bar simply opens up the options under it while clicking on toolbar icon immediately executes the command.
- Toolbars are shortcuts of tools in the menu bar.

Chapter 56 - Search Companion

When you have trouble finding a file or folder on your computer, search for it using Microsoft XP's Search Companion.

Opening Search Companion:

1. Click on Start menu and
2. choose Search.



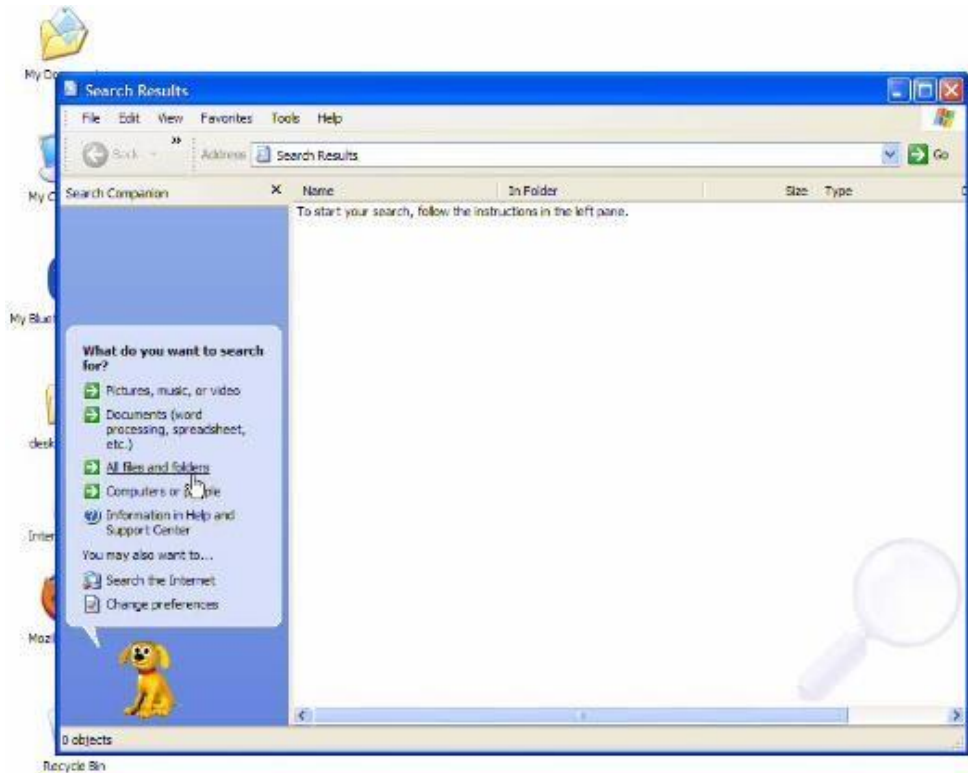
OR

1. Launch My Documents and
2. Click the Search button.

OR

1. Launch My Computer and
2. Click the Search button.

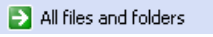
The Search Companion opens in the left pane and presents the following list of options:



Search Companion Options

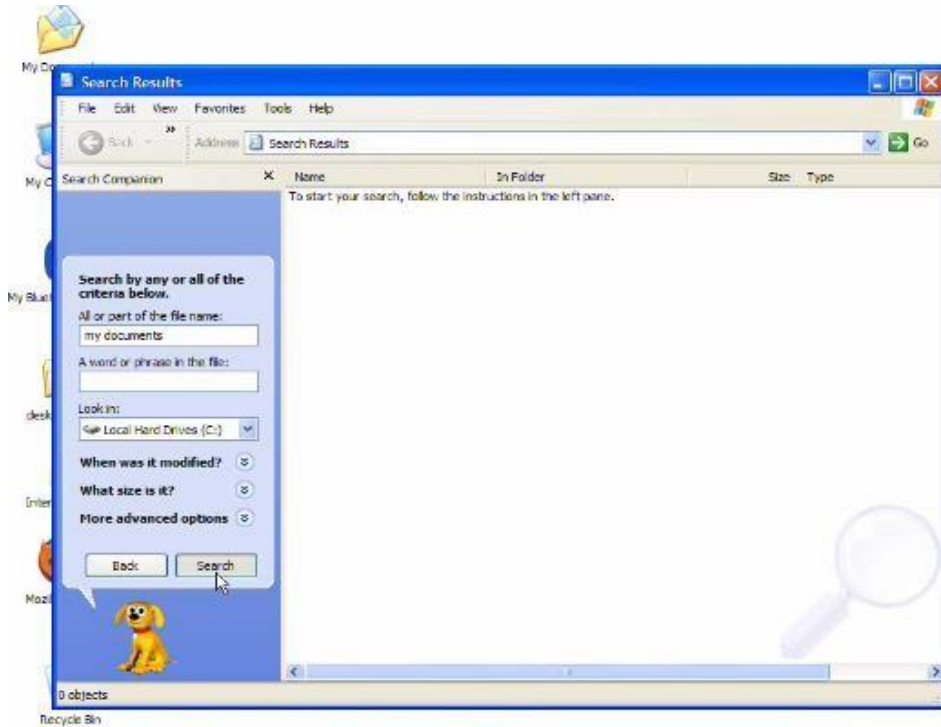
- Pictures, music, or video
- Documents (word processing, spreadsheet, etc.)
- All files and folders
- Computer or people

Depending on which option you choose, you're presented with various ways to conduct your search.

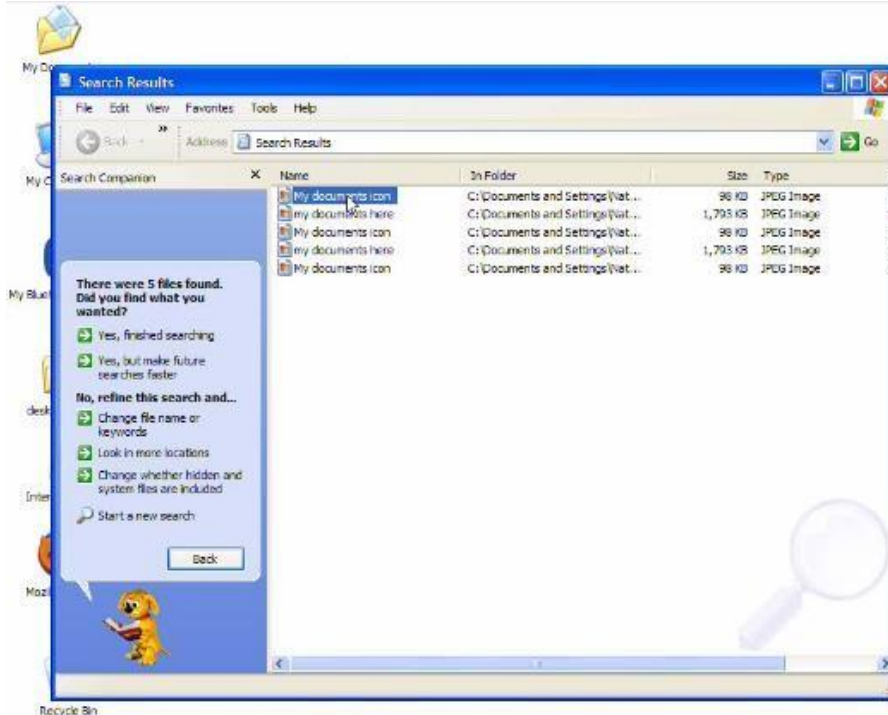
Let's say you choose to search All Files and Folders  link for a particular file. The Search Companion prompts you with questions to help you refine your search. It's helpful if you can remember something about the missing file, such as all or part of the file name, file type, when you last worked with the file, a word or phrase in the file, or what drive it's on. The more criteria contained in your search, the more refined the search becomes.

To search using the Search Companion:

1. Enter as much information as you can remember into the Search Companion. E.g. My Documents
2. Click the drop-down arrows to add more criteria.
3. Use the Back button if necessary.
4. Click Search.



5. Once you click Search, the Search Companion tells you what it's searching. Your search results display in the white space.



6. The Search Companion tells you when the search is complete and prompts you with more Search options.

7. If your search is complete, click Yes, finished searching.

8. Simply double-click the file to open it.



NB: Finding a file can take seconds, minutes, or much longer depending on the type of search and where you look. If you don't find the file or folder you're looking for on the first try, type in a different name and/or location.

Review files listed in search results

To quickly review files listed in your search results, hover your mouse pointer over the file name. A yellow pop-up window displays, telling you its location, the file type, and size. Double-click the file to open it.

Previewing image files

You can preview image documents (including fax documents) using the Windows Picture and Fax Viewer without opening an image-editing program. This is especially useful when browsing through a list of non-descriptive file names. For example, let's say you have a file named 09786.jpeg. You may wonder what the file looks like.

To preview an image file:

1. Right-click the file, then choose Preview from the pop-up menu.
2. The Windows Picture and Fax Viewer opens, displaying the image file.
3. Use the control buttons at the bottom of the window to perform basic tasks without opening an image-editing program.
4. Use the arrow buttons to view images as a slideshow.

Chapter 57 - Integrating ICT into Learning

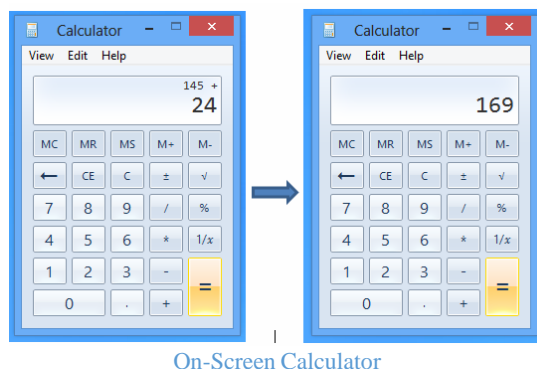
The benefits of information and communication technology can be seen all around us. ICT has changed the way people do things. People use ICT in many ways to benefit themselves as well as other people.

ICT has been used in many ways to encourage teaching and learning. Students can benefit from the provisions made by ICT to improve and enhance learning. Teachers can also benefit from ICT. Let us look at how ICT has been integrated into some learning areas such as mathematics, English and other subjects.

Integrating ICT in Mathematics

Mathematics involves a lot of calculations. These calculations are made so easy and simple by the use of **ICT** tools such as calculators and computers. The calculator is used by most students and teachers for calculations. This has eliminated a lot of petty mistakes from many calculations.

The computer contains **on-screen calculator** and **spreadsheet** applications, that can also be used for calculation.



As you learnt earlier in this book, you can perform mathematical calculations using a spreadsheet application. This is usually faster and easier.

In short:

- Performs calculation
- Helps students learn shapes
- Helps students plot graphs

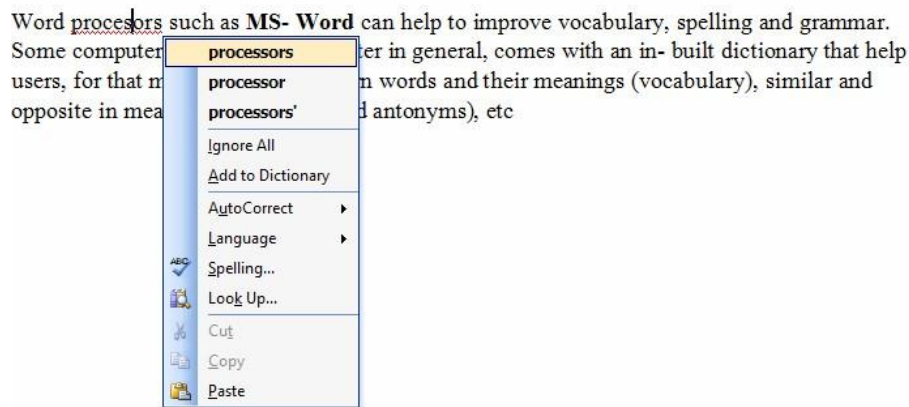
Integrating ICT in English Language

In the of field English language, the computer and other **ICT** tools such as mobile phones, contain applications such as word processors, **Encarta** and learning games such as **scrabble** that do help in learning English language.

Word processors such as **MS- Word**, can help to improve vocabulary, spelling and grammar. Some computer programs or computer in general, comes with an in- built dictionary that help users, for that matter students to learn words and their meanings (vocabulary), similar and opposite in meanings (synonyms and antonyms), etc.

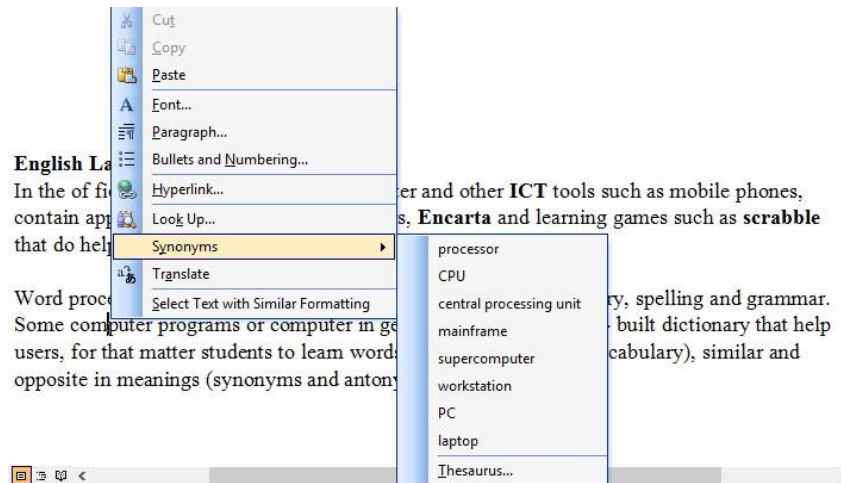
For example, a wrongly spelt word is underlined with red line (e.g. processors) as shown below. To correct it:

- Right click on the word.
- Choose from a list of suggestions for replacement.



Also, to look for words that is synonymous to **computer** as shown below:

- Right click on the word (e.g. computer).
- Point to synonyms in the pop-up menu.



In short:

- It helps students to pronounce correctly
- It helps student read stories books
- It helps students learn how to write essays

Integrating ICT in Science

Science is normally the subject that captures the imagination of students and engages them in further developing an understanding of how the world works. To prepare students to enter the field of science they must be used to engaging in and coping with technological advances in technology.

The following are examples of integrating ICT into the study of Science: Encarta, Science Explorer, Broadwork Interactive Science Units, Worldwide Telescope, NASA, Orbiter (Space Flight Simulation), etc.

Other Subjects

Social Studies

- It supports students to read maps
- Its allows users to research
- Broadening expectations

Catering

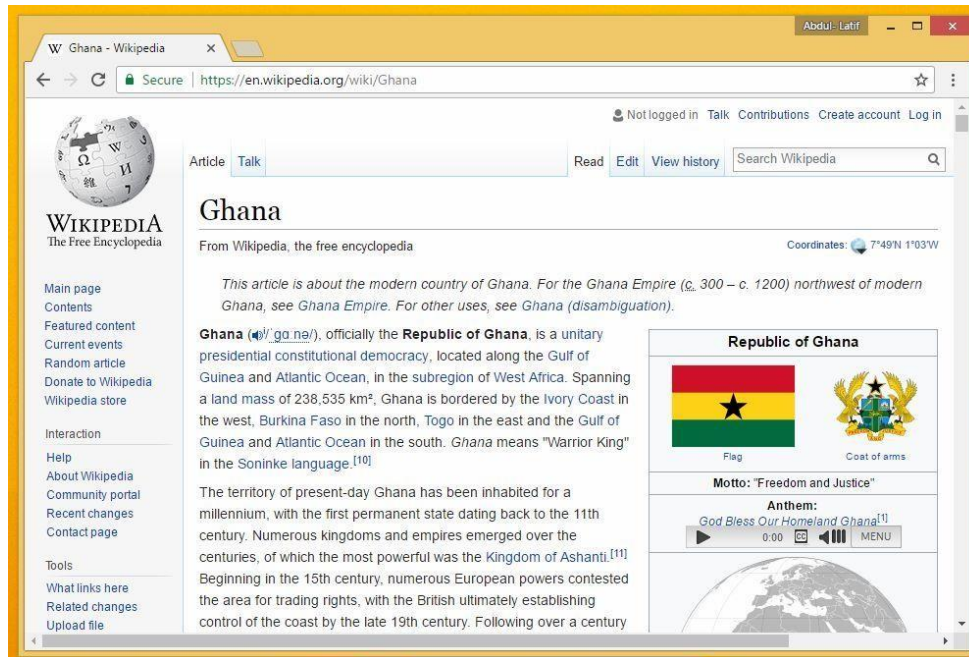
- It helps student learn recipe
- It helps students learn practical online
- It broadens the minds of vocational students

Accessing Learning Materials

In accessing learning materials in the internet, students and teachers use ICT tools (such as computer and mobile phone), applications (such as Encarta, Wikipedia, etc.) and search engines to search for information in wide range of subjects.

To Search for Information on Ghana using Wikipedia:

1. Type 'www.wikipedia.com' in the **address bar**.
2. Press **Enter** key to display Wikipedia **home page**.
3. Click '**English**' to use the Wikipedia in the English Language.
4. Type the word or phrase that you want to search e.g. Ghana
5. Press the **Enter** key



Benefits of Using ICT in Teaching and Learning

There are many benefits of using ICT in teaching and learning. Some of the benefits include:

- **Makes teaching and learning easy:** Students gain access to many examples and practical information as well as memory techniques when they make use of ICT tools. The calculator for example makes calculations easy.
- **Makes teaching and learning interesting:** ICT tools do not require that students need to be in the classroom always to learn. Students can be in the comfort of their homes and learn. ICT tools also make colourful images available. Students can play computer games whilst learning. e.g. Playing scrabble helps improve vocabulary.
- **Makes students learn at their own pace:** With ICT tools, students can continue learning at any time of the day. Students can take their time and learn new concepts. They can choose to learn more about a particular topic by surfing the web or Encarta.
- **Helps deprived students learn through long-distance education programs:** Students in deprived communities where there are not enough materials to teach certain subjects can still benefit from watching the long-distance education program on television.
- **Encourages team work and self-development:** Television programs like the brilliant science and maths quiz and the radio program what do you know encourage students to work as a team to win competitions and learn hard to develop their intellect. This all helps to make teaching and learning better.
- It speeds up teaching and learning.
- Students learn under less supervision.
- It gives access to online libraries for leaning and research.

E-learning

Also known as electronic learning, E-learning refers to the acquisition of knowledge and skill using electronic technologies such as computer, the internet, intranet and extranet.

E-learning is basically the computer and network enabled transfer of skills and knowledge. E-learning comprises the use electronic applications and processes to learn. E-learning applications and processes include Web-based learning, computer-based learning, virtual classrooms and digital collaboration. Content is delivered through the Internet, intranet/extranet, audio or video tape, satellite TV, and CD-ROM. It can be self-paced or instructor led and includes media in the form of text, image, animation, streaming video and audio.

Acronyms like CBT (*Computer-Based Training*), IBT (*Internet-Based Training*) or WBT (*Web-Based Training*) have been used as synonyms to e-learning.



Primary School children on their computers

Chapter 58 - Search Engines

What is Search Engine?

With billions of websites online today, there is a lot of information on the Internet. Search engines make this information easier to find.

Search Engines are specialized websites that can help you find what you're looking for in the internet.

The purpose of a search engine is to extract requested information from the huge database of resources available on the internet. Search engines become an important day to day tool for finding the required information without knowing where exactly it is stored. Internet usage has been tremendously increased in recent days with the easy to use search engines.

Popular Search Engines

The most popular search engines are:

- **Google.com:** Google is the most popular search engine because it's the most effective at finding what you're looking for. On
- **Bing.com:** Bing is Microsoft's attempt to challenge Google in the area of search.
- **Yahoo.com:** Yahoo is still the most popular email provider and according to reports holds the third place in search.
- **Ask.com:** Formerly known as Ask Jeeves, Ask.com is based on a question/answer format where most questions are answered by other users or are in the form of polls.
- **AOL.com:** The AOL network includes many popular web sites like engadget.com, techcrunch.com and the huffingtonpost.com.
- **Baidu.com:** Baidu is the most popular search engine in China.
- **DuckDuckGo.com:** Has a number of advantages over the other search engines. It has a clean interface, it does not track users, it is not fully loaded with ads and has a number of very nice features.

Classifications of Search Engines

Search engines are classified into the following categories based on how they work.

- Crawler based search engines
- Human powered directories
- Hybrid search engines
- Metacrawlers

Crawler Based Search Engines

All crawler-based search engines use a crawler or bot or spider for crawling and indexing the new content to the search database. There are four basic steps which every crawler-based search engine follows before displaying any sites in the search results.

- **Crawling**

- **Indexing:** Indexing is a process of identifying the words and expressions that best describe the page.
- **Calculating Relevancy:** This is the comparing of search string in the search request with the indexed pages from the database.
- **Retrieving the Result:** Basically, it is displaying of results in the browser.

Most of the popular search engines are crawler-based search engines and use the above technology to display search results. Example of crawler-based search engines:

- Google
- Bing
- Baidu

Human Powered Directories

Human powered directories also referred as open directory system depends on human based activities for listings. The human editors comprehensively check the website and rank it, based on the information they find, using a pre-defined set of rules. Examples are:

- Yahoo Directory (www.yahoo.com)
- Open Directory (www.dmoz.org)

Hybrid Search Engines

Hybrid Search Engines use both crawler based and manual indexing (**Directories**) for listings the sites in search results. More and more search engines these days are moving to a hybrid-based model. Examples of hybrid search engine is msn.

Most of the crawler-based search engines like Google basically uses crawlers as a primary mechanism and manual screening (**Directories**) as a secondary mechanism.

Metacrawlers

Metacrawlers are search engines that take results from all the other search engines and combine them into one large listing. (www.metacrawler.com)

How to Search the Web

To perform a search, you'll need to launch a **web browser**, navigate to a **search engine** in the web browser, type one or more **keywords**—also known as **search terms**—then press **Enter** on your keyboard.

As said earlier, **Google** is the most popular search engine because it's the most effective at finding what you're looking for. On average, it produces more relevant results than **Yahoo** or **Bing**, and it's better at organizing and filtering them. For this reason, I will focus on Google in this tutorial.

Search and Address Bars

Your browser's **search bar** is probably set to Google by default. If it's not set, you can easily type in the website URL (<http://google.com>) and press **Enter** key.

Most browsers also allow you to perform a web search directly from your **address bar**, although some have a separate **search bar** next to the address bar. Simply type your **search terms** and press **Enter** to run the search.



Search Suggestions

If you don't find what you're looking for on the first try, don't worry! Search engines are good at finding things online, but they're not perfect. You'll often need to try different **search terms** to find what you're looking for.

If you're having trouble thinking of new search terms, you can use search **suggestions** instead. These will usually appear as you're typing, and they're a great way to find new **keywords** you might not have tried otherwise. To use a search suggestion, you can **click it with your mouse**, or **select it with the arrow keys** on your keyboard.

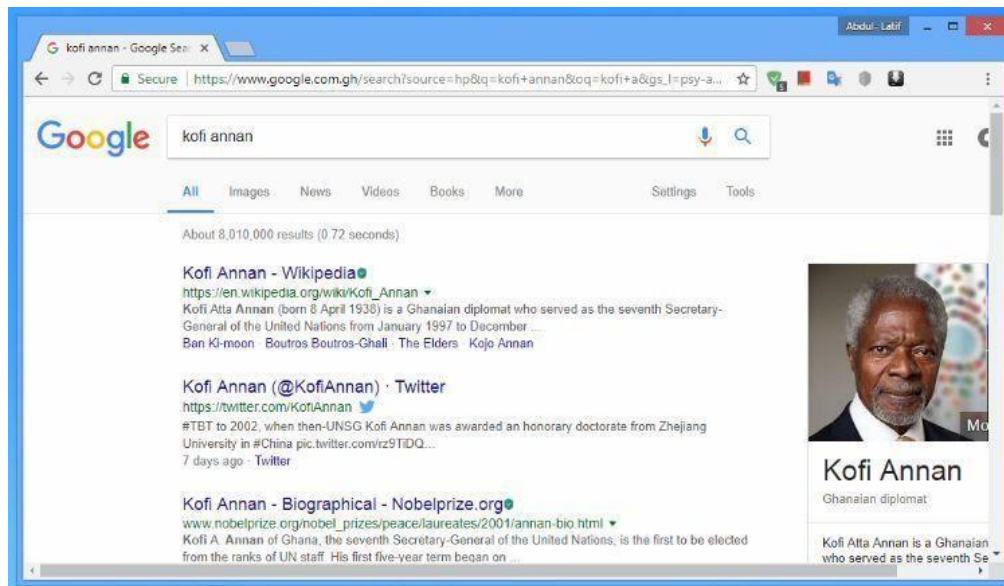


Search suggestions in Google

Search results

After you run a search, you'll see a list of relevant websites that match your **search terms**. These are commonly known as **search results**. If you see a site that looks interesting, you can click a **link** to open

it. If the site doesn't have what you need, you can simply return to the results page to look for more options.



Content-Specific Searches

There may be times when you're looking for something more specific, like a **news**, **picture**, **video** or **books**. Most search engines have links at the top of the page that allow you to perform these unique searches.

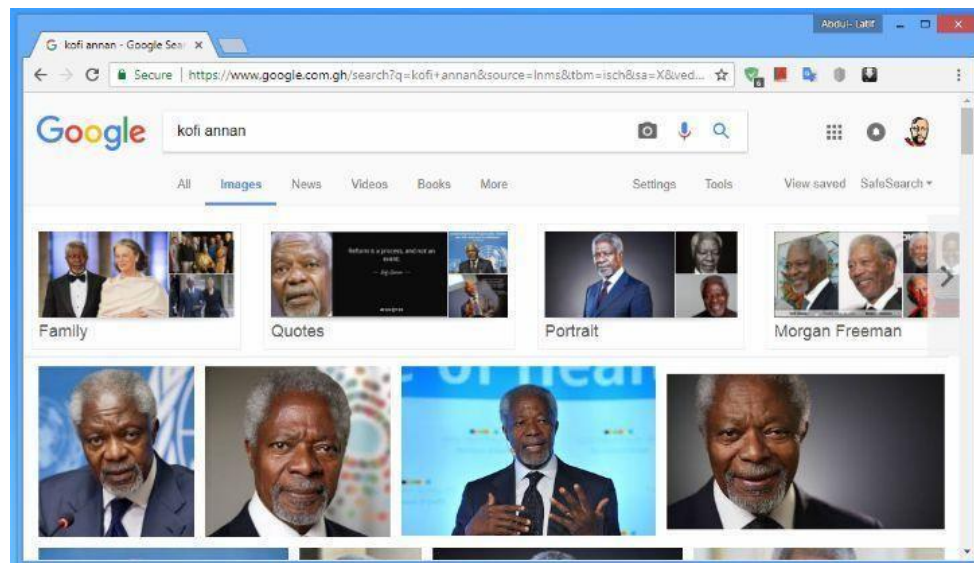


Image search results

Search Advertisements

One final thing to note: Most search engines include advertisements with search results. For example, you can see advertisements at the top of the search results as shown below.



These **ads** are based on your search terms, and they often look similar to other search results. While they may be useful in some cases, it's usually more helpful to focus on the actual search results.

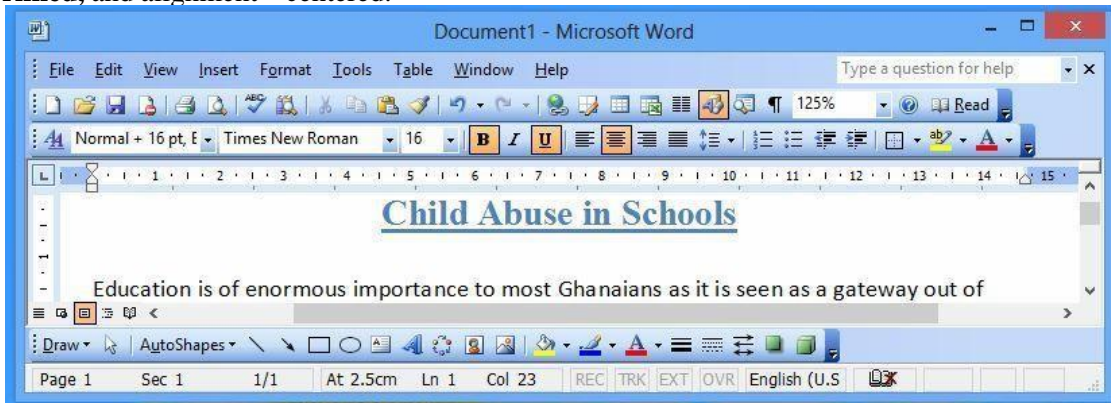
In summary, to use search engine to search for information:

1. Launch a browser e.g. Google Chrome
2. Type in the **search engine** in the **address bar** e.g. <http://google.com>
3. Type the **search terms** (word or phrase) in the **search bar** e.g. Kofi Annan
4. Press the Enter key
5. Scroll through the thousands of **search results** and
6. Select the result that best suit what you are searching for by clicking on its hyperlink to open the page.

Chapter 59 - Project Work One – Creating a Word Processing Document

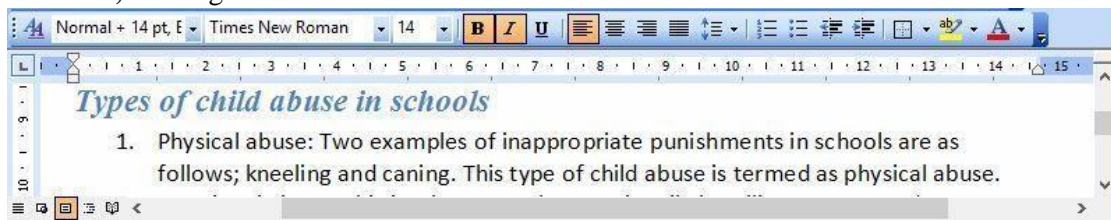
Possible Steps

1. **Heading:** font type - **Times New Roman**; font size - **16 points**; font colour - **blue**; font style, **bold** and **underlined**, and alignment – centered.



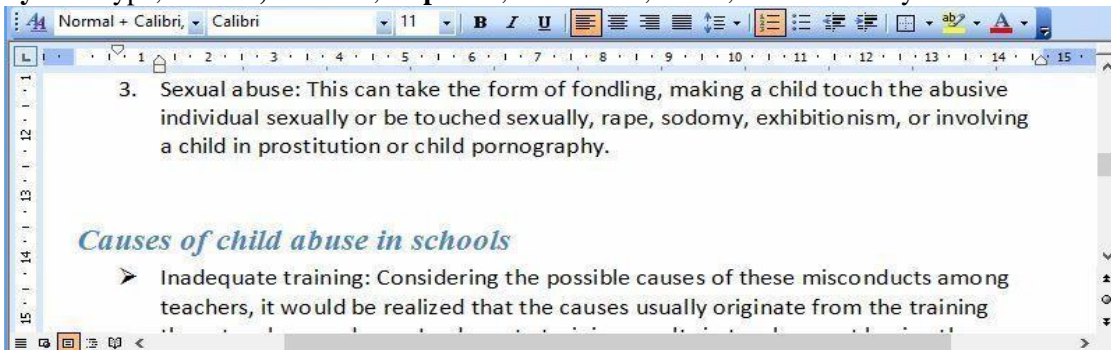
Sub- Heading font type, size, colour and style

2. **Sub- headings:** font type - **Times New Roman**; font size - **14 points**; font colour - **blue**; font style - **bold** and **italic**; and alignment – left.



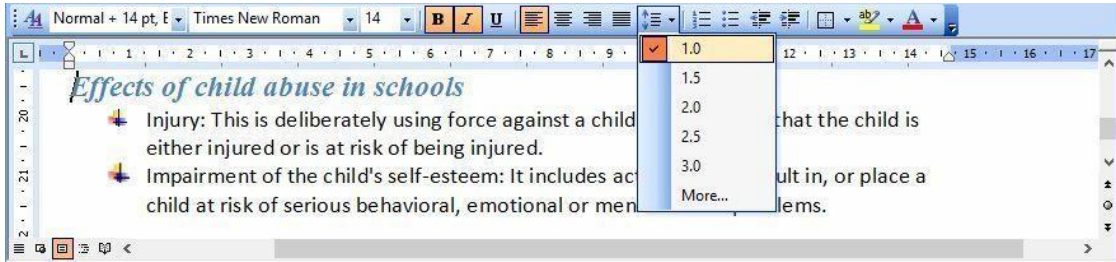
Sub- Heading font type, size, colour and style

3. **Body:** font type, **Calibri**; font size, **11 points**; font colour, **black**; and no font style.



Body Showing Font type, size and colour

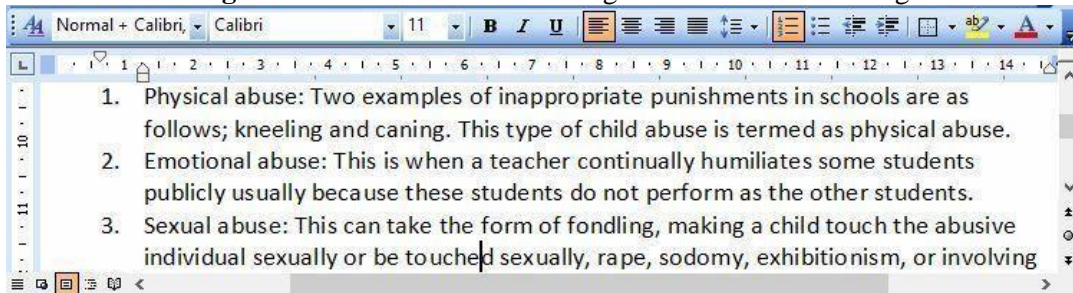
4. **Spacing:** Single Spacing and alignment – left.



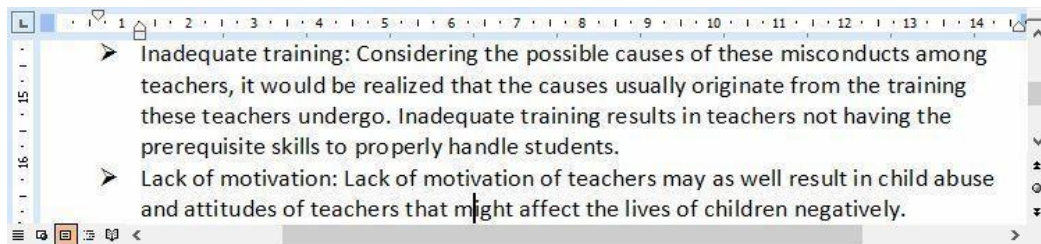
Single Spacing

5. **Paragraphing:** single in the body but double before a sub-heading.

6. **Bullets and numbering:** different bullets and numbering on different sub headings.

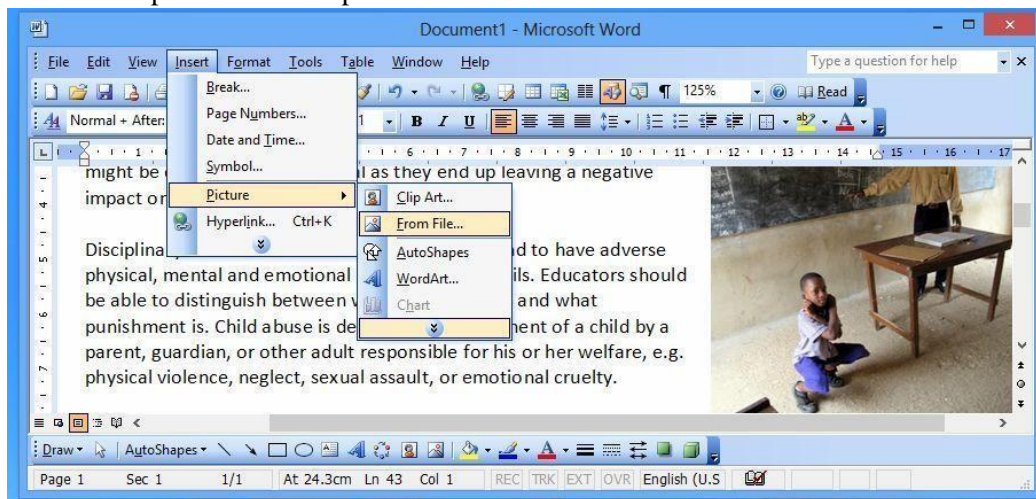


Numbering



Bullets

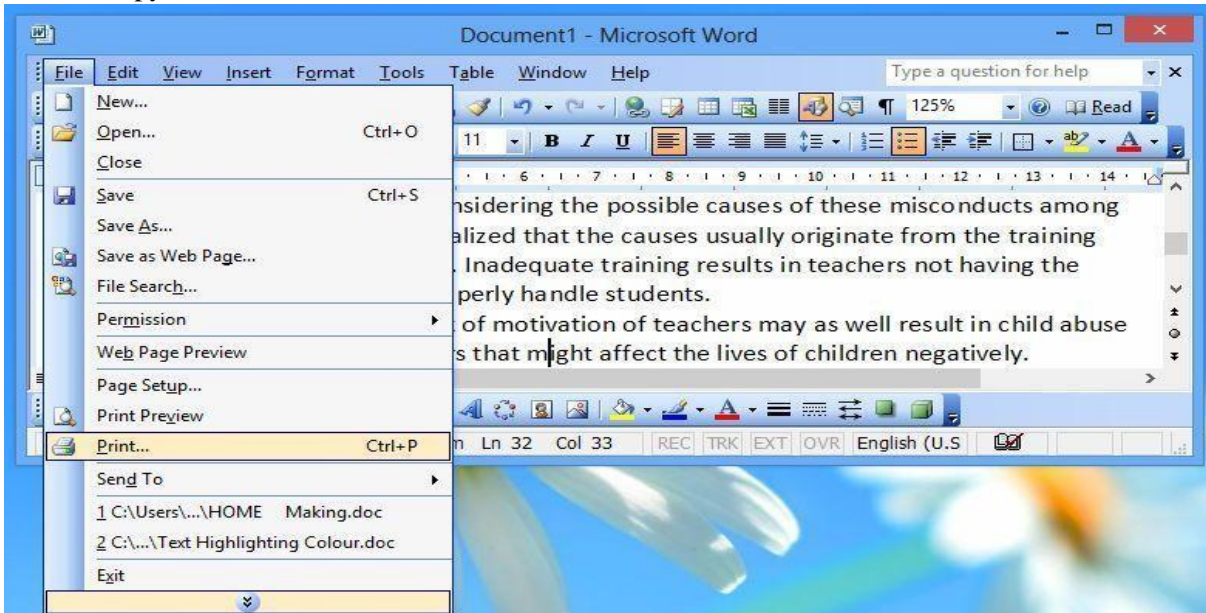
7. **Insert** at least one picture on the topic.



8. Save on the desktop and



9. Print a copy.



Possible Answer

Child Abuse in Schools

Education is of enormous importance to most Ghanaians as it is seen as a gateway out of poverty or basically a gateway to better living conditions. Due to this, most parents do all they can to ensure that their children gain education. Although, Ghana takes much pride in the education of her citizens, some of the approaches in this process might be considered as unethical as they end up leaving a negative impact on the learned Ghanaian.

Disciplinary actions of teachers on pupils often tend to have adverse physical, mental and emotional effects on the pupils. Educators should be able to distinguish between what child abuse is and what punishment is. Child abuse is defined as maltreatment of a child by a parent, guardian, or other adult responsible for his or her welfare, e.g. physical violence, neglect, sexual assault, or emotional cruelty.



Types of child abuse in schools

1. Physical abuse: Two examples of inappropriate punishments in schools are as follows; kneeling and caning. This type of child abuse is termed as physical abuse.
2. Emotional abuse: This is when a teacher continually humiliates some students publicly usually because these students do not perform as the other students.
3. Sexual abuse: This can take the form of fondling, making a child touch the abusive individual sexually or be touched sexually, rape, sodomy, exhibitionism, or involving a child in prostitution or child pornography.

Causes of child abuse in schools

- Inadequate training: Considering the possible causes of these misconducts among teachers, it would be realized that the causes usually originate from the training these teachers undergo. Inadequate training results in teachers not having the prerequisite skills to properly handle students.
- Lack of motivation: Lack of motivation of teachers may as well result in child abuse and attitudes of teachers that might affect the lives of children negatively.
- Lack of self-control: Lack of self-control is another issue that is worth noting. Thus, if teachers are unable to put their behaviour under control, then they may tend to behave in unacceptable ways. This may result in child molesting among others.

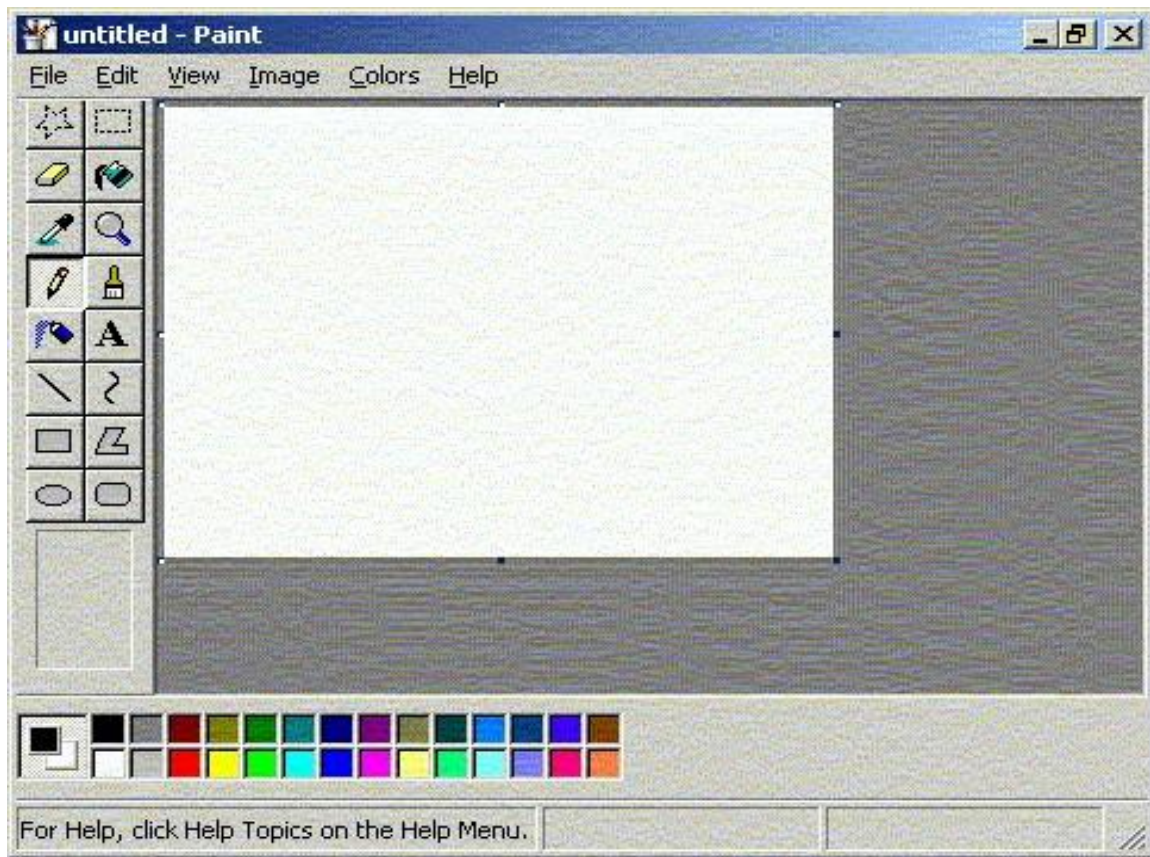
Effects of child abuse in schools

- ✚ Injury: This is deliberately using force against a child in such a way that the child is either injured or is at risk of being injured.
- ✚ Impairment of the child's self-esteem: It includes acts that may result in, or place a child at risk of serious behavioral, emotional or mental health problems.

Chapter 60 - Project Work Two – Creating a file in Paint Application

Launching Paint Application using the Start Menu

1. Click on the **Start Button** located on the **Taskbar**
2. Select **All Programs** from the start menu
3. Point to **Accessories**
4. Double click on the **Paint** application from the cascading menu



Paint Program

Features of Paint Tool

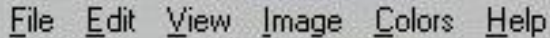
Title Bar

The Title bar displays both the name of the file (**untitled**) and the application (**Paint**) and the **Control Box**.



Menu Bar

Four of the Paint menus—**File**, **Edit**, **View** and **Help**—are common to almost all Windows programs. Some of the commands available, though, are specific to this program.

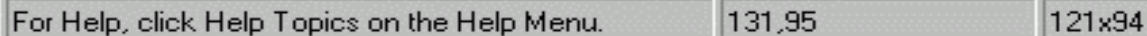


File Edit View Image Colors Help

Menus that are special to Windows Paint are **Image** and **Colors**.

The Status Bar

Right at the bottom of the Paint window is the Status Bar. It gives information according to what you're doing.



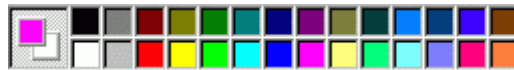
For Help, click Help Topics on the Help Menu. 131,95 121x94

If it can't think of anything pertinent to say, it has the “For Help” message. Help can also be invoked by pressing the **F1** key at any time. This is true of most Windows programs.

Basic Paint Tools

The color Palette

Under the main window is the color palette. The two squares set apart from the rest at the left end of the palette show the active colors; the colors presently in use.

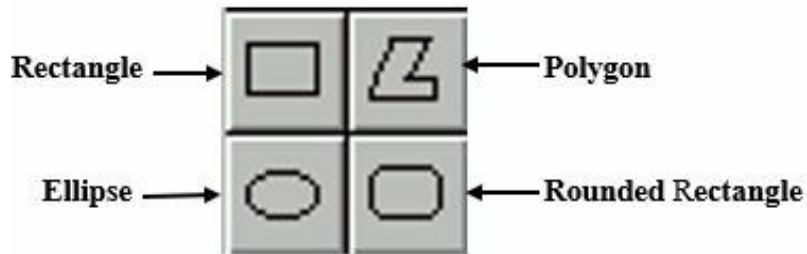


When you click on a color in the palette with the left mouse button, that color will be the **primary** or **foreground** color, here shown as **pink**.

The color you click on with the right mouse button will be the **secondary** or **background** color, here shown as **white**.

The Shapes Tools

This group of tools is used for drawing shapes. Three of them, the **rectangle**, **ellipse** and **rounded rectangle**, respond similarly to your holding the shift key. This constrains them to drawing either a circle or a square—with or without rounded corners. The **polygon** tool responds somewhat differently, in that it attempts to keep its lines exactly vertical, exactly horizontal, or exactly at 45 degrees.



The Fill Bucket

It's also called the **flood tool**. You use it to fill a shape with a colour of your choice. The shape must have absolutely no holes in it, or the colour will leak out and go into places where you don't want it. If that were to happen, you'd hold down **Ctrl** and press **Z**.

The Pencil Tool

The pencil draws freehand. It's very, very hard to learn to use. The pencil is always set at a width of one pixel.

Text

Text is tricky. Always save before you start adding text, so that if you run out of undo levels you can exit without saving and have your picture as it was before you started the text.

To make your initial text box, you can click or drag; it doesn't matter. If, while you're typing text, you realize that the box is too small, you can put your cursor over one of the "handles" (black blocks) and drag it wider or taller or both.

When you have all of your text in the box, **adjust the size** of the box, because it doesn't contract to fit the text when you paste. Be very careful that you do have the double-ended size adjustment arrow before you press a mouse button, or you may paste the text before you mean to.

It is possible to **move** a text box before pasting. You have to hover your cursor exactly over the dashed line until a normal-looking arrow appears. Press the left mouse button and drag the text box to a new position.

The Eraser Tool

Here we have the eraser, a clever little gadget. When you press the left button, it rubs out everything you drag over.



The Line Tool

This tool makes straight lines. You can drag freehand to make a line in any direction, or you can hold down the **shift** key and the line will be constrained to exactly vertical, exactly horizontal, or exactly 45 degrees. The line thickness is chosen from the box under the toolbox.

Line thickness is inherited by all four Shape tools. That is, if you have chosen a Line thickness of **3 pixels**, any rectangle, rounded rectangle, ellipse or polygon will have an outline thickness of **3 pixels**.



The Color Picker

If you're working on a drawing, particularly if you're "**zoomed in**", and you want to use one of the colors that's nearby in the part you're working on, instead of going down to choose the color from the palette you click on the color picker and then on the color in the drawing.



The Zoom Tool

The little magnifying glass changes your view of a drawing. If you want to change some tiny thing that's really hard to see, click on the magnifying glass. It can be called the **zoom** tool or the **view** tool.



The Paintbrush

It's useful for painting right up close to something.



The Curve Tool

It's hard to learn, but you can have a lot of fun with it. You choose a line thickness from under the toolbox, and you choose a color to draw with.

Drag a straight line, then click somewhere near it. Move your cursor and click again, or drag and click.

You only get two clicks per curve. If you don't like what happens you hold **Ctrl** and tap **Z** and it'll go away.



The Spray Paint Tool

The spray can deliver individual pixels of colour in a spray pattern.



The Selection Tools

The one on the right is the one you'll almost always use. It selects a rectangular area. The star shaped one is trickier.

The Rectangular Selection Tool




- You use this tool when you want to move something to a different part of the drawing.
- You also use it if you want two or more copies of the same thing.
- A third thing you can use it for is to draw or write with a small part of your painting.
- Last, you can use it to delete an area.

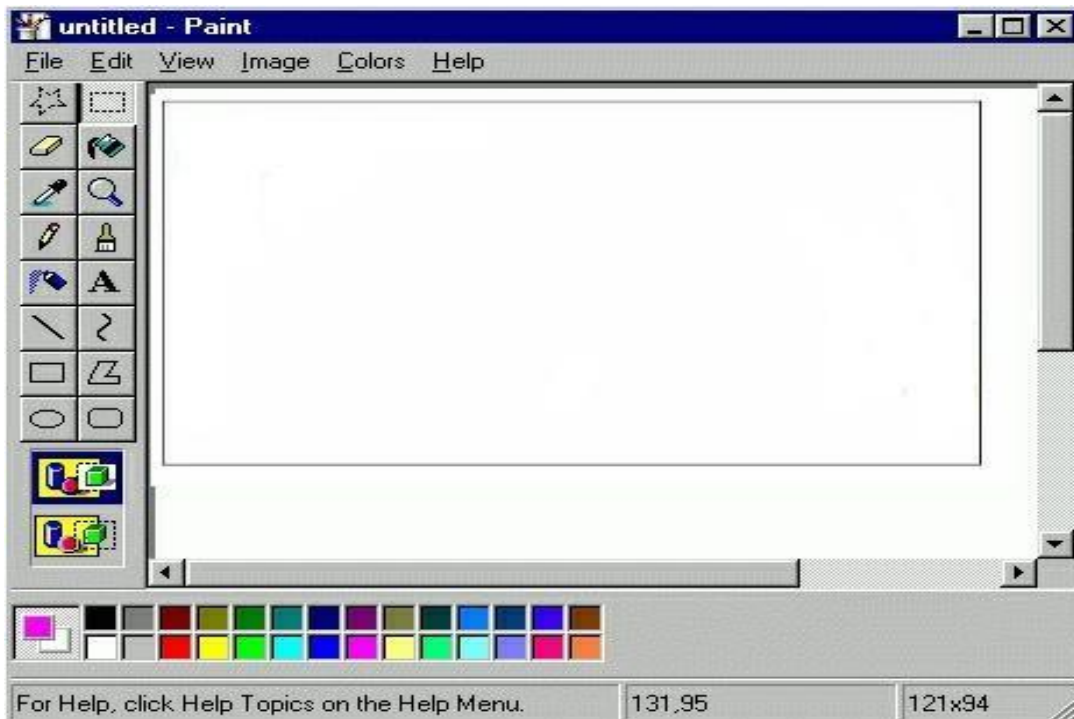
The Freehand Selection Tool




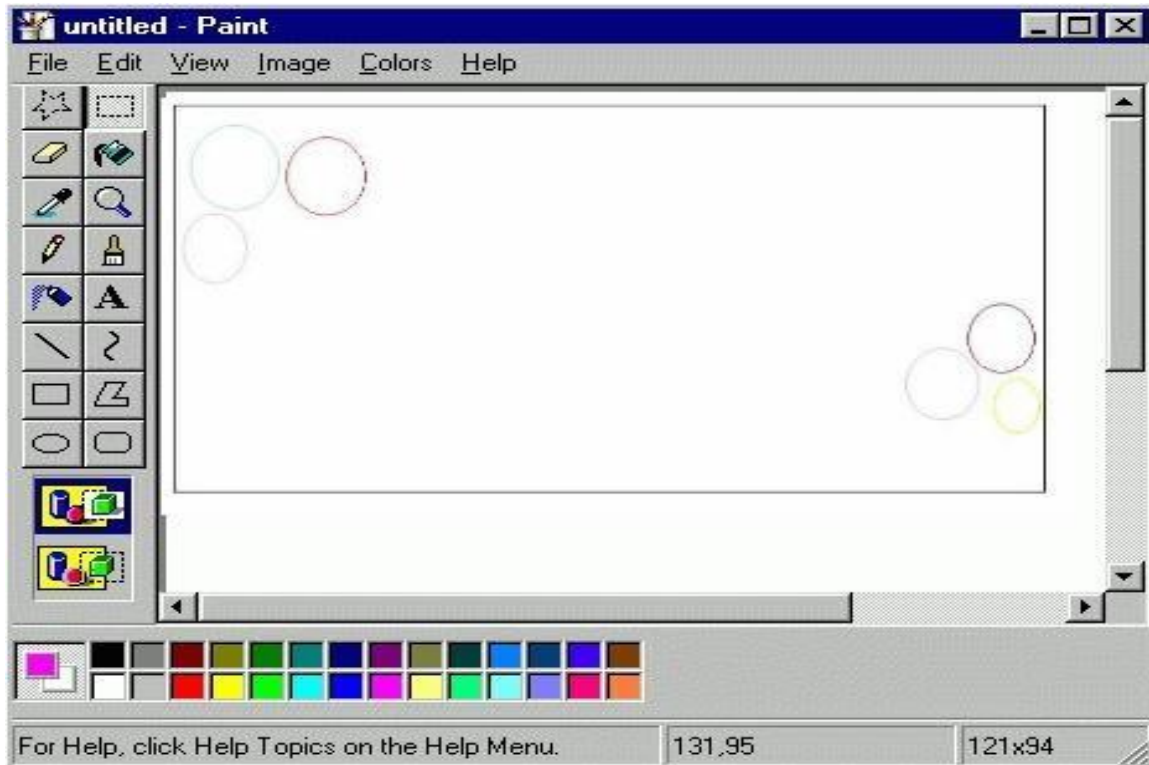
You'll only need to use this tool if you want to copy something that's in an awkward position.


Creating Paint File

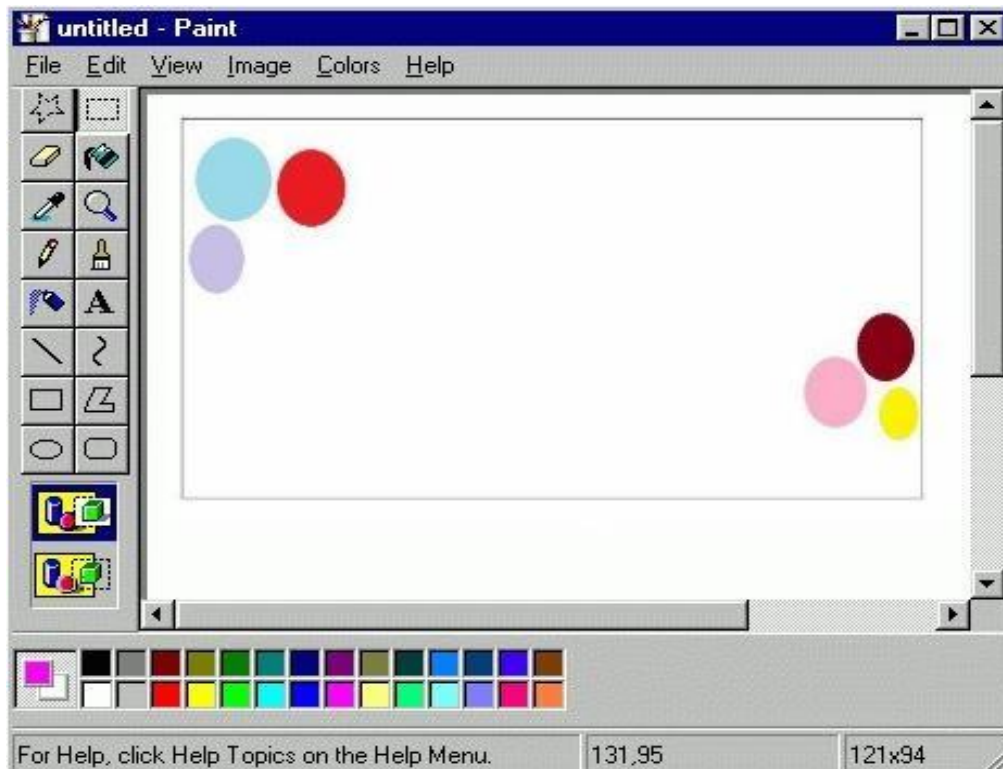
1. Click on the **Rectangle**  tool and draw the size of the proposed card.




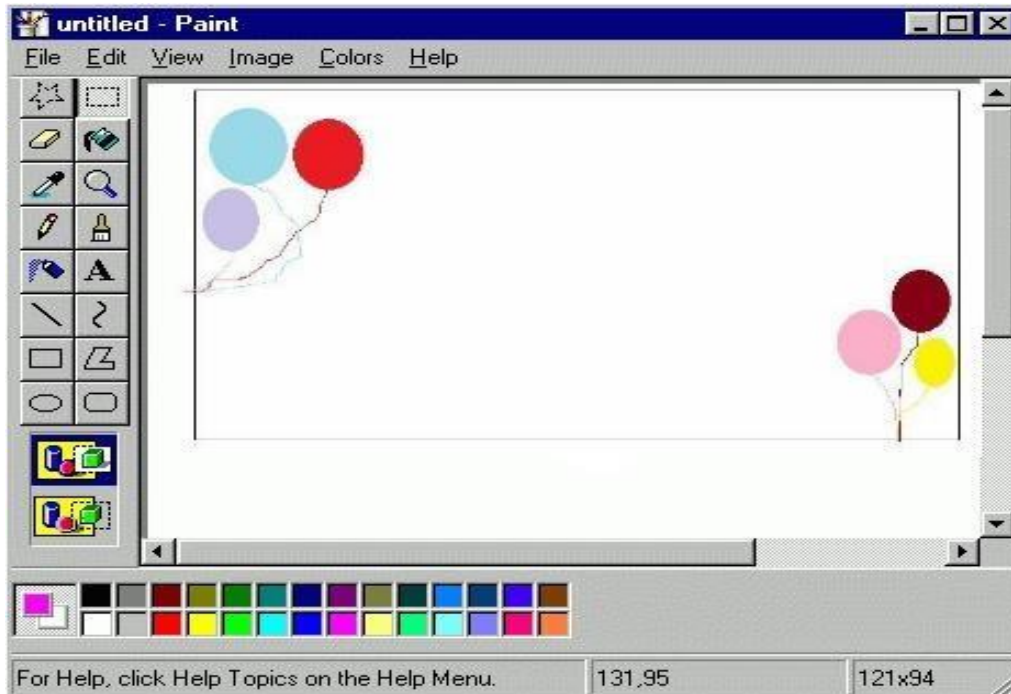
2. Click on the **Ellipse**  tool and draw six (or more) balloons of different sizes.



4. Click on the **Fill With Colour**  tool and on the appropriate colour to fill each of the balloons at a time.



5. Click on the **Pencil**  tool and on the appropriate colours to draw ropes.



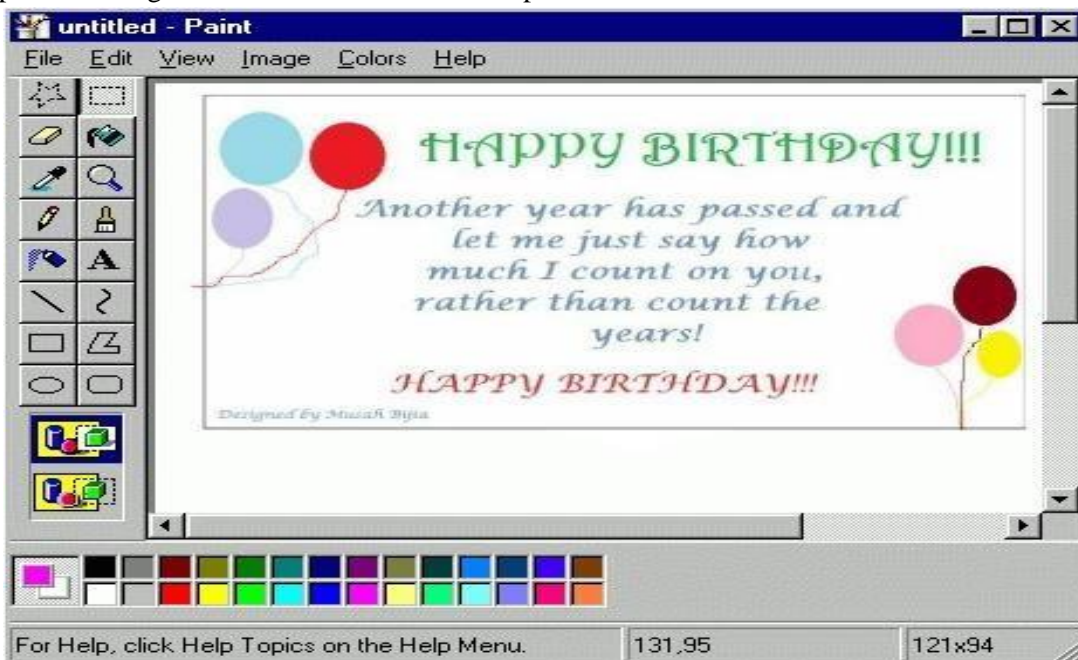
6. Click on the **Text** tool and insert a **text box** at the top.
7. Select a suitable **Font Type** e.g. **Harrington**
8. Set the **Font Size** e.g. **28 points**
9. Add **Font Style** e.g. **bold**




10. Select a nice **Font Colour** e.g. green
11. Type **HAPPY BIRTHDAY** in the text box.



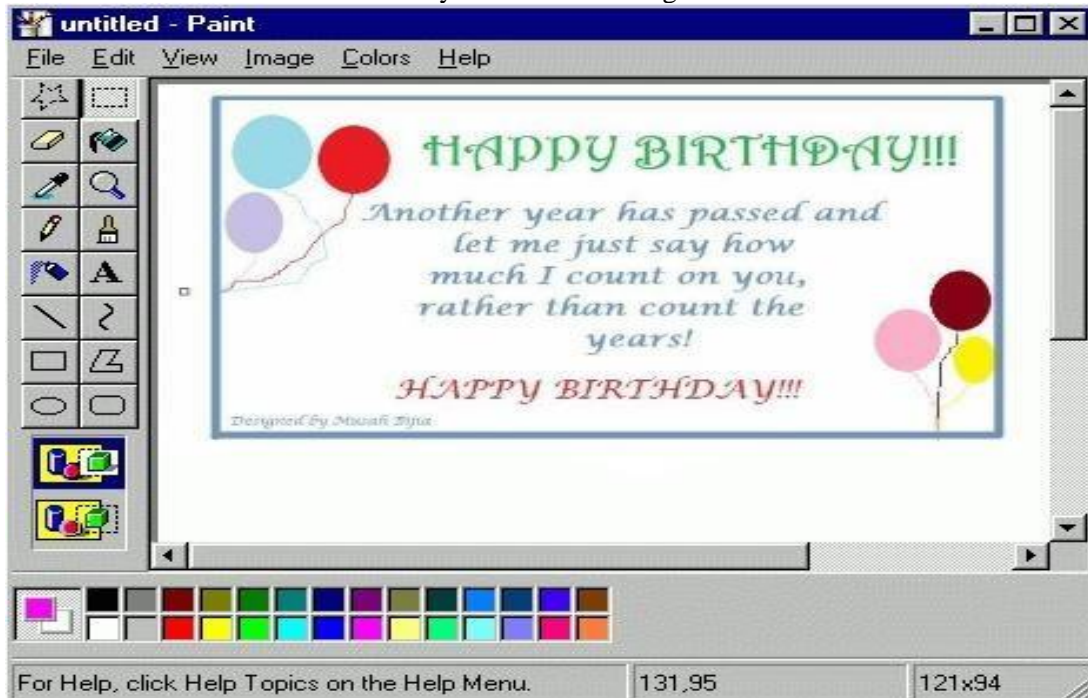
12. Insert another text box between the sets of balloons.
13. Select another suitable **Font Type** e.g. **Lucida Calligraphy**
14. Set the **Font Size** e.g. 14 points
15. Add **Font Style** e.g. bold
16. Select a nice **Font Colour** e.g. blue, red, etc.
17. Type the message to be used for the card. Example is shown below:



18. Click on the **Line**  tool: and select line **size** e.g. (third line) and **colour** (e.g. blue).

19. Click and drag carefully to draw a border line in place of the first rectangle drawn.

20. Click on **Eraser**  tool and erase any unwanted drawing.



Saving Paint File

- Click on **File** menu
- Click on the **Save As** option from the list.
- In the **save as dialog box**, type a name for the file in the **File Name** box e.g. Musah Bijia
- Select the **save as** type e.g. .gif, .png. etc.
- Click on the **desktop** for the file location.



- Click on **Save** or press on **Enter** key.

Printing Paint File

- Click on **File** menu
- Click on the **print** option from the list.
- In the **print dialog box**, select the appropriate printer.
- Click on **Ok** button.

