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Economic Cooperation

ICT Manual for Trainers

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ICT MANUAL FOR TRAINERS

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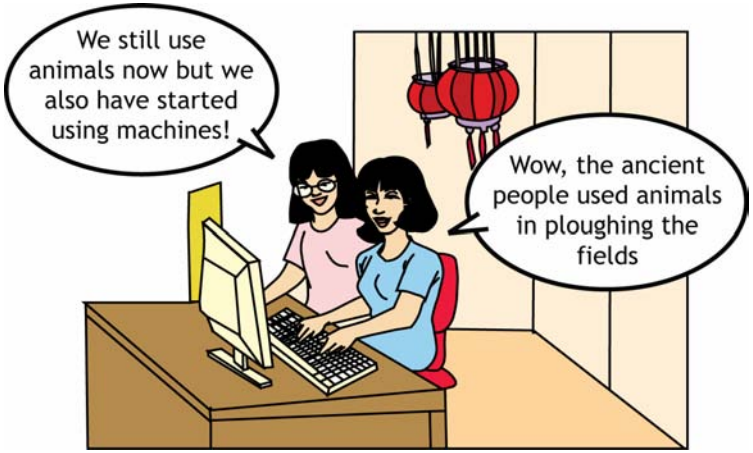
TOPIC 1

ICT AWARENESS

MIND BOGGLER

Do you think there was a major change in the tools used in agriculture from ancient times till now? If yes, give examples by talking to people from different generation or by referring to different resources (TV, magazines, newspapers, books, etc).



LEARNING OUTCOMES

By the end of the topic, you should be able to:

1. Determine the changes that have taken place in the knowledge and communication sectors with the development of society.
2. Decide if access to knowledge using advanced tools and methods of production can promote the productivity and efficiency of farming.

INTRODUCTION

In terms of tools and methods people use for production, the development history of human society which has been lasting for several thousand years and can be divided into three stages:

(a) Agricultural Society;

(b) Industrial Society; and

(c) Information Society.

(a) **Agricultural Society**

The first stage is Agricultural Society, in which agriculture is the main living method for society and the production tools are mainly sickle, hoe, plow and so on, which are manually made of wood, stone, copper, etc. At that time, agricultural activities in four seasons were implemented individually, mostly depending on livestock and farmers with their experiences. "**Facing loess, back against the air**" is the vivid description of such laborious working method.

Figure 1.1 shows the traditional production of agricultural society in China.

Figure 1.1: Traditional production of Agricultural Society in China

(b) **Industrial Society**

The invention of steam engine brought us to the second stage - **Industrial Society**. In this society, mechanical industry is the backbone of social production. Modern inventions like engine, lathe and crane were human's primary production tools used in the form of assembly line, with which man could accomplish more complicated production with higher working efficiency. Figure 1.2 shows a typical factory in industrial society.

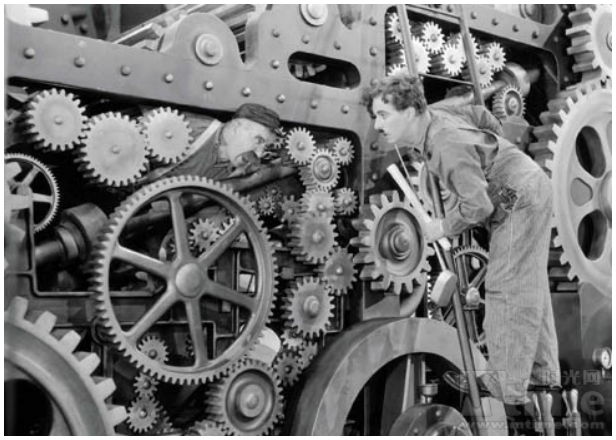


Figure 1.2: Typical factory in Industrial Society

In Industrial Society, agricultural production tools changed into tractor, reaper and so on, which take the place of manual labor, greatly improving agricultural production efficiency and facilitating the development of large-scale agriculture. Figure 1.3 shows the agriculture production in industrial society.

Figure 1.3: Agriculture production in Industrial Society

(c) **Information Society**

As engine brought us to Industrial Society, the creation and utilization of information technology tools such as computer, network, and automatic equipments lead us to the third stage of the long river of human development history - **Information Society**. Nowadays, the whole society in the world is stepping into this new age of Information Technology.

What is information technology? Let's start from the meaning of information. Broadly speaking, information is message, a certain kind of meaning which can be expressed by voice, language, words, image, animation, and other media.

For example, how many acres of farmland you own, how many apple trees you plant, how many cows you feed and how about your family's income this year, etc, all of that can also be called information. Therefore, information is ubiquitous and a great deal of information is around us.

Information technology just refers to the means and ways of information collecting, processing, storing, communicating and applying. With the development of computer technology, those means and ways are getting more advanced, and more convenient and their impact on our production and living is getting more popular and more profound.

The invention, development and wide-spread use of information technology symbolizes information society's birth and development. In the information age, various advanced information technology tools like computer, network and telecommunication technology have been widely used in every walk of life.

For example, in the field of industry, the machine-tool originally operated manually, changes into numerical control machine due to the control by computer. We can simply input the blueprint of a workpiece which we need into computer and the computer will automatically operate the machine to produce the very thing in an accurate form of that blueprint. Consequently, the work which needed to be done by many people before can now e easily accomplished by only one person.

Moreover, people who are in different places can even collaborate to complete work online at home. Compared with traditional industry, information technology is labor-saving and can greatly raise production efficiency. In agriculture production, the information technology-based intelligent production tools are also labor-saving and it can raise efficiency as well as output to a great extent.

ACTIVITY 1.1

Speak or write on the development of society. Then, please fill in the table below.

Development Stage of Society	Tools Used	Ways of Production
Agricultural Society		Individual, manual
Industrial Society	machine	
Information Society		

1.1

INFORMATION TECHNOLOGY AND CROP FARMING

With the support of information technology, agricultural machinery such as seeder, tiller, irrigation system, weeder, fertilizer machine and reaper are no longer individual machines. Connected with varied agricultural intelligent decision making systems which can be linked to other instruments used to detect moisture content, temperature, and fertility, those connected agricultural machinery would make decisions on when to irrigate and when to fertilize according to the information about the temperature and humid level of soil. Then direct irrigation system and fertilizer machine automatically irrigate and fertilize, making sure an optimal growing environment for crops, which is not only labor-saving, but also raising yield per unit area.

In America, nowadays, people are obsessed with the study of '**Precise Agriculture'**, which takes advantage of computer to analyze and control every factor that may affect agricultural production. It is not only fertilizer-saving, pesticide-saving and seed-saving, but it can precisely adjust every management measure of soil and crops according to the change of parameters of farm.

Figure 1.4: ICT and crop farming bases

Furthermore, it helps optimize every kind of investment, achieves highest output as well as protects agriculture ecology environment and nature resources.

Besides, China Agriculture University has preliminarily established a virtual computer plant system which can be used for the training plant cultivation. Based on the system, there is no need to use real plants; farmers only have to imitate the actual planting process on computer. All the training processes are intuitive and easy for farmers to master. It can quickly transfer the findings of scientific research into productivity.

1.2 INFORMATION TECHNOLOGY AND ANIMAL HUSBANDRY

In America, there is an association called **DHIA (Dairy Herd Information Association)**. People in that association input related data about milk cows to a specialized information management system, then analyze and manage those data ,for example, people compare various parameters of higher yield mild cows with that of common ones, come up with some findings, which they can use for selecting and nurturing milk cows. Surveys show that, farmers who utilize such information management system have higher average annual milk output than those who didn't use.

By using information technology, we can effectively facilitate agricultural and animal husbandry activities. For example, through internet, farmers can directly consult experts about certain kinds of crops insect pest, livestock plague and so on. In addition, they can release information of epidemic situation on the web in order to warn relevant persons to take good preventive measures.

1.3 INFORMATION TECHNOLOGY AND FORESTRY

In the developmental process of industrial society, forests have been damaged seriously and environment has been severely polluted. We should be clearly aware of the current situation and make good use of information technology to collect, manage and analyze relevant data of the forest resources since it's both labor-saving and precise.

For example, we can divide precincts into many small blocks which can be positioned by satellite positioning system and then equip those blocks with cameras, temperature and humidity sensors and connect them with computers. As such, these computers can continuously collect and analyze information of each block and help people predict tree diseases and pests, forecast the level of fire danger and so on. That information is also helpful for us to detect environment and assess the situation of application of these resources.

1.4 INFORMATION TECHNOLOGY AND FISHERY

Currently, many countries in the world are effectively applying **Geographic Information System (GIS)**, **Remote Sensing (RS)** and **Global Positioning System (GPS)** 3S for short, in the production, research, management and so on in fishery.

3S System not only help us to seek and locate shoal, but also precisely divide water areas for management and supervision. Meanwhile, with the development of computer intelligent recognition, reasoning technology and neural network technology, some computer expert systems can monitor the parameters of pools, automatically confect feed and cast baits as well as diagnose fish diseases etc.

The development of information technology not only innovate production tools, bringing great revolution to production way and methods, but also influence our daily life style. Especially, the development of computer and network technology is changing our traditional ways of information communication like writing letters, making phone call, passing on messages and so on which were formed thousands of years ago, making our daily lives more convenient, making the dreams emerging in novels and fairy tales come true.

Figure 1.5: A modern fishery based outlet

ACTIVITY 1.2

What are you living on? Crop farming, animal hubandry, forestry, or fishery? Please get all members together and discuss the problems you are facing and how to improve your product output and working efficiency. Brainstorm all the strategies. Please list in the form and see if information technology can help.

What is to be improved?	What measures to be taken?	Can Information Technology help?
1.		
2.		
3.		
4.		

1.5 INFORMATION TECHNOLOGY AND OUR DAILY LIVES

1.5.1 Computer and Internet Enable Us to Access to Various Useful Information at Home

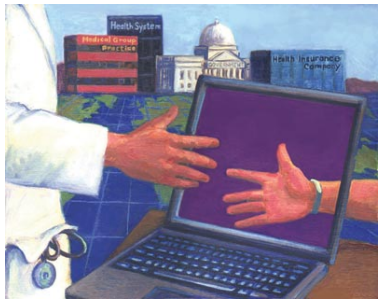


Figure 1.6: Acquire experts' help online

Table 1.1 shows how a computer and Internet help you to access various information.

Table 1.1: Various Information via Computer and Internet

Various Information Via Computer and Internet
(a) If your agricultural products don't sell well, you can publish the information about those products online, which helps you connect to potential customer.
(b) If your fruit trees get a certain kind of strange disease, you could look up relevant information, even get experts' advice through the web.
(c) If you are a housewife caring about your whole family's health, you could learn some knowledge online, including how to keep healthy and how to prevent and treat common diseases.
(d) If you are a responsible mother, you can search for ways to educate your children online and download some useful and latest learning resources.
(e) If you are a movie fan, you could acquire some movie information through the network, even watching the latest movies online.

In sum, Internet can thoroughly change the situation of extreme information inadequacy, helping us acquire useful information easily and quickly.

1.5.2 Computer and Internet Can Help Us Process and Publish Information

Taking advantage of computer and network, we can process information according to our requirements. Through the internet, you can not only look up treatment of fruit tree diseases at home, but also download practical software helping you calculate the dosage of every kind of medicine.

Want to show your husband the progress of your children? Through video chatting software, your children and their father can chat with each other everyday, and consequently, your husband will be aware of your children's activities and is well-informed about your children's education.

If your hometown has beautiful sceneries which are suitable for developing tourism industry, you can use computer software to videotape panoramic image of your hometown. It can provide tourists with more detailed information about the place and then encourage them to come to your hometown.

1.5.3 Computer and Internet Can Help Us Store Information

There is large capacity in computer and Internet which can be used to store the information we need. Have you ever had trouble in storing so many account books? Have you ever met with the problems of losing relevant materials about a certain kind of fertility or seed? From your income and expense situation, materials about the seed and fertility, the sale status of agricultural products to the photographs and so on, all this information can be stored in computer or Internet in a certain way. It doesn't need real space and you can permanently preserve and conveniently access the information.

1.5.4 Computer and Internet Can Help Us Transmit Information

Information technology has transformed the way we communicate. Regarding the way of information transmission, in ancient times, people used fire to quickly transmit the message of enemy invasion, used Bellaire and drumbeat to tell the time and convene the mass; besides, pigeon and semaphore were also used to deliver messages.

In later times, mailing letters from the post office has become the principal way of information communication. Later, telephone and telegram emerged as the main ways of information transmission, and the tools increased communication among human beings.

With the development of information technology, there emerge many new tools of information communication, E-mail, various chatting tools, BBS, website and so on, which became indispensable information communication tools in our lives. With their speed and convenience, interactions among people are facilitated greatly. People who are thousands of miles apart could get in touch with each other in very short time through computer and internet.

Figure 1.7: Chatting, Emailing and Video Conferencing

Traditional postal mailing always needs a longer time, in China as an example; the shortest time for a nationwide mail to its receiver is two days. While, through E-mail, you only need several minutes even several seconds for another person to receive your e-mail. It not only saves so much more time, but also reduces cost and is highly reliable.

In addition, you can use various just-in-time chatting tools to help you get in touch with others instantaneousy just like a phone call. Moreover, the information that you communicate is not limited in words and voice, you can also transmit image and video at high speed and with high reliability.

As information technology helps us acquire much useful information and know more about the outside world, it also give us more opportunities to make us known to outside world and therefore help us promote ourselves.

To sum up, information technology based on computer and network technology has close relationships with social production and our daily lives, it is really a good assistant to us. Therefore, mastering some basic skills, like computer operation and network application, not only help us solve the problems of producing and marketing, raise income, but also make our lives more convenient.

Figure 1.8: Mail letters at post office

Figure 1.9: More women participate in ICT learning

1.6 SOME RELEVANT CASES: INFORMATION TECHNOLOGY IN DAILY LIFE AND PRODUCTION

Some relevant cases are as follows:

Let's see those people in rural areas who share common background and experience on how to use computer and network to solve their problems.

Case I:

Protagonist: Zhao, 46 years old, lives with her husband and children in a small village in western China. Her family owns several acres of farmland and she makes a living by planting orange trees. She has a son and two daughters. The eldest son is a junior student in a university in Beijing; the eldest daughter is a high school student in the town and the second daughter is studying in a junior high school in their village.

Zhao's problem:

As a volunteer of Beijing Olympic, her son couldn't go back home this summer vacation. Haven't seen him for nearly one year, Ms. Zhao missed her son very much and wanted to see him. She has been always thinking: "How is my son in the university? Is he thinner?

Although my son is very thoughtful, and calls back every time and tells us that he is well, but how exactly is he? I really want to see him. Besides, he has studied in the university for three years, but I have no idea about the campus, "does it look like that showed in TV?" The last time when my son called home, I told him to send some photographs to us, but, one week has passed, there is no message, what happened?

Considerate son also asked his mother to send him several photos of his families, but the post office in their village has been moved to another nearby village, merging with the original one to be a larger post office. As a result, it became very inconvenient for Ms. Zhao to send and receive mails.

Furthermore, the orange trees in Ms. Zhao's orchard have got some strange disease which villagers had never seen before. It should be the right time for the plant to thrive, but many trees have withered severely. A lot have been done to treat the disease, but nothing improved. Experts in the town had come to see and given some advice, still there were no

improvements. If the disease still couldn't be cured, her family would inflict great losses this year. Ms. Zhao became very anxious thinking of her orange trees.

Solution to the problems:
Having heard that their village bought some computers with connection to internet, Ms. Zhao's son suggested his mother apply an E-mail account so that they could get in touch with each other via E-mail.

Following her son's guidance, Ms. Zhao applied an E-mail account through the network. Ms. Zhao excitedly sent her first E-mail to her son, in which she not only got to know her son's recent situation, attached recent photographs of the families, but also informed her son about the strange disease of the orange trees.

Figure 1.10: The mail Ms. Zhao sent to her son with attached photos

The next morning Ms. Zhao sent the email, to her surprise, she has received her son's reply in her electronic mail box quickly. In this email, her son not only told his mother about his

learning and living situation on campus, but also attached several photos of the university. In addition, he gave two email addresses of orange tree experts and advised his mother to consult the experts about the strange disease via email.

Ms. Zhao downloaded her son's photographs and shared them with her husband and daughters happily. Having seen beautiful campus and energetic son, they were all very happy and relieved.

Although with a little suspect and apprehension, Ms. Zhao consulted the experts her son had recommended about orange tree's strange disease via E-mail. After she sent the email, she went to the computer center in the village to open her electronic mail box everyday to check whether there would be replies. After several days, there was one mail in the mail box from one of the experts.

In this letter, the expert carefully asked about the symptoms of the sick trees and asked for the photographs of the symptoms. Ms. Zhao and her husband followed expert's direction, describing the symptoms of the trees, attaching relevant photographs. One week after, the expert replied. He explained the strange disease and also told them the corresponding treatments in detail.

Even though Ms. Zhao's husband doubted about the solution of the 'unseen mysterious expert', Ms. Zhao's husband finally decided to follow the expert's advice with Ms. Zhao's persuasion. One week, two weeks…, gradually, sick trees were getting better. After one month, orange trees recovered completely.

Once again, Ms. Zhao used email to tell her son about the good news immediately and also sent a gratitude letter to the expert; she didn't forget to attach photos of the beautiful and healthy orange trees. In those pictures, Ms. Zhao, her husband and two daughters are looking the oranges with sweet smile, green leaves of those orange trees were shining delightfully in the summer sun.

Figure 1.11: The delighted family members and the healthy orange trees

Case II:

Protagonist: Ms. Wang is 36 years old, and live in a remote mountain village in China. Her husband left for town for a part-time job, which is far away from this small village. Ms. Wang stays in this small mountain village, making a living on the farmland and taking care of her two sons, both of them are primary school students.

Ms. Wang's problems:

As a qualified mother, Ms. Wang always thinks of providing enough nutrition for her children, keeping them healthy. Not long ago, she bought a book about cooking, however, she is dissatisfied with the book because the cooking process in the book is not described in detail. Thus she could not cook any meals as suggested in the book. "How can I learn to cook delicious and nutritious meals? It is too difficult without detailed help!"

Ms. Wang's husband's birthday is approaching and she started to consider how to prepare a special birthday gift for her husband. It has been more than one year since her husband left home, so the very thing my husband wants to do must be having a talk with her and their children. "It would be best if all family members could get together, see each other and chat," Ms. Wang thought, "But my husband is too far away from home, what should I do?"

Solution to the problems:

Not long ago, the government helped install computers for every household in this village, including Ms. Wang' house. Besides, all computers connect to the internet. However, Ms. Wang has no idea about what she can do with computer, nor has she known any computer knowledge.

When Ms. Wang talked to her neighbor Ms. Bai about the problems (cooking and birthday gift), Ms. Bai told her: "Computer is so powerful that it can help you solve your problems. You can search for cooking instruction videos through internet, in the meantime, you can also use video chat tools through which you together with your children can see your husband and talk with him."

"Can computer really solve my problems? If so, why not have a try?" Ms. Wang talked to herself and tempted to try, "Ms. Bai can teach me! She knew nothing about that before until her son taught her during his winter vacation. She learned it quickly under the guidance of her son, so why can't I?"

Thanks to Ms. Bai' instruction, Ms. Wang learned to use google search engine, from which she found lots of resources, including some cooking instruction websites with instructional videos. Ms. Wang opened one of these websites and amazedly found a series of useful videos. She was so excited, "from now on, I can learn to cook great meals following those instructional videos and I will not have to worry about making delicious and nutritious meals for my children."

Figure 1.12: Cooking instruction video that Ms. Wang searched in the internet

Afterwards, with the help of the warm-hearted neighbor, Ms. Bai, Ms. Wang downloaded and installed a chat-tool

(MSN), then applied two accounts (One for herself, the other one for her husband). On the birthday of her husband, the family members had a long video-chat excitedly. With sweet smiles on his face, the husband in the video looked particularly delighted. Yes! That's the very special gift! He must feel happy and joyful.

Figure 1.13: An online chat tool-MSN

Case III:
Trade for Agricultural Products Exportation

Background: In China, there is a village located in suburb of a city in Jiaodong peninsular. It is famous for ginger production base by using pollution-free ginger production technique, and its high quality ginger is very popular in the domestic market.

The village's problem:
When entering the new century, leaders of this village intented to enlarge scale of production and explore new markets. Since it's near the sea, the village leaders started to pay attention to regions like Hong Kong, Macao and South-East Asia etc., and set about the journey of production exportation. But, how can they know about the outside markets? It's too expensive to go out for a field investigation.

Solution to the problem:
Knowing that it's possible to do business with clients from countries all over the world through the Internet, the leaders were very excited and wanted to have a try. They found an authoritative website (http://www.vegetable.com.cn/) which is rich in content and many merchants gather together there.

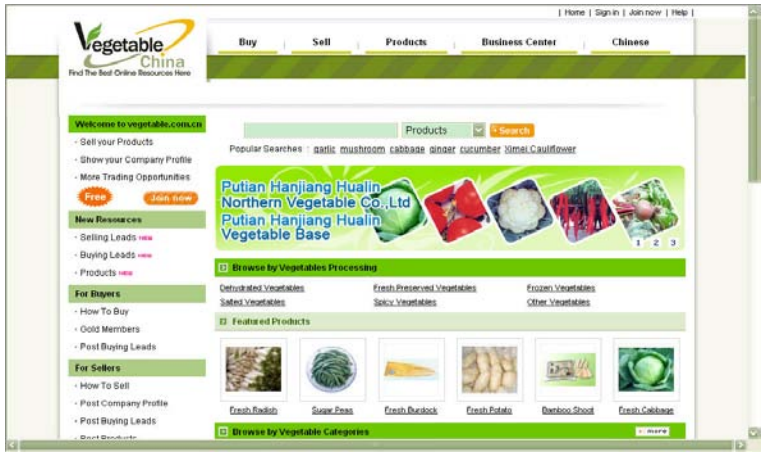


Figure 1.14: Home page of the product transaction website

After registering a free account, they own a space on this site. The villagers found that there are many clients willing to purchase ginger and many of them wanted to establish long term business relationships. So, they decided to find a steady and powerful client here. After they considered many factors, a company located in Hong Kong came into sight, which not only has long term demand for ginger but also has been seeking satisfying partners in mainland.

Figure 1.15: Clients' contact information provided by this site

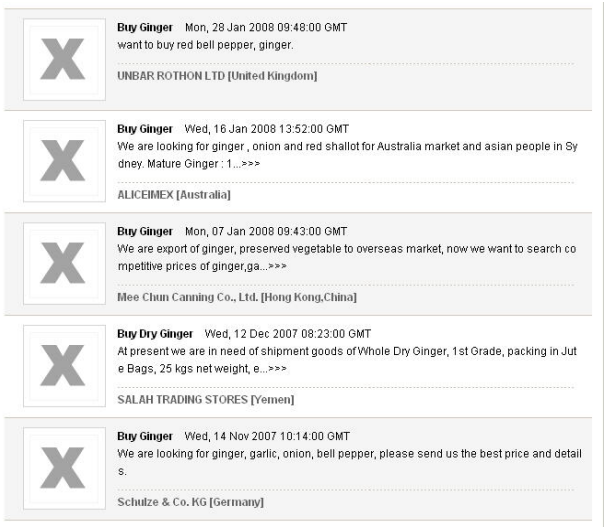


Figure 1.16: Clients' information

Via E-mail, the villagers got in touch with Hong Kong clients. Both sides were very satisfied with each other. Under a certain safeguard mechanism, they negotiated and determined the price, the time of delivery and the method of paying. More importantly, they established a long-term cooperation relationship. Thanks to the large scales and good price, the villagers' income has been increased much more in recent years. They are very excited about the use of internet which helps them do business at home.

ACTIVITY 1.3

Do you have a similar problem to be solved? Please try to find a person or several of them who have the experiences of solving problems with the help of computer and internet. Ask them to tell their stories to you and share experiences with you.

From the above discussion and examples, we can see that information technology has already penetrated into our daily lives. Nowadays, information technology has become one common practical tool in production and our everyday life just like plow and hoe that we used to use. People can take advantage of information technology to not only raise product quality and improve production efficiency, but also make our life more colorful and more convenient. With the development of technology, information technology will be improved constantly according to users' needs and requirements, its operation and utilization will become much easier to learn. We, non-professionals of computer, needn't to learn complicated computer technology, it is enough for us to only master the basic computer operation skills and have the ability of utilizing application software.

Are you ready? OK! Let's start the basic computer operation skills.

WHAT HAVE YOU LEARNT SO FAR?

At the end of this topic, you should have:

1. **Knowledge about society development**
    - There are three stages of society development, Agricultural Society, Industrial Society and Information Society.
    - Each stage of society development has its own dominant tools and ways for production.
    - Information Technology (especially computer and network etc.) is the dominant tool and cooperative working is the dominant way for production in Information Society.

2. **Appreciated the value of Information Technology**

- Information Technology now is closely related to production and our daily life.
- Information Technology can greatly improve working efficiency as well as product output of crop farming, animal husbandry, forestry and fishery etc.
- Information Technology can make peoples' work and life much more convenient and easier.

3. **The awareness of learning Information Technology**

- As a peasant in the new century, we should learn to use the dominant tools, that are information technology, for agricultural production in Information Society.
- As non-professionals of computer, the need for us to learn very complicated technology is less, it is easy for us to learn the basic computer operation skills and application software.
- We hope, by using Information Technology, it will not only improve our income but also change the way of our life.

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TOPIC 2

BASIC COMPUTER CONCEPTS

MIND BOGGLER

Do you think the usage (use) of computer will have a major impact in (on) your life? If yes, provide examples of the positive impact/changes which may happen if you use a computer.

LEARNING OUTCOMES

By the end of the topic, you should be able to:

1. Differentiate data from information.
2. Define a system.
3. Cite the data processing cycle.
4. Determine input from output.
5. Define information technology.
6. Define the basic components of a computer.
7. Define and differentiate software from hardware.

INTRODUCTION

This topic defines and differentiates "**Data and Information**", defines what a system is, explains the data processing concepts and the importance of Information Technology.

The computer has made an immeasurable impact on our increasingly and fast-moving world. For this reason, it is important to understand the computer and what it does.

The succeeding sections introduces some basic terminologies and data processing concepts that could provide us with a framework for greater understanding and appreciation of one of the most popular technological innovations of our time, the **COMPUTER**.

2.1 INFORMATION SYSTEMS

2.1.1 Data vs Information

Let's take a look at Table 2.1 to compare between data and information.

Table 2.1: Data vs. Information

Data	Information
• Refers to the facts and figures relating to events that take place. • Refers to things "**known**". • A collection of independent raw facts, a collection of numbers, letters, symbols and any combinations of these that provide the necessary requirements of a system to achieve a result. • Examples: Name, age, gender and address.	• Data that is made meaningful based on the needs of the user through manipulation. • Data that are facts of knowledge acquired in any manner (in computer lingo, information means processed data). • Examples: o My name is Alython Earl Padua o Red is my favorite color o I am 12 years of age

Therefore, a computer can only **process** data and **create** new data. The data have to be interpreted to yield the **information**.

2.1.2 Types of Information

There are three types of information as shown in Figure 2.1.

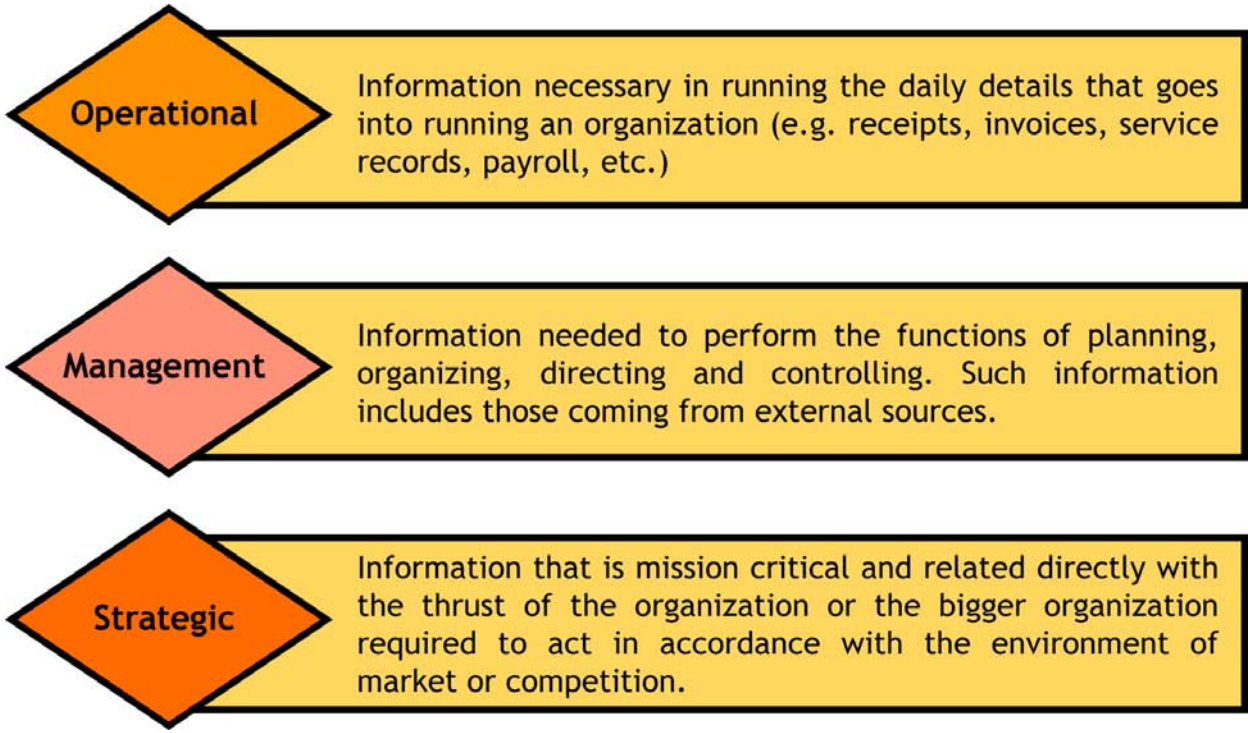


Figure 2.1: Types of information

2.1.3 What is a System?

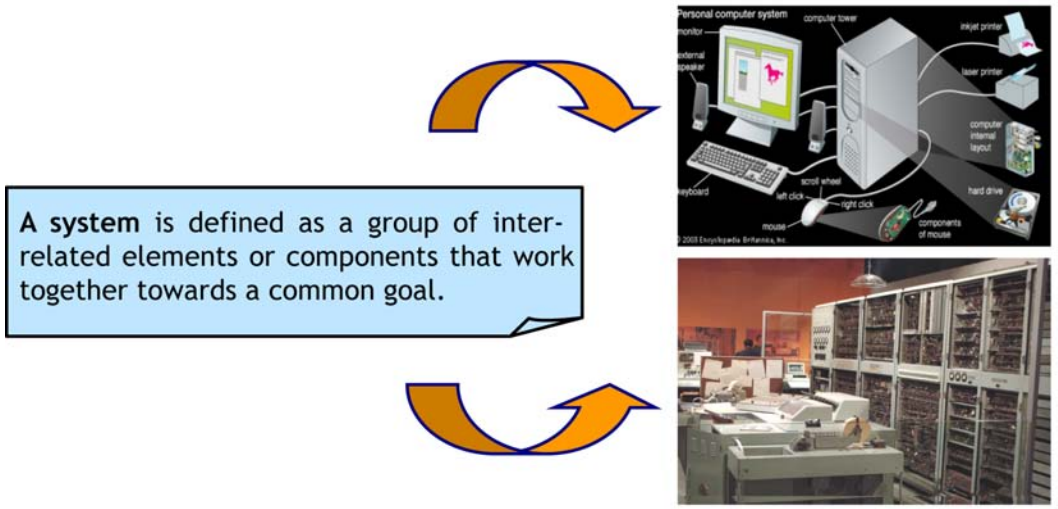


Figure 2.2: A system

Table 2.2 shows the definition of information system and application system.

Table 2.2: Definition of Information System and Application System

Information System	Application System
A group of related processes (manual or computerized) designed to generate information for the exclusive support of a major functional area of an organization. (For example: Personnel Management Information Systems, Logistics Management Information System, Financial Management Information Systems, etc.)	A group of related activities or processes designed to support a very specific function. (For example: Payroll System, Accounting System, etc.)

2.2 DATA PROCESSING CONCEPTS

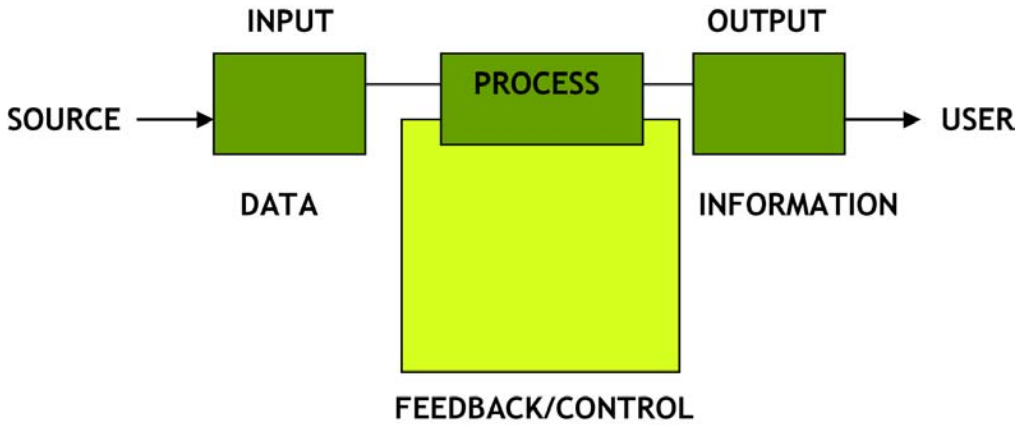


Figure 2.3: Data processing concept

2.2.1 The Input-Process-Output (I-P-O) Model

The Input-Process-Output model refers to a conceptual frame work whereby the input which is in the form of data or information will be processed and generated into an output which is in the form of useful information.

2.2.2 Data Processing Cycle

The flow of data from the moment it is recorded until the time it becomes usable piece of information is traced. The cycle takes into consideration what is actually done to the data in the process of transforming it into information.

Data processing cycle is classified into four major steps which are:

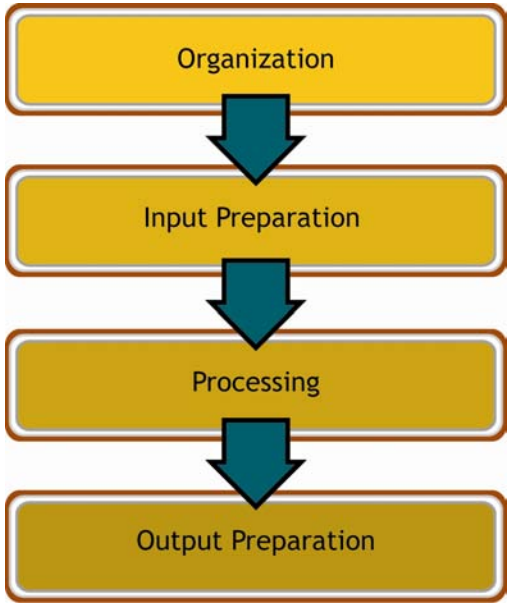


Figure 2.4: Steps of data processing cycle

(a) **Organization: Data Capture/Recording**
This operation refers to the initial capturing or recording and organizing of data.

For example:

Sales Order form which contains items ordered, quantities, price names of customers, delivery address, etc.

(b) **Input Preparation**
The basic function of this step is the recording of data form that permits its convenient handling in whatever system it is being used.

Input preparation includes three important manual steps namely organization, editing and verifying in order to minimize if not totally eliminate data error. (Please see Figure 2.5)

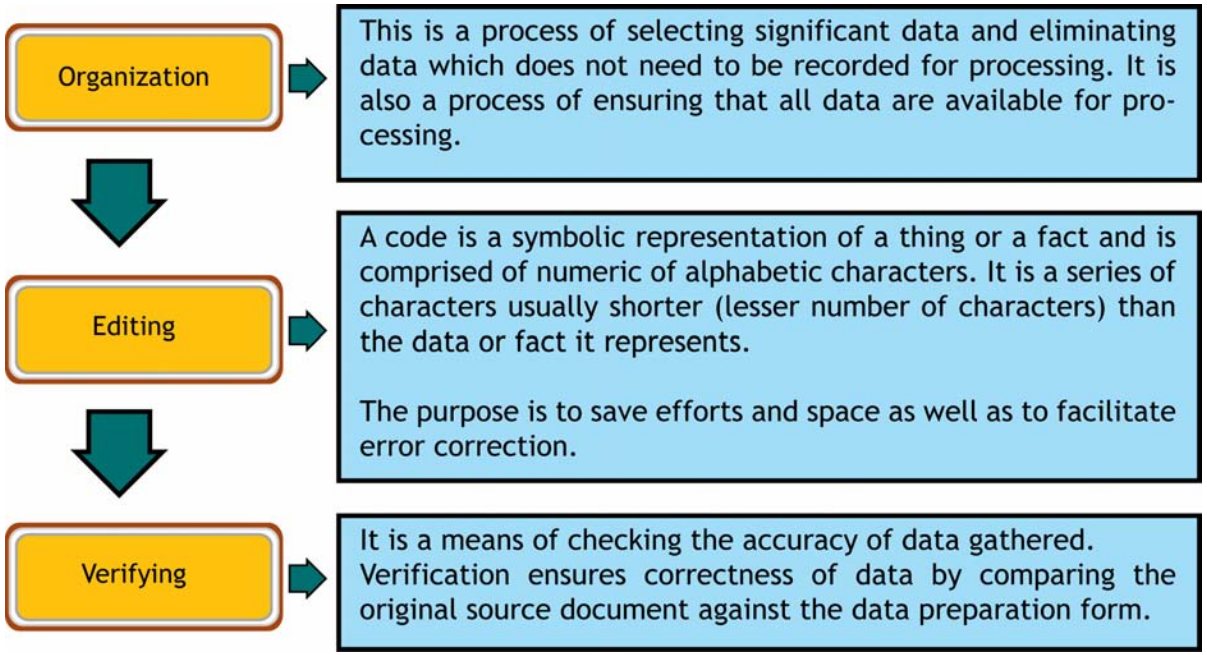


Figure 2.5: Steps of input preparation

(c) **Processing**

Processing is the third step in the data processing cycle and involves the actual conversion of data into useful and meaningful information. Conversion is accomplished by means of one or more of the four following processes as shown in Table 2.3.

Table 2.3: Process of Processing

Process	Explanation	Example
Classifying	This is the process of identifying one or more characteristics common to the data to be used as a means of systematically grouping data into classes. Data normally have common characteristics or attributes such as sex, age group, occupation, nationality, citizenship, school, type, etc.	Books may be classified by author, subject or publisher.
Sorting	This is the process of physically separating classified data and rearranging these data into a predetermined sequence, numerically or alphabetically in ascending or descending order.	Names may be arranged alphabetically
Calculating	This involves arithmetical processes such as addition, subtraction, multiplication or division.	An employee's weekly hours of work and his hourly rate of pay are multiplied to determine his weekly earnings.
Summarizing	This is the process of decreasing the level of details data. It generally involves listing of tabulating data and totaling each list.	Totaling the number of personnel by department.

(d) **Output Preparation**

The information generated are not useful unless provided to the right user. There are several ways how information is provided to the user as shown in Table 2.4.

Table 2.4: Ways of How Information is provided to the User

Ways	Explanation
Reproduction	Often in the act of processing, the information derived is not user readable, so it is necessarily that a final production of the information (in the form of a report) is made.
Communication	It has stated that information not given to the proper user is no information at all – it must be communicated to the user. Communication may be written or oral via mail or telephone lines.
Storing	Information may be stored where it was processed and/or may be stored albeit the time dimension of information, there is the necessity of keeping such information for future references and/or for input for other processes for the generation of other information.
Retrieving	When we consider storage of information, the manner by which it is to be recovered or retrieved should be considered. Storing provides ease of retrieving.

2.3 WHAT IS INFORMATION TECHNOLOGY (IT)?

Information technology (IT) is a broad-based technology needed to support information systems. IT supports activities involving the creation, storage manipulation and communication of information together with their related methods, management and applications. The core of IT is the microelectronic component i.e the microprocessor chip which processes data, information, images, sound, and graphics that has given birth to modern computers.

Today, computers are connected via telecommunication networks transcending even the natural borders. As such, IT has been taken simply as a combination of computers and communications.

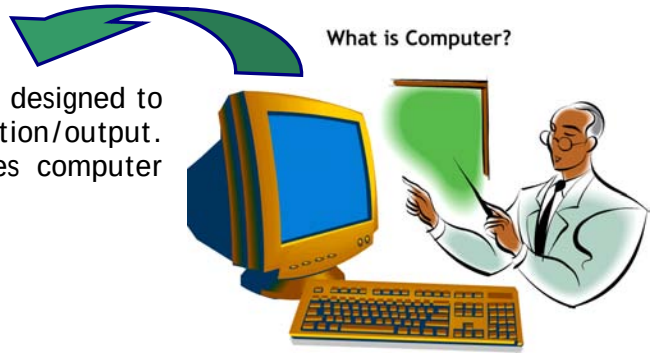
One of the main objectives of IT is to help people solve problems and to initiate creativity, thereby, making people work more effectively with the help of IT in their daily activities.

Figure 2.6: Information technology

2.4 BASIC COMPUTER CONCEPTS

This session defines a computer and describes its basic concepts. It also explains the functions of the people, software and hardware, differentiates software from hardware and describes the various function keys.

2.4.1 What is a Computer?



A computer is an electronic system or machine designed to process data and provides useful information/output. Below are examples of appliances which uses computer technology.

- A Microwave Oven
- Automatic Cash Dispensers (ATM)
- A Pocket Calculator
- Traffic Lights
- Washing Machine

Most times we refer to a computer as "pc" or personal computer. What are the components of a pc?

Figure 2.7(a) shows the components of a personal computer.

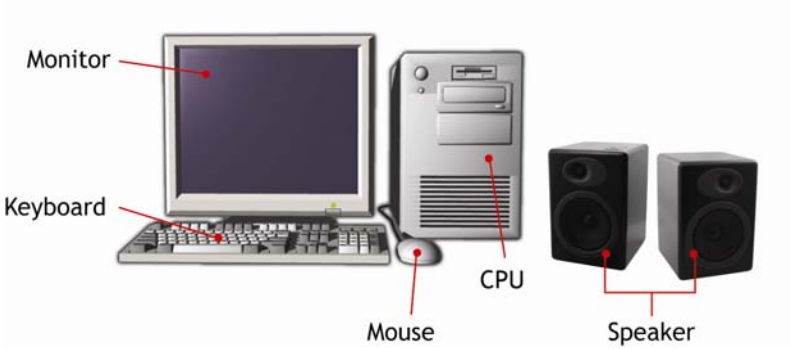


Figure 2.7(a): Components of a computer

Figure 2.7(b) shows the components of a computer within an Automated Teller Machine (ATM).

Figure 2.7(b): Components of a computer within ATM

2.4.2 Capabilities of Computer

Table 2.5 shows some of the capabilities of computer.

Table 2.5: Capabilities of Computer

Capabilities	Explanation
Speed	It has the ability to perform arithmetic and logical operations in a small fraction of a second.
Accurate	When given correct data, programme result virtually error-free.
Reliable	Can work for unlimited length of time with great accuracy and little human intervention.
Universal	Can solve any problem that can be expressed in mathematical terms.
Memory	It has the ability to handle large volume of repetitive tasks accurately over long periods of time.

2.4.3 Limitations of Computer

On the other hand, the limitations of a computer are:

(a) The computer functions only when data and the necessary instructions to process the information have been provided.

(b) It can detect but generally cannot correct an inaccurate entry by itself.

(c) It is subject to occasional breakdown or computer malfunctions because of power failure, computer failure, humidity, temperature, maintenance time, etc.

2.5 TYPES OF COMPUTER SYSTEMS

There are three types of computer systems which are:

(a) **Mainframe or Enterprise Computer –** also known as 'big iron' or 'dinosaur', is a high-performance computer used for large-scale computing purposes that require greater availability and security than a smaller-scale machine can offer.

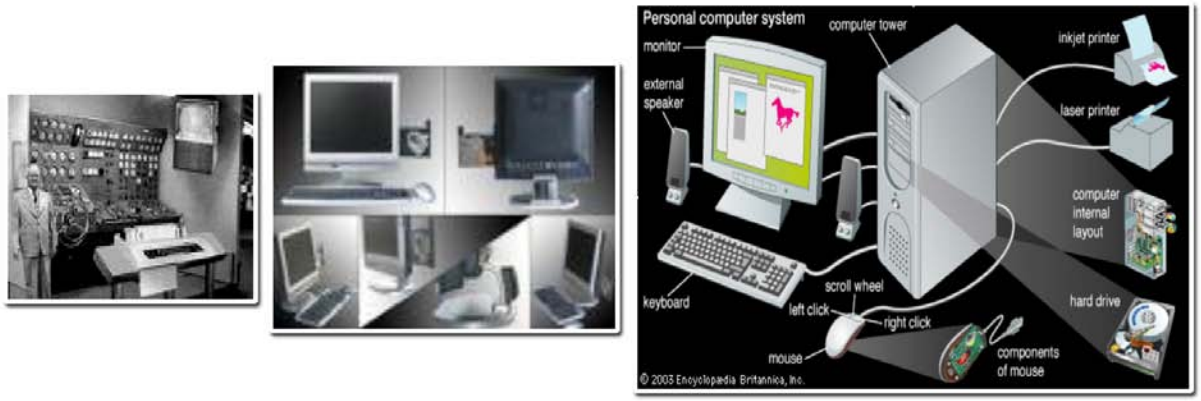


Figure 2.8: Mainframe or Enterprise computer

(b) **Minicomputer or Mid-range Computer –** a multi-user computer designed to meet the needs of a small company. It is less powerful than a mainframe but more powerful than a microcomputer.

Figure 2.9: Minicomputer or Mid-range computer

(c) **Microcomputer or Personal Computer –** a small computer which is usually used by one person at a time.

Figure 2.10: Microcomputer or personal computer

2.6 BASIC COMPONENTS OF A COMPUTER SYSTEM

Computer shares the same basic components regardless of its classification. We will only focus our attention to the personal computer (PCs). PCs are also known as **Desktop Computers** because most of its components can conveniently fit on the typical office desk.

Computers systems are made up of three basic components namely:

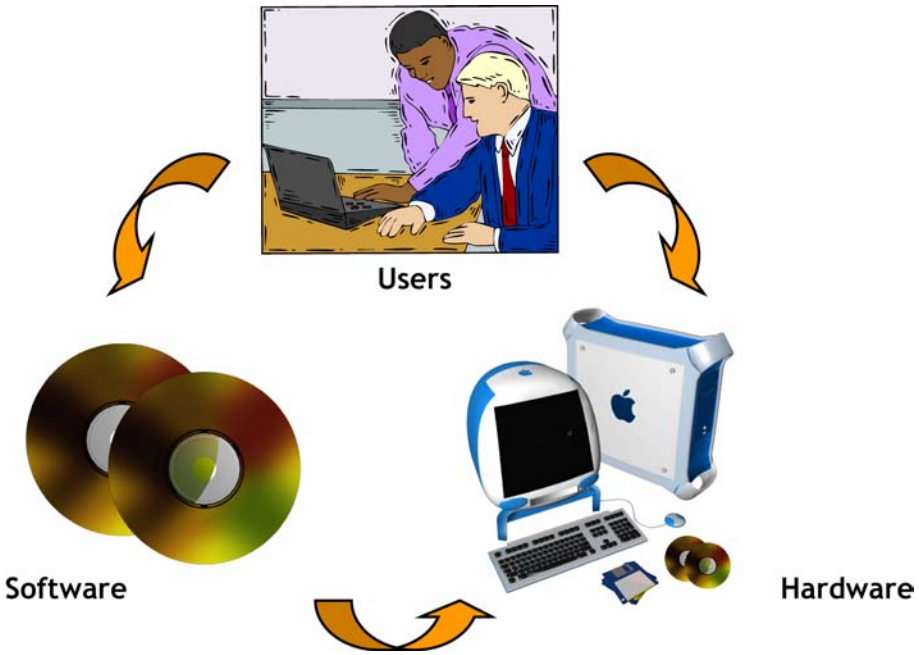


Figure 2.11: Basic components of computer system

(a) **Hardware**

It refers to the tangible (things you can touch) components of a computer system. Hardware components are further divided into three groups namely:

- **Input Devices** — Perform the two basic computing task: Issuing commands and entering data. **Data Entry** is define as the process of entering data into the computer memory and issuing commands that tell the processor how to work with the data.
- **Output Devices** — After the data has been transferred into the computer by the input device, the data will then be processed into information. The information must now be output in a form that is understood by human beings. For this purpose, output devices are used.
- **System Unit** — It is responsible for accepting and processing the data brought in by the input devices. It also responsible for passing the resulting information to the users via the output devices. The system unit is composed of integrated circuits designed to perform a particular task in coordination with other IC's.

These are some of the examples of hardware.

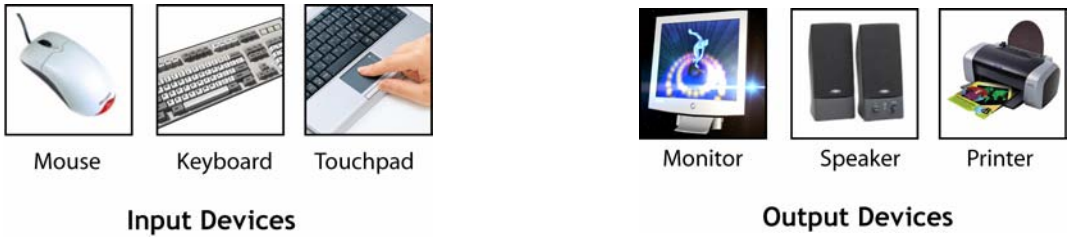


Figure 2.12: Input and Output Devices

(b) **Software**

It is also called a programme, consists of a series of instructions that tells the computer what to do and how to do it. There are two categories of software – system software (operating system) and application software. Table 2.6 lists two categories of software.

Table 2.6: Categories of Software

Operating System Software	Software Application
• Controls and manages the computer. It also enables the computer system to run application systems software. • For example: o Ms DOS o Windows 2000 o Windows NT o UNIX o MAC o Windows XP o Windows Vista	• Application software uses the operating system software and provides the real functionality of a computer. Applications include: • For example: o Word Processing (MS Word, WordPerfect, Ami…) o Spreadsheets (Lotus 123, MS Excel…) o Database (DBase, Fox Pro, Oracle…) o Presentation (MS PowerPoint, Persuasion…) o Internet Browsers (Netscape Navigator, MS Internet Explorer) o Games

(c) **Users**

People are the users of the computers.

Figure 2.13: Users

2.7 SPECIAL KEYS IN WRITING AND RUNNING PROGRAMMES

The computer keyboard has many special keys that allow us to input information for correct formatting and ease of use as can be referenced in Table 2.7 and Figure 2.14.

Table 2.7 shows some of the keys that are worth remembering for our own convenience.

Table 2.7: Special Keys in Writing and Running Programmes

Special Keys in Writing and Running Programs	
Escape Key (ESC)	Used to clear from the screen the line that has the cursor.
Tab Key	Performs a tab function similar to a typewriter.
Shift Key	Used to change lowercase letters to uppercase.
Backspace Key	Used to move the cursor to the left and erases one character for every keystroke.
Enter Key	Moves the cursor from the last character on one line to the first character of the next line. It signals the end of a line.
Caps lock Key	When pressed the first time, will cause letters to be in uppercase, and when pressed the second time, it will return the letters to lowercase.
Printscreen	When pressed, it will print an asterisk (*). If pressed simultaneously with the shift key, the computer will print all data on the screen.
Alternate Key (ALT)	Used with alpha typing keys to enter BASIC keywords, or when pressed simultaneously with other keys will execute a command.
Control Key (CTRL)	Is used with other keys to perform a command or function and is pressed simultaneously.
Home Key	Moves the cursor to the first character of the top line of the screen.
END Key	Moves the cursor to the last character of the line.
DELETE Key	Deletes the character at the cursor's position.
INSERT Key	Sets the keyboard to the insert mode.

Here are examples of function keys:

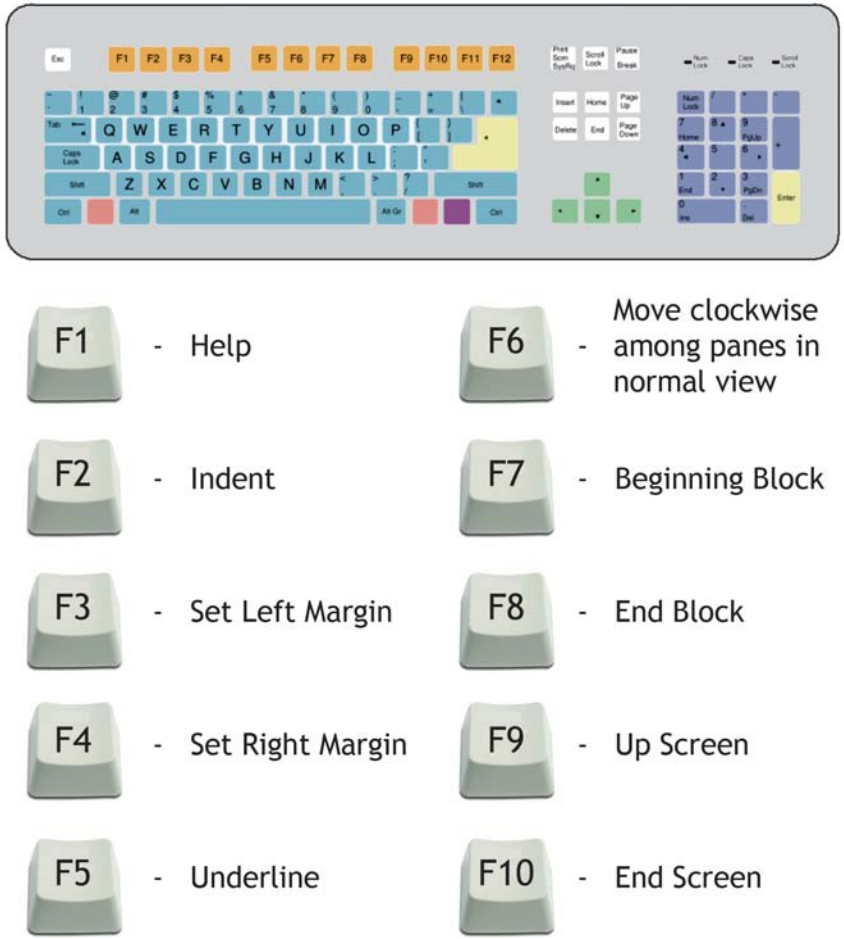


Figure 2.14: Function keys

2.8 HOW TO USE THE MOUSE

The mouse moves the pointer around the screen to quickly choose commands, click buttons and select text. This section gives basic information about using the mouse. If your mouse has more than one button, use left mouse button unless specifically told otherwise.

Mouse movement has two buttons, left and right button as shown in Figure 2.15.

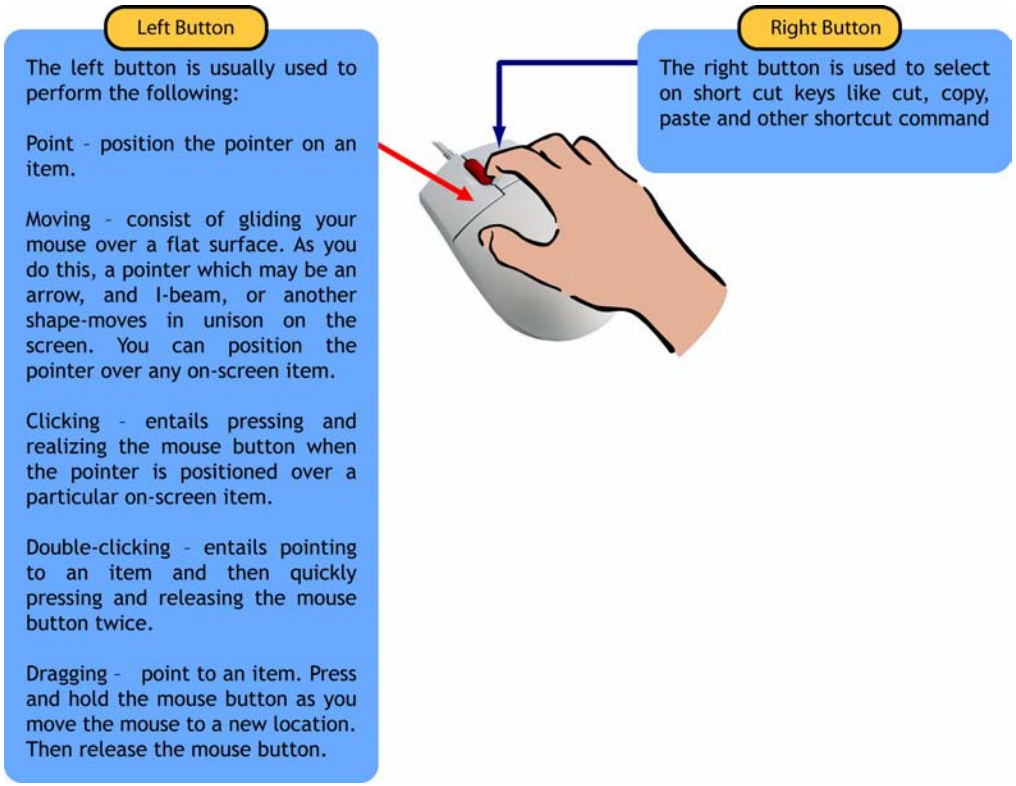


Figure 2.15: Mouse functions

ACTIVITY 2.1

- What is the significance of information technology in our society?
- When you hear the word computer, what first comes to your mind?
- Cite the data processing cycle.

ACTIVITY 2.2

- State the four (4) major steps of data processing cycle.
- State the three (3) important steps or procedures of input preparation.
- In output preparation, give at least two (2) ways how information is provided to the user.

ACTIVITY 2.3

1. It is the means of using communications, office, systems, methodologies and tools to generate information. _____
2. It is the means of using computers, data communications, office systems, methodologies and tools to generate information. _____
3. It refers to the process designed to support a very specific function. _____
4. In the storage of information, it is the manner by which it is to be recovered or retrieved should be considered. _____
5. It may be delivered in a written or oral via mail or telephone lines. _____
6. It is a symbolic representation of a thing or a fact and is comprised of numeric or alphabetic characters. _____

ACTIVITY 2.4

Circle True **(T)** or False **(F)** for the statements below.

1.	Hardware refers to the non-physical components. It is a set of programmed instructions stored in a storage medium.	**T**	**F**
2.	Software is being referred to as the physical component of a computer system.	**T**	**F**
3.	An electronic device or machine that designed to process and provides information or data is called computer.	**T**	**F**
4.	System unit is responsible for accepting and processing the data brought in by the input devices.	**T**	**F**
5.	Output device performs the two most basic computing task; issuing commands and entering data.	**T**	**F**
6.	Application software uses the operating system software and provides the real functionality of a computer.	**T**	**F**
7.	Operating system controls and manages the computer. It also enables the computer system to run application system software.	**T**	**F**
8.	Computer speaker is one of the examples of an input device.	**T**	**F**
9.	Without software, a computer would be a useful collection of electronic circuitry.	**T**	**F**
10.	The computer can easily modify hard copy. The most common hard copy output device is the video monitor.	**T**	**F**

ACTIVITY 2.5

1. How does hardware, software and users work together in order for the computer system to function?
2. Define what is an operating system? What is its role?

ACTIVITY 2.6

Identify the following items.

WHAT HAVE YOU LEARNT SO FAR?

Thus far, you have learnt:

- To identify the basic concepts and components as well as interfaces of a computer.
- To understand that computers have many capabilities and classifications as well as limitations.
- To cite the knowledge of software and hardware.
- To differentiate data from information.
- To define and understand a system as well as cite the data processing cycle.
- To explain the difference between input and output as well as its similarities.

SIGNIFICANT WORDS

Word	Definition
Information Technology	Refers to the totality of the means employed to systematically collect, process, store, present, and share information in support to intellectual activities.
Information System	Refers to a group of related processes (manual or computerized) designed to generate information for the exclusive support of a major functional area of an organization
Data	Refers to the facts and figures, relating to events that take place.
Memory	Refers to the ability to handle large volume of repetitive tasks accurately over long period of time.
Software	Refers to the non-physical components. It is a set of programmed instructions stored in a storage medium.

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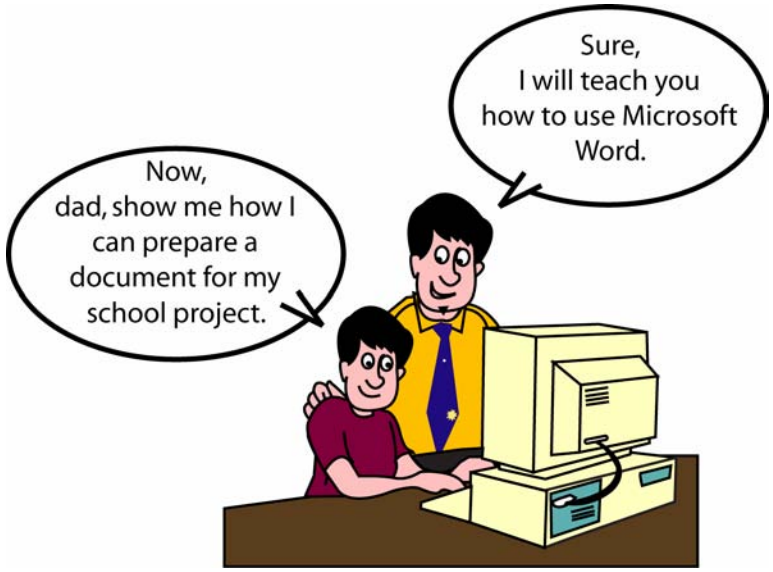
- White, Ron. How Computers Work. Ziff-Davis Press, 1993.
- Encarta Premium. (2007). Computer Fundamentals.
- World Book Encyclopedia. (2006) Computer.

TOPIC 3

WORD PROCESSING PROGRAM

MIND BOGGLER

I want to make a difference in communicating with friends such as sending a more presentable and clean-looking correspondence. How would I make it look like the way I see some colorful notes with matching graphics? Can I compose a letter that would get a second look? How will I emphasize a word or words to make my reader better understand what I mean?



LEARNING OUTCOMES

By the end of the topic, you should be able to:

1. Differentiate Word Processing from Microsoft Word (MS Word).
2. Identify MS Word screen and menus.
3. Access MS Word.
4. Create, save, retrieve, edit and print a document using MS Word.
5. Exit and close MS Word application.

INTRODUCTION

There are many ways to compose an idea in written form. And with the advent of computers, the use of word processing application has made it easier, facilitative and quick. While there are many popular business programme available in the market to compose, one commonly used is the MS Word Application. Let's see how this application will make a difference in coming up with more presentable and eye-catching output.

3.1 MICROSOFT WORD APPLICATION

The concept of Microsoft Word application can be seen in two programmes, namely:

Table 3.1: Word Processing and Microsoft Word

Word Processing	Microsoft Word
It is a program that helps you create any type of written communication letter, memo, report and many more. You can create, modify, store, retrieve and print part or all of a document.	It is one of the more widely used word processing program which allows processing of text faster and with much convenience.

3.1.1 Starting your Computer

How to start a computer? Follow these steps to start your computer.

Step 1:

Press the POWER button of your **Central Processing Unit** (**CPU**), and then turn on the Monitor.

Step 2:

Type in your appropriate

Username and

Password

If necessary (many application may not need the username and password)

and then press

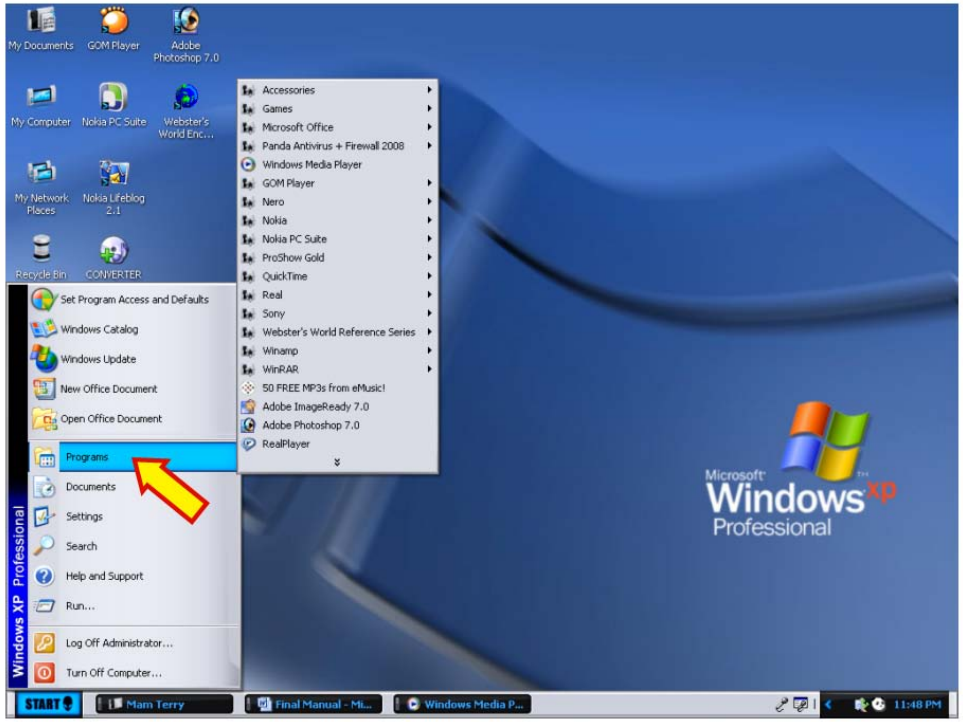
OK.

3.2 OPENING MICROSOFT WORD

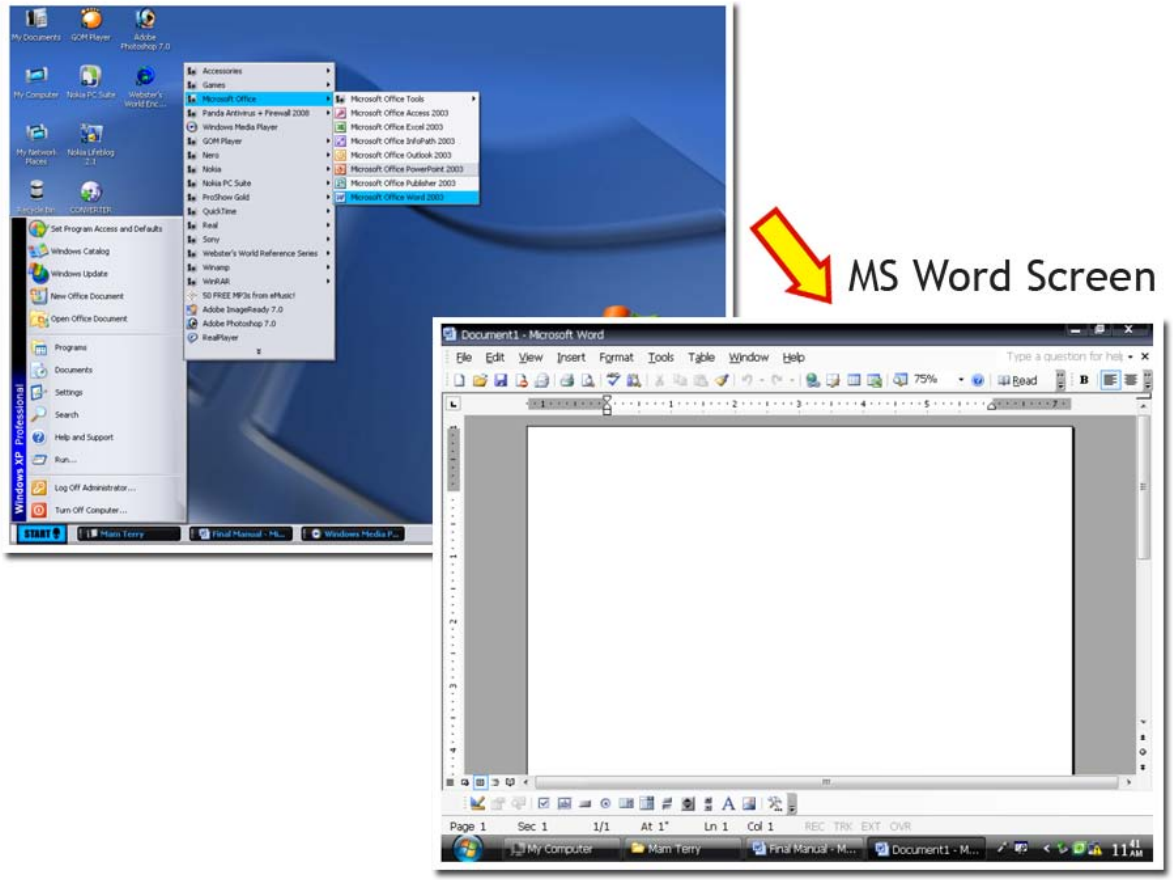
Word Processing is the most commonly used application for microcomputers and is often cited as the primary reason for purchasing a computer. This is the method by which documents are created, edited, formatted and printed using a computer.

To open a Microsoft word, follow the below mentioned steps.

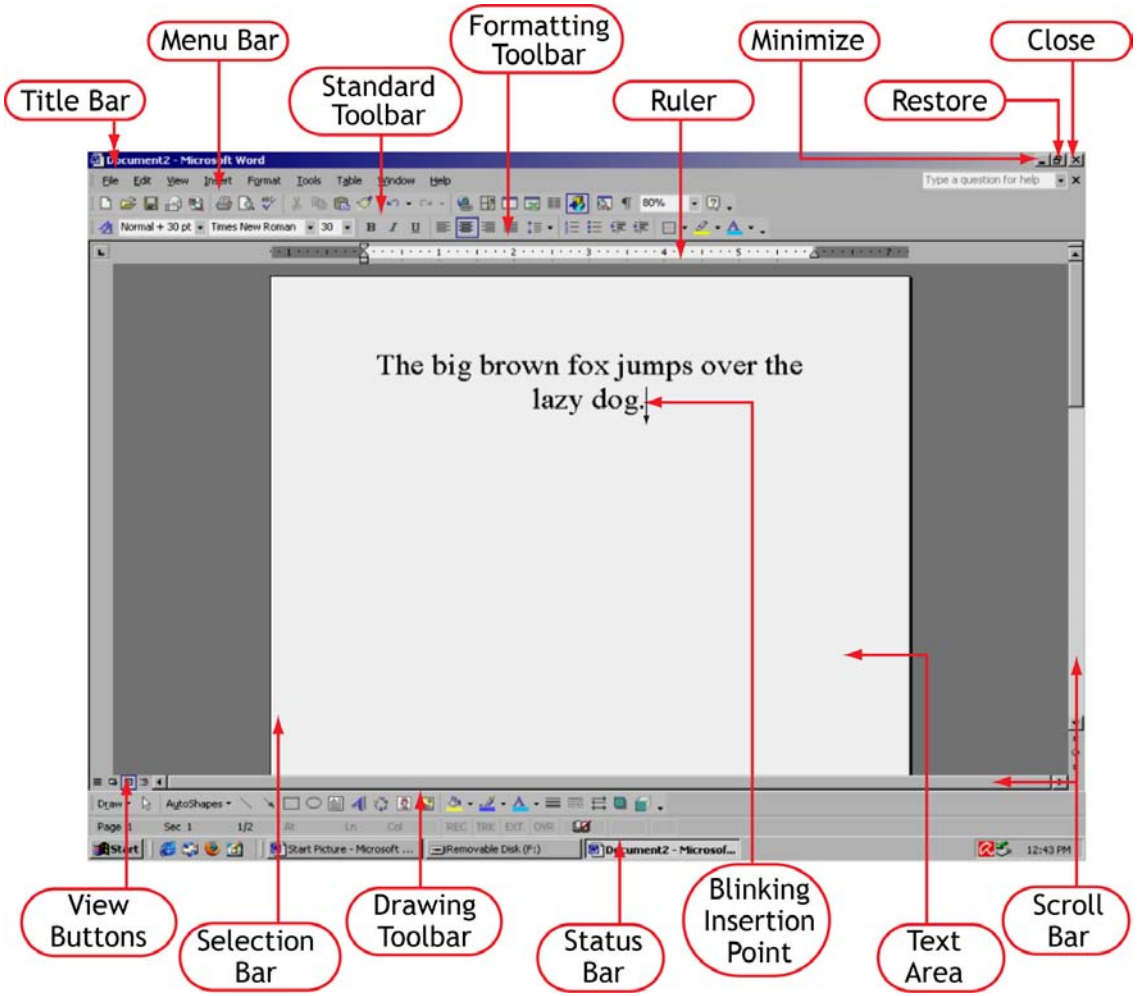
Step 1: Once you have properly logged in, click on the **Start** button. Move your mouse over **Programs,** the programs menu appears.



Step 2: Select **Microsoft Office (MS Office)** menu and then click **Microsoft Word**. You'll see a sample of MS Word as in the page. This is the most common type of MS Word basic document you'll see when you click on the MS Word programme



3.3 OVERVIEW OF THE MS WORD WINDOW



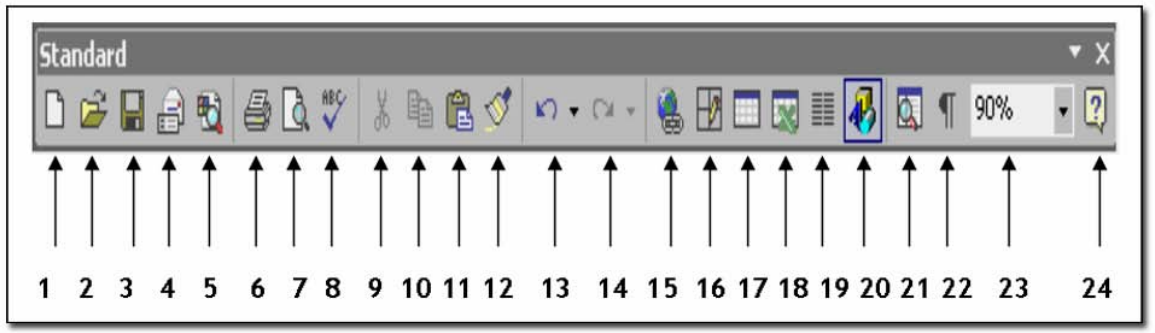
Title bar	Is at the very top of the screen. It contains the words Microsoft Word-(the name of the registered owner)-Document1. This means that you are in Microsoft Word and that Document1 is the active document that you are currently working on.
Menu bar	This contains several menu names. If you click on one of these menus, a drop down list of commands appears. Choosing a command instructs the program to perform a certain action.
Standard Toolbar	This contains a collection of buttons that speed up the most frequently used operation in MS Word.
Formatting Toolbar	Displays buttons you can use to change the appearance of your text. Using the Formatting Toolbar, you can specify different fonts, styles, point sizes, text alignments and many more.
Ruler	The ruler provides a simple, visual way to set margins and tabs in your active document.
Minimize Button	Clicking on this button shrinks the MS Word application window to an icon on the Taskbar, but leaves the program running and the document open.
Maximize/Restore Button	Clicking on this button switches the window between its maximum size and a smaller size, which will be the default size if it has not been changed.
View Buttons	Clicking on these buttons gives you different views of your document. Make sure you are in Normal View by clicking on the far left button.
Selection Bar	On the left-hand side of your screen from top to bottom, is an invisible "bar" called the selection bar. You click in this area of the screen when you want to select certain amounts of text.
Drawing Toolbar	This contains graphic buttons like for WordArt text, Clipart pictures, forms lines and fill color.

Status Bar	This displays information about your position in the active document and about certain option that have been chosen. It also displays information about selected commands.
Text Area	This is the empty space where you enter text and create any graphical material. In the text area, the mouse pointer is an I-beam, a vertical bar that looks like letter I.
Scroll Bar	The vertical or horizontal scroll bars are used to move around the document.
Blinking Insertion Point	Shows where text will be inserted when you type.

3.4 THE FREQUENTLY USED TOOLBARS

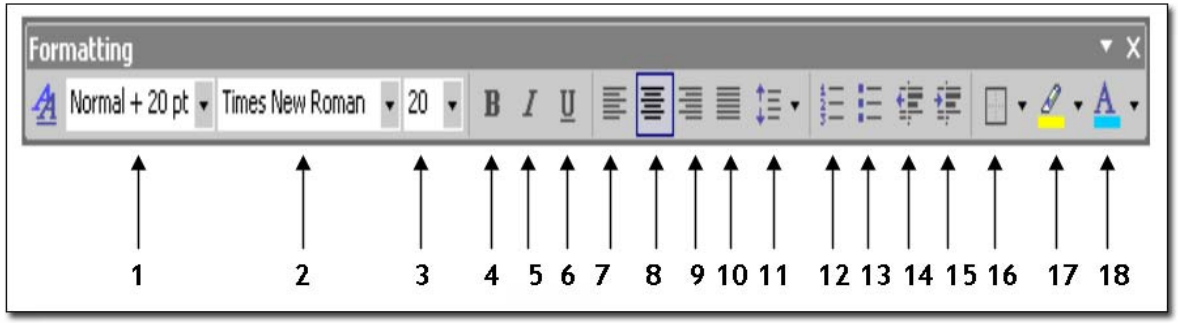
There are two types of toolbars which are namely the standard toolbar and the formatting toolbar. Let's look at each of them.

(a) **The Standard Toolbar –** contains commonly used shortcuts for save, print, cut among others.



1. New Blank Document
2. Open a saved file
3. Save
4. E-mail
5. Search text
6. Print current document
7. Print preview
8. Spelling and Grammar
9. Cut current selection
10. Copy current selection
11. Paste current selection
12. Format Painter
13. Undo
14. Redo
15. Insert Hyperlink
16. Tables
17. Insert Table
18. Insert Microsoft
19. Columns
20. Drawing
21. Document Map
22. Show/Hide
23. Zoom
24. Microsoft Word Help

(b) **The Formatting Toolbar –** contains instructions to enhance your object or your text.



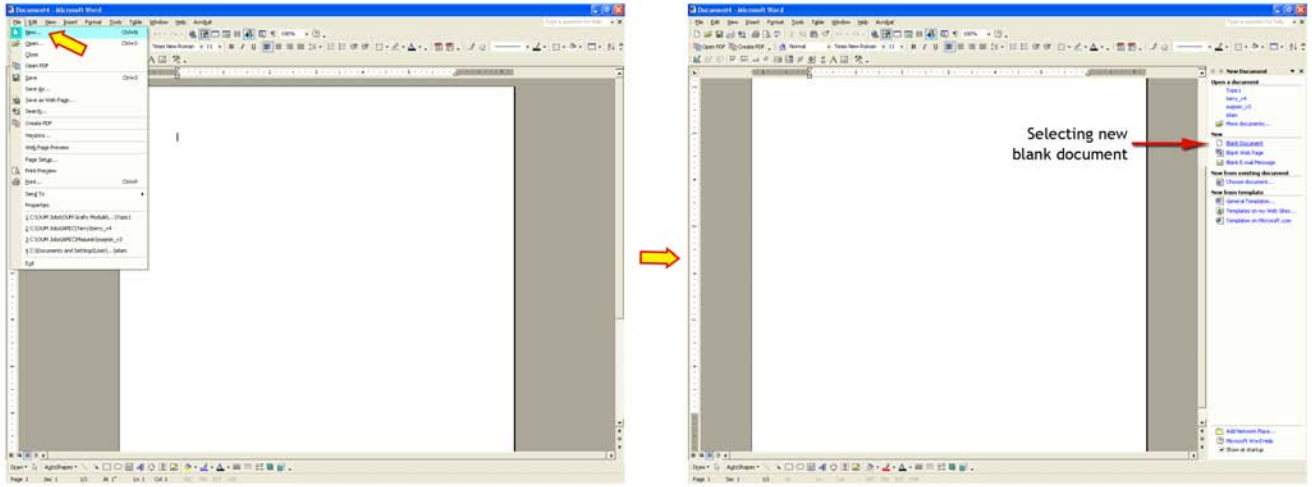
1. Style
2. Font
3. Font Size
4. Bold
5. Italic
6. Underline
7. Align Left
8. Center
9. Align Right
10. Justify
11. Line Spacing
12. Numbering
13. Bullets
14. Decrease Indent
15. Increase Indent
16. Boarder Style
17. Highlight
18. Font Color

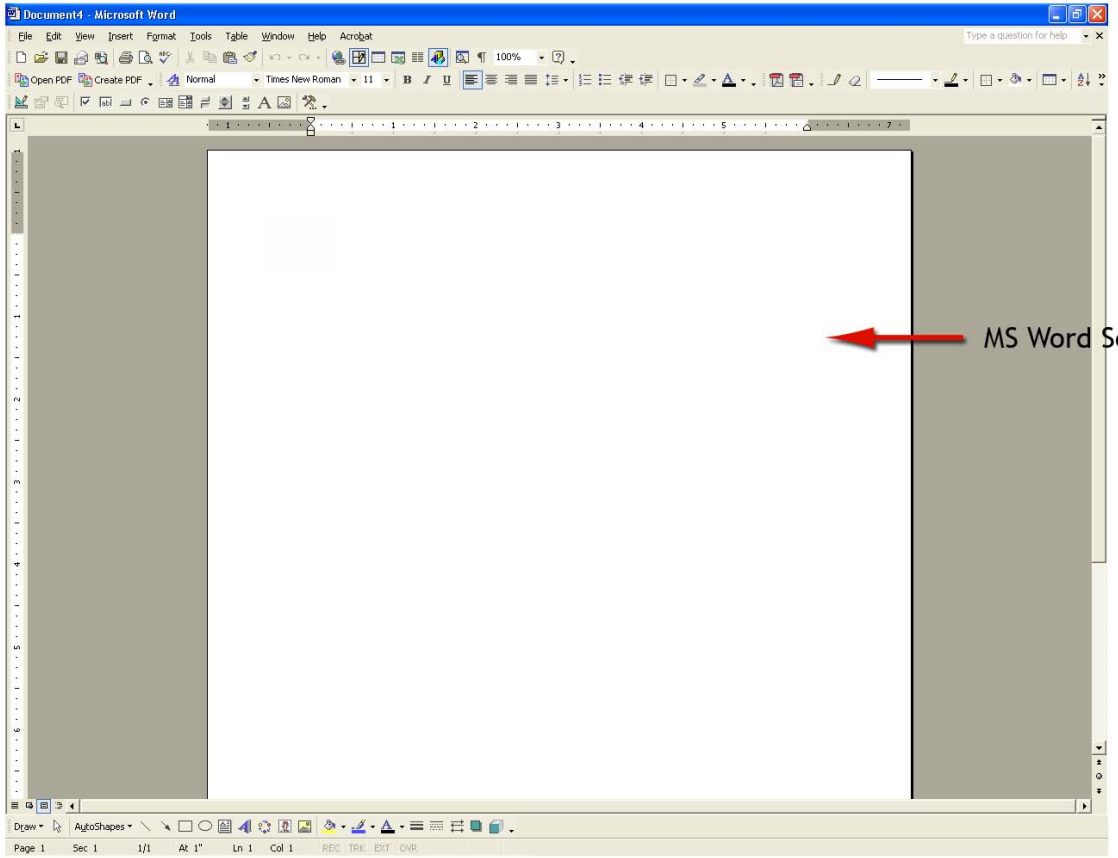
3.5 CREATING THE DOCUMENT

Now, we will learn step-by-step on how to create a document.

Step 1: Creating a Blank Document

1. Click on **File Menu**
2. Select **New**
3. On the window pane of New Document, select on **Blank Document**.
4. On the text area, start **typing** your document.

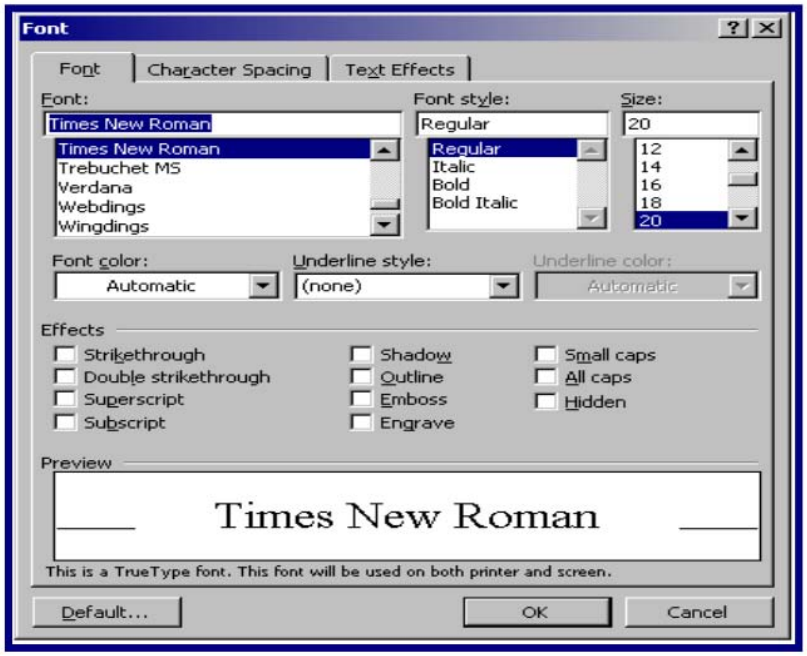




MS Word Screen

Step 2: Setting of Font Name, Size and Style

1. Go to **Format Menu**
2. Select **Font**
3. Choose desired Font Name (e.g. Times New Roman or Arial)
4. Choose desired Font Size and Style
5. Click **OK** button

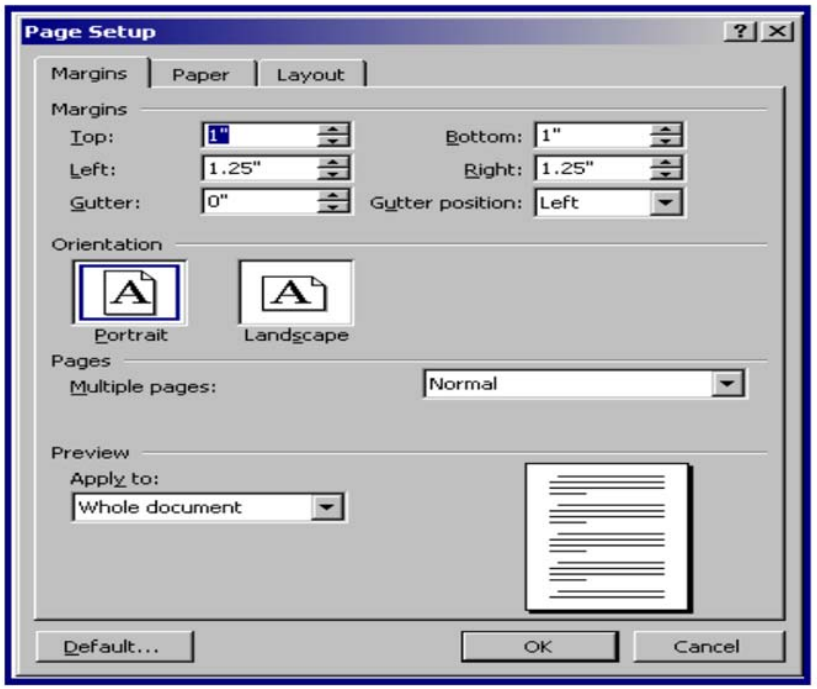


1. However, if only a specific text is required to be set to a different font, highlight the particular text by using the **SHIFT** key and appropriate arrow key simultaneously or its mouse equivalent before following the steps in setting the font name, size and style.
2. To cancel recent selection, click outside of your highlighted text or object.
3. Below are some of the common shortcuts for selection.

Word	—	Double click on the word.
Sentence	—	Press CTRL and click within the sentence.
Line	—	Click in the selection bar next to the line.
Multiple lines	—	Drag in the selection bar next to the lines.
Paragraph	—	Triple click on the paragraph or double click in the selection bar next to the paragraph.
Multiple Paragraphs	—	Drag in the selection bar next to the paragraph.
Document	—	Triple click in the selection bar or press CTRL-A.
Object	—	Click on the object.

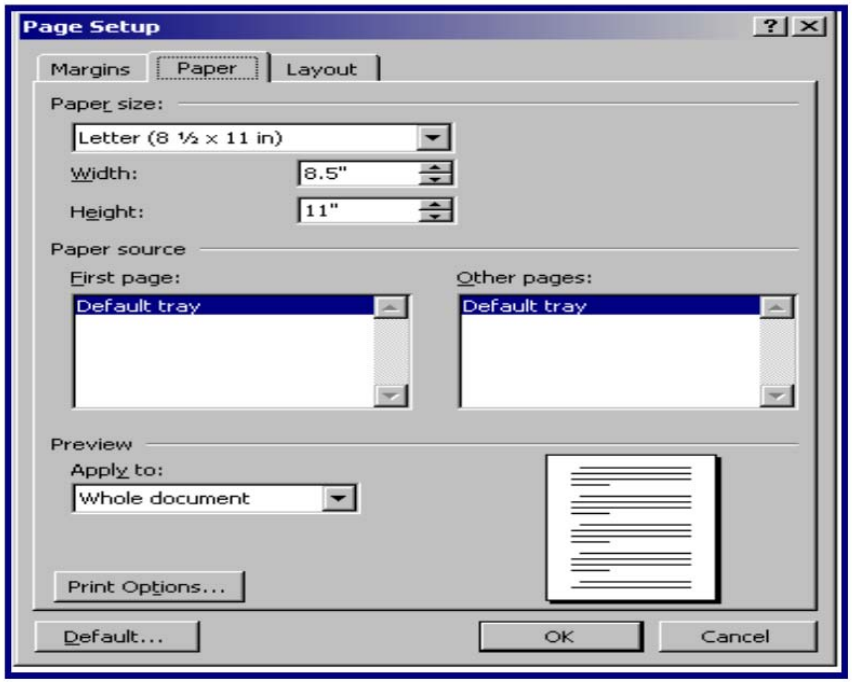
Step 3: Setting of Margins and Orientation

1. Go to **File Menu**
2. Select **Page Setup**
3. On the dialog box, click on the *Margin* tab and type in the margin width in inches for left, right, top and bottom margins. Also select desired paper orientation. Default is portrait.
4. Click **OK** button



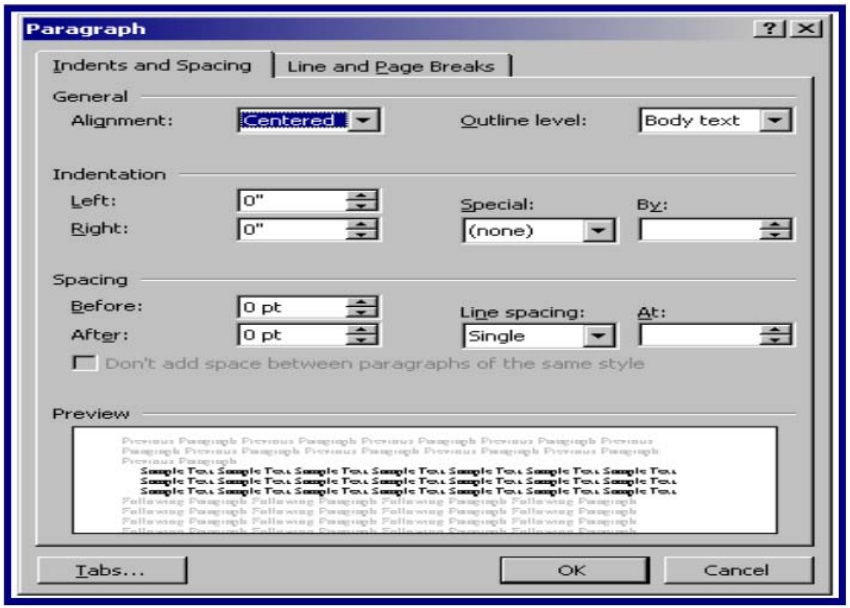
Step 4: Setting of Paper Size

1. Go to **File Menu**
2. Select Page Setup
3. On the dialog box, click on the *Paper* tab and select or type in the paper size. A short size paper shall have a paper width and height of 8 ½ by 11 inches respectively. A long size paper shall have an 8 ½ - by 13 inches dimensions.
4. Click **OK** button



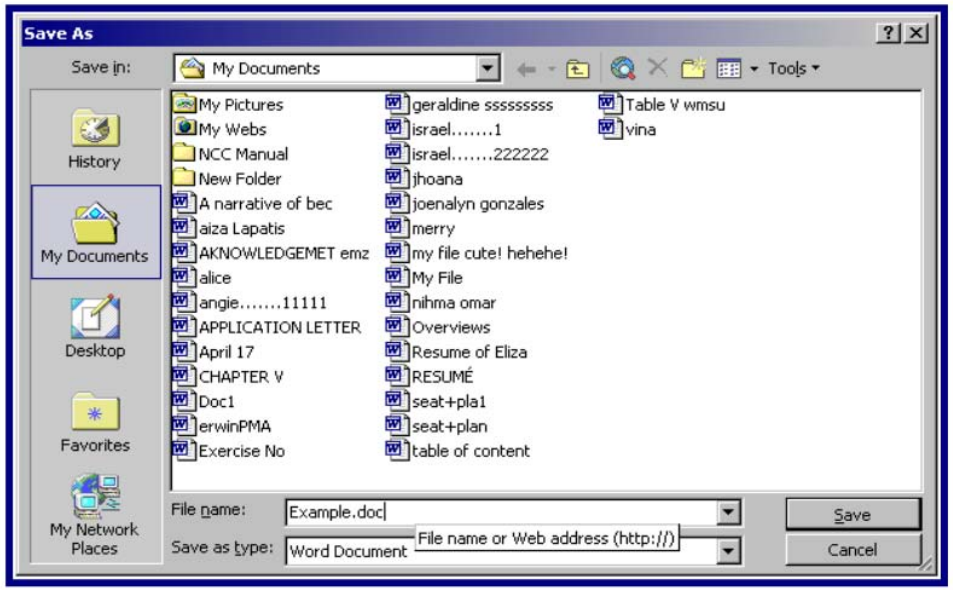
Step 5: Identifying the Paragraph and Setting of Line Spacing

1. Choose **Format Menu.**
2. Select **Paragraph** and **Indents and Spacing**.
3. Fill in the **Left, Right** box for indention. Select desired line spacing (e.g. single, double or 1.5 lines).
4. Click **OK** button.



Step 6: Saving the Document

1. Click on **Save** button on the Standard Toolbar or you can click on **File Menu**, then, select *Save.*
2. Type your filename in your chosen folder. Setting of Security passwords and other saving options are available in the Tools drop-down list.
3. Click **Save**.



3.6

SAVING AND OPENING FILES

The keyboard shortcut key **for saving a file** is **CTRL + S** for saving.

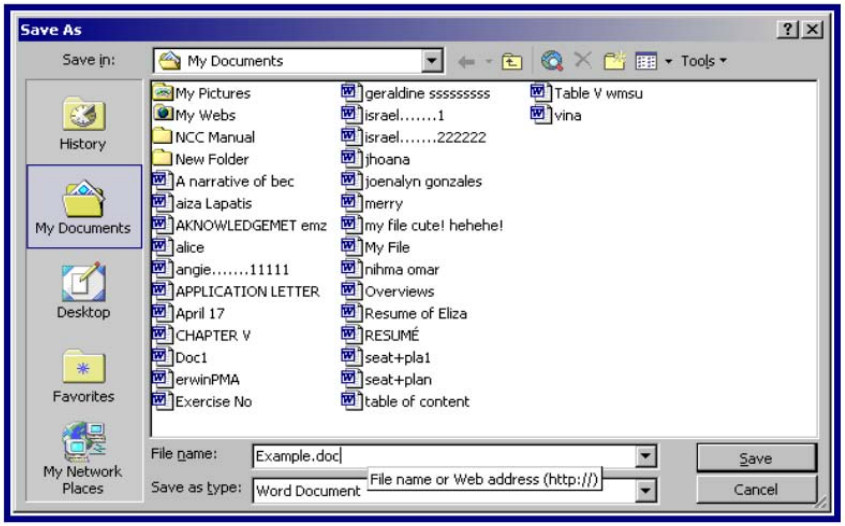
3.6.1 Opening a Saved File

1. Click on **File Menu**
2. Select **Open**
3. Select a file or you can type the filename under the folder where you have saved your document.

Click on *Open* button.

To filter or list only files of same extension name or document type, select on **Files of Type** the category of your document, for instance, Word Documents

Keyboard shortcut is **CTRL + O** for opening a file. A double click on the selected filename shall automatically open your document.

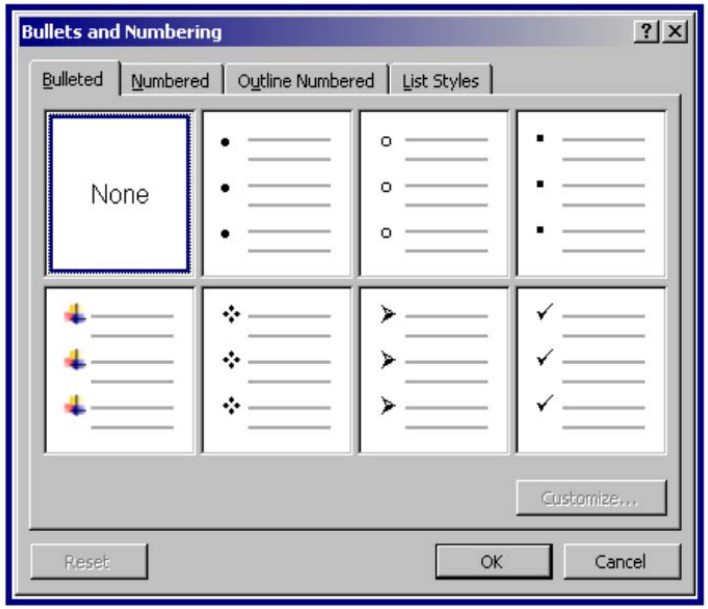


3.6.2 Adding of Bullets or Numbering

1. Select the desired paragraph or simply execute the next step first.
2. Click on **Format Menu**.
3. Select **Bullets** and **Numbering**.
4. On the dialog box, click on **Bulleted** or **Numbered** *tab.*
5. Select desired bullet or number format.

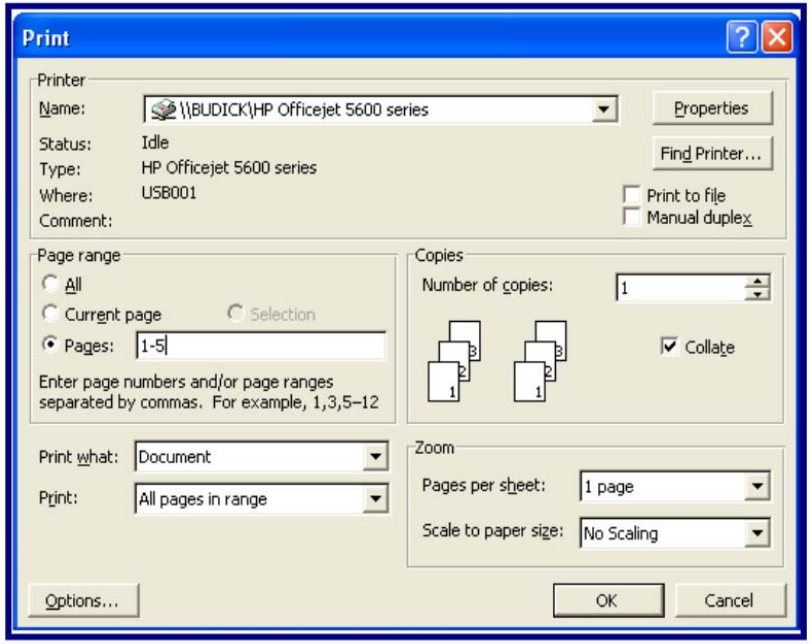
A keyboard shortcut key is to press (*) at the beginning of your paragraph, press Tab key and type your text.

An Enter key after your paragraph or line shall make your asterisk a bullet. For a numbered list, type 1, press Tab and then type your text. Press Enter key to display the next line.



3.6.3 How to Print a Document

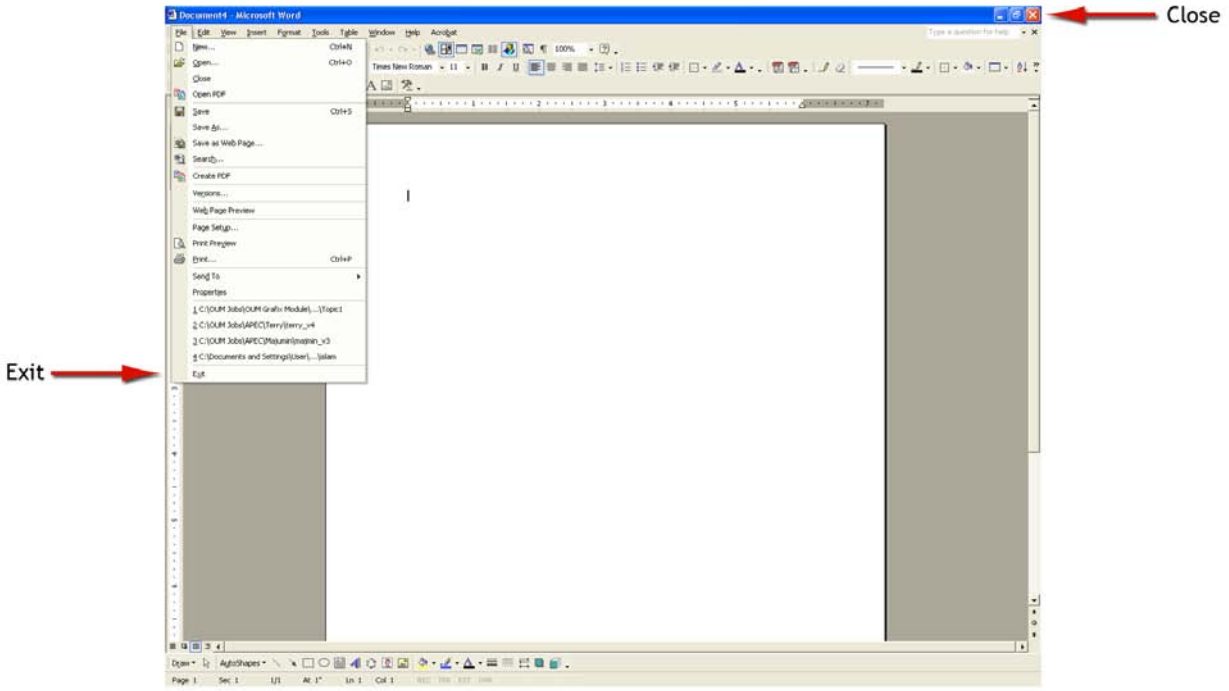
1. Go to **File Menu**
2. Then **Press Print**
3. Indicate your printing options:
4. Click **All** – if you want to print all pages.
5. Click **Current Page** – if you want to print a page where your cursor currently positioned.
6. Click **Pages** – if you want to print a particular page or pages.
7. Then press **OK**



3.7 CLOSING AND EXITING MS WORD

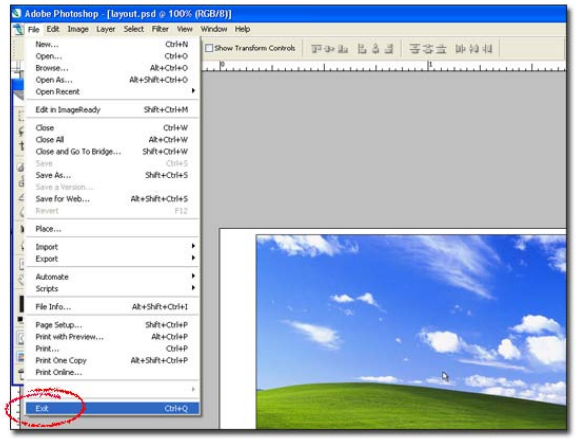
Here are the few tips to close and exit the MS Word:

1. Using your mouse, move over **File** menu.
2. Select **Exit** or click on the close button.



3.7.1 How to switch off the computer.

(a) Make sure you exit all the applications you've used.



(b) Click on the "Start" menu at the bottom of your left side of the screen. Then, click the **Turn Off** button to switch off your computer.

(c) Wait for a few seconds until **Window is shutting down** caption appears.

(d) Soon after, the computer shuts down itself.

ACTIVITY 3.1

My First Document

Objectives: To compose or create a simple document and to execute commands via the toolbar or from the pull-down menus.

Create and save a Document

1. Start Microsoft Word
2. Create the Document
3. Copy the text below
4. Save your document as “My first Document”

Hi Ron,

How are you, dear? It's been a while since we wrote, so I thought I'd drop you a line to bring you up to date with what's been happening here.

I suppose the most important thing is that Jane's job is more secure than we thought. At the beginning of the year, when she got the job, we thought it might only be for one semester, but we just found that she has a permanent contract of sorts. Obviously this is great, as it means we can relax a little. I still don't have what I really want work wise, but it will happen soon. You have to stay positive, don't you?

That’s all from me for now, dear. Hope to hear from you soon!

Yours sincerely,

Erica

ACTIVITY 3.2

Modifying/Edit an existing document

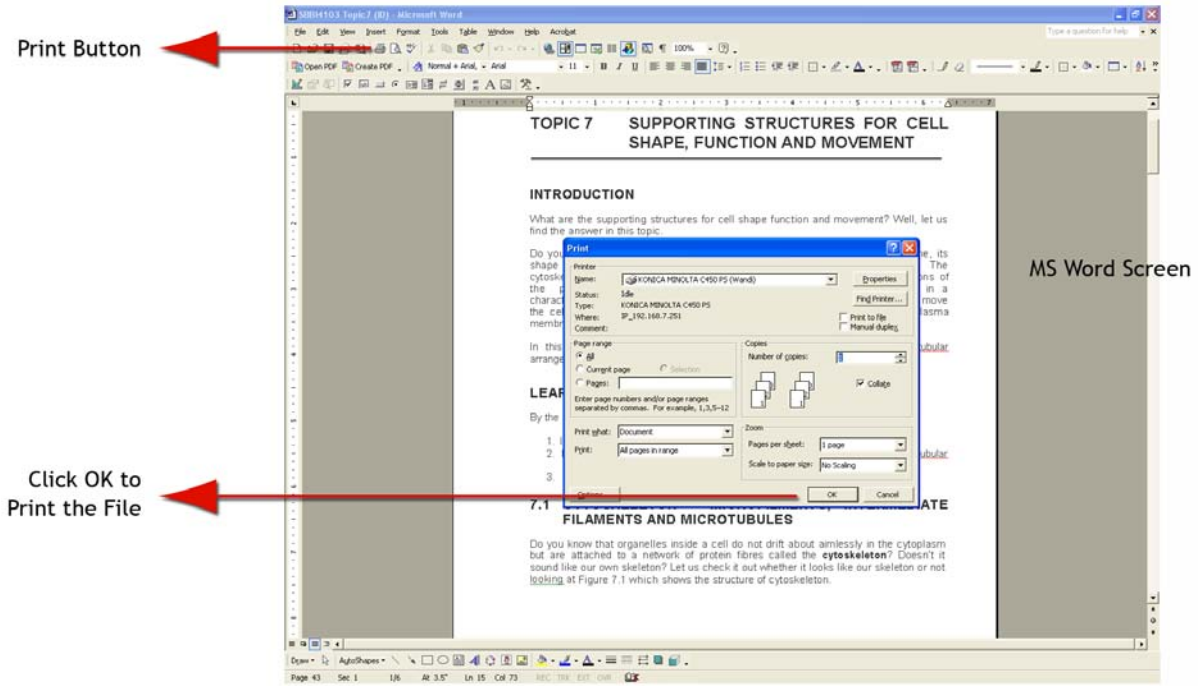
1. Open an existing document entitled ("My first Document")
2. Edit the following:
   - Change the font size of "*Hi Ron*" to "16", font type "Century Gothic", highlight in "**BOLD**"and **"Center"**.
   - Highlight the paragraph, then use **center alignment,** change the font size into "14" and font
   - Change the font type into "**Monotype Corsiva"**
   - Italize the name of the author
3. Insert a picture from clip art or from file.
4. Save the changes of your document.

ACTIVITY 3.3

Printing a Document

You can print the document with any of this methods:

1. Pull down File Menu. Click Print to display the dialog box. Click the OK command button to print the document.
2. Click the Print button on the toolbar to print the document immediately without displaying the print dialog box.



WHAT HAVE YOU LEARNT SO FAR?

At the end of this lesson, you have learnt:

- To operate from Microsoft Word, one of the popular word processing software.
- To cite the various menus and compose your own letter and confidently revise or edit and produce a hard copy of your output or several copies
- To open, close and exit your document from MS Word Application
- To explore the application without a mentor

SIGNIFICANT WORDS

Byte	A piece of computer information made up of eight bits.
CD-ROM	An acronym for Compact Disc Read-Only Memory
Control key	Seldom used modifier key on the Mac/PC.
Control panel	A program that allows you to change settings in a program or change the way a Mac looks and/or behaves
CPU	The Central Processing Unit. The processing chip that is the "brains" of a computer
Crash	A system malfunction in which the computer stops working and has to be restarted
Cursor	The pointer, usually arrow or cross shaped, which is controlled by the mouse.
Driver	A file on a computer which tells it how to communicate with an add-on piece of equipment (like a printer).
Ethernet	A protocol for fast communication and file transfer across a network.
Hard drive	A large capacity storage device made of multiple disks housed in a rigid case.
Memory	The temporary holding area where data is stored while it is being used or changed; the amount of RAM a computer has installed.
Menu	A list of program commands listed by topic
Menu bar	The horizontal bar across the top of the screen that lists the menus
Operating system	The system software that controls the computer.

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TOPIC 4

BASIC COMMUNICATION CONCEPTS

MIND BOGGLER

LEARNING OUTCOMES

By the end of this topic, you should be able to:

1. Define e-mail and its advantages.
2. Explain how to communicate via Internet by using available communication tools and softwares.

INTRODUCTION

Sometimes we hear the news mentioning "**surfing the net**" or perhaps teenagers are saying to their friends, "**send mail to me**", "**MSN with me**" and "**pass the website url to me**".What do all these statements actually mean? In what way can we mail a letter to friends and have it received in a second?

We may use the Internet to mail a letter and have it delivered in a very short time. The objective of this topic is to show that the Internet is a fast way to mail a letter, and we will quickly experience and understand the pleasure of using the Internet to communicate with anyone from all over the world.

The applications of computer in communication are highly related to the technology of 3C's, namely:

(a) Computer;

(b) Communication; and

(c) Consumer Electronics.

It is also highly relevant to our daily lives, such as exchanging information with others and passing the information to others. Figure 4.1 shows some of the products that relate to communication applications.

e-Commerce Website

Digital Video-On-Demand (VOD)

Mobile Communication Device

Voice Over Internet ProtocolVoIP (The Internet Phone)

Figure 4.1: Examples of communication applications

Among these applications, **"e-mail"** is one of the most commonly used services. The email server serves as the **"post-office"** on the Internet which substitutes for the traditional post office in the real world. The email account we use is similar to the address or mail box in the post office. You need to apply for a user's account before using the e-mailing system.

Compared to the traditional mail, e-mail possesses the following characteristics:

(a) Simple;

(b) Fast; and

(c) Money-saving.

But the drawback of an e-mail is that it cannot carry real goods, for example, packages, flowers, and etc.

In short, communicating via e-mail is the most convenient way especially with regards to time and ease of use. Also, this should not be a problem as nowadays, the ISPs (**Internet Service Providers**) are located everywhere; you will not miss any important message while you are out of town or traveling abroad.

By using an e-mail, it is sort of like another channel of communication, for sometimes, it is easier to express your emotions or discuss anything rather you do it in person.

4.1 WHAT IS AN E-MAIL?

E-mail (electronic mail) is a mail service through the Internet. In the real world, we send and receive mails via post office and we call it a **"traditional mail or snail mail"**. On the Internet, we use the web services to send and receive mail and we call it **"e-mail"**.

Figure 4.2 shows the traditional steps in writing a letter.

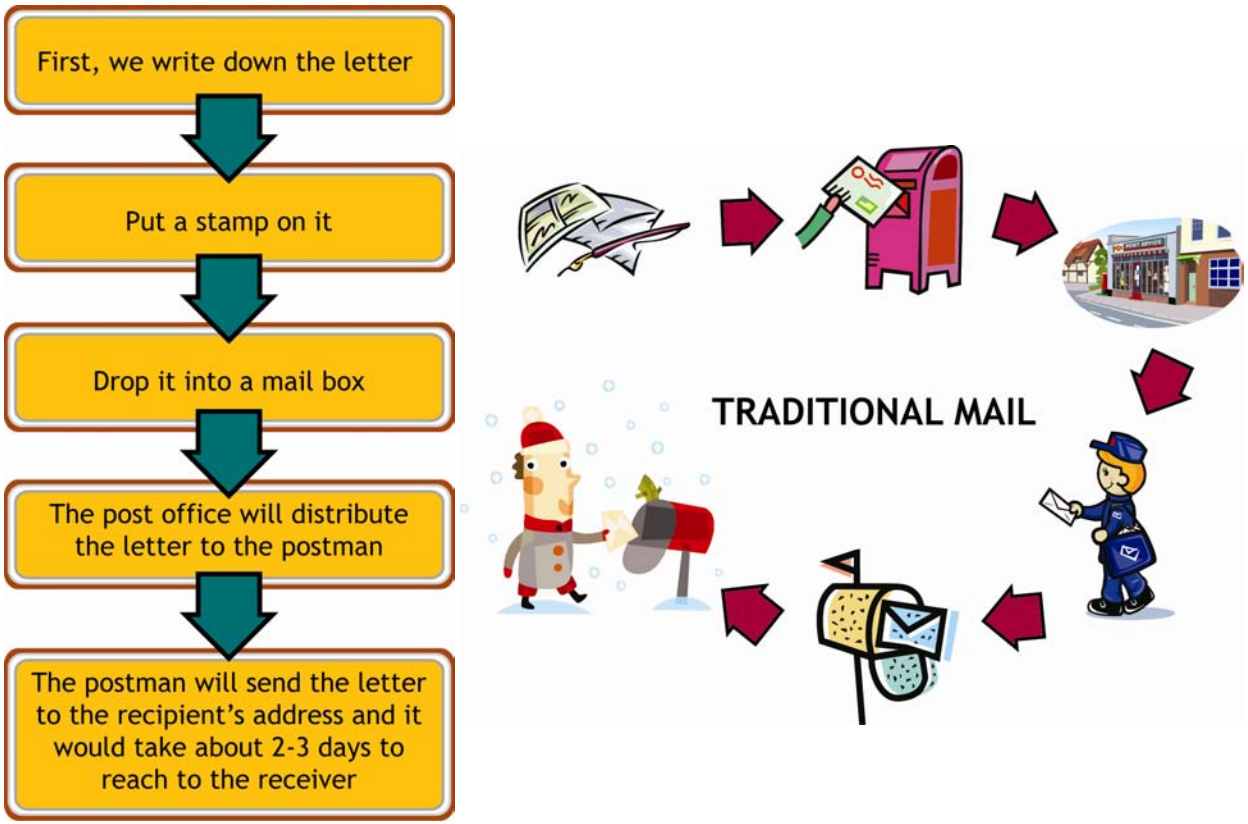

Figure 4.2: Steps in writing a letter

While the sequence of writing an e-mail is much faster than writing a letter. Figure 4.3 shows the step in writing an e-mail.

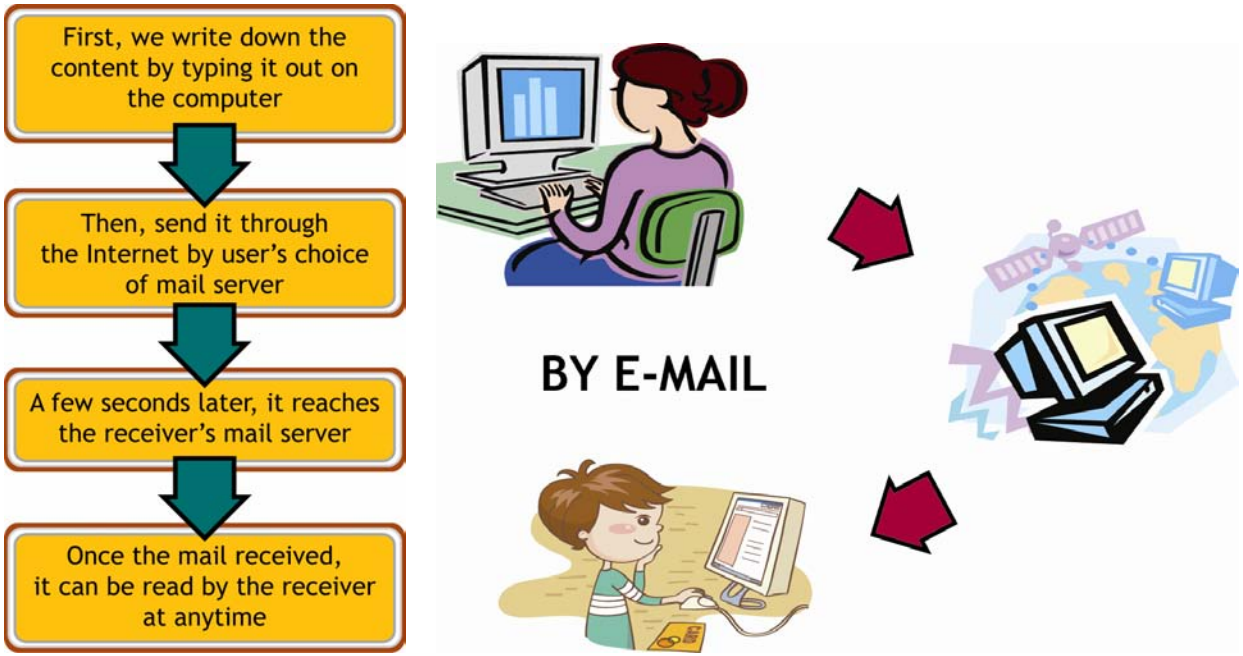

Figure 4.3: Step in writing an e-mail.

4.1.1 The Advantages of E-mail

The advantages of e-mail are shown in Table 4.1.

Table 4.1: The Advantages of E-mail

The Advantages of E-mail
(a) **Super fast** Even if you and the sender are worlds apart, the message will reach the recipient in a matter of seconds, while traditional mail takes about a couple of weeks (sometimes).
(b) **Low cost** There will be no extra charges besides local calls and transmission fees. Also, it is not necessary to buy paper, envelopes and stamps as messages are sent via the net.
(c) **Easy access** All you need is a computer and an Internet connection.
(d) **Unlimited time** You are able to e-mail, anytime at your convenience, 24 hours a day, 7 days a week as long as there is an Internet service provided.
(e) **Environmental conservation** Less paper will be used so fewer trees will be cut.
(f) **Content** You can also send an e-mail that contains voice message, photos, image files and songs. You also can save and re-use the same content for future need. Besides that, you can send the same message to many people at a time when you want to notify a bunch of friends about meetings, parties and such at once.

4.1.2 The Format of E-mail

The format of e-mail address is different from a website address. It comprises of the account of sender and receiver and the domain name of the mail servers, e.g.:

dreamer6@mail.seed.net.tw

The Receiver The Address

The meaning of the address is this: the server is called ("**mail**"), the company is called ("**seed**") and the ISP(Internet Service Providers) is ("**net**") in Taiwan ("**tw**"), the owner of the mail box is "**dreamer6**", @ means "**at**". The entire email address must be 100% correct so the mail can be delivered correctly to the desired place and person.

Figure 4.4: The format of e-mail

To communicate using an email, you need an email account. There are many providers of free email accounts and examples include Hotmail, Yahoo Mail and Google Mail (or Gmail for short). In this topic, we will take you through how to create a Gmail account.

4.1.3 How to create a Gmail Account?

What is Gmail?

Gmail is a free web-based e-mail program.

How to start using Gmail?

Open the web browser and type http://gmail.com. You can view the example in Figure 4.5. You will see the front page of Gmail similar to graphic in Figure 4.5

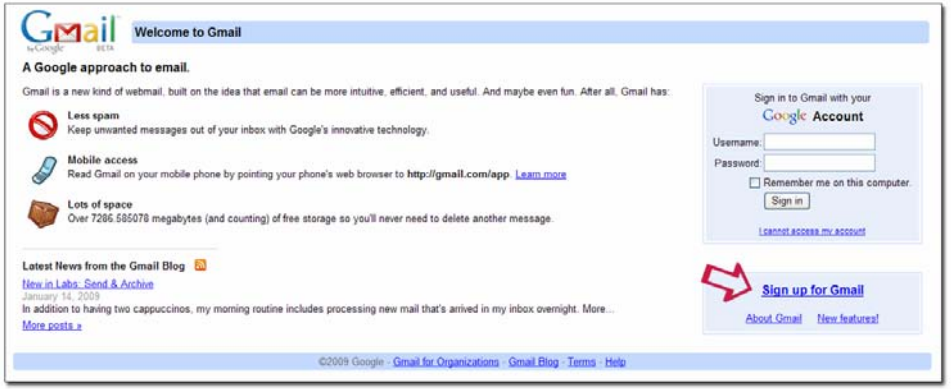

Figure 4.5: Front page of gmail.com

(a) Then, fill in the registration form as seen in Figure 4.6.

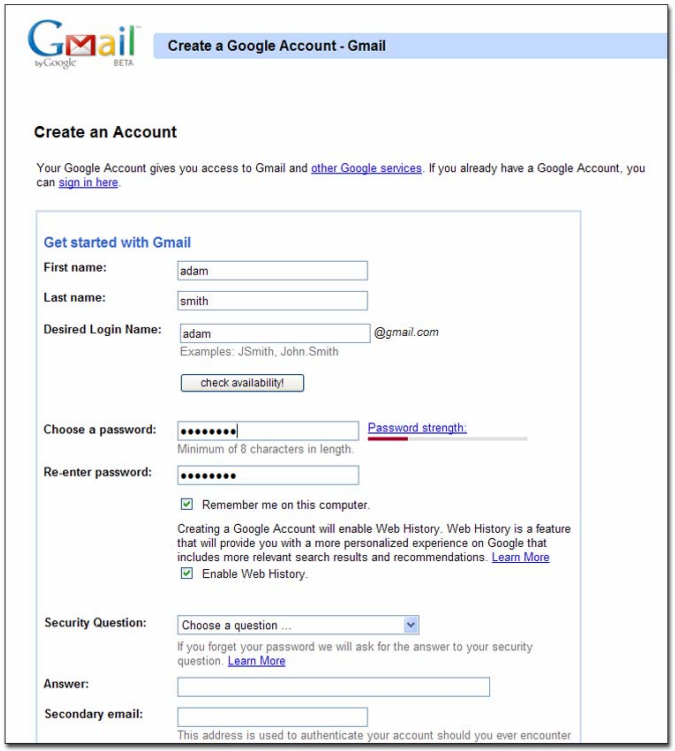

Figure 4.6: Gmail registration form

(b) Gmail provides the ability for you to check to see if your desired name is available. Something that you can easily remember. As seen in Figure 4.7.

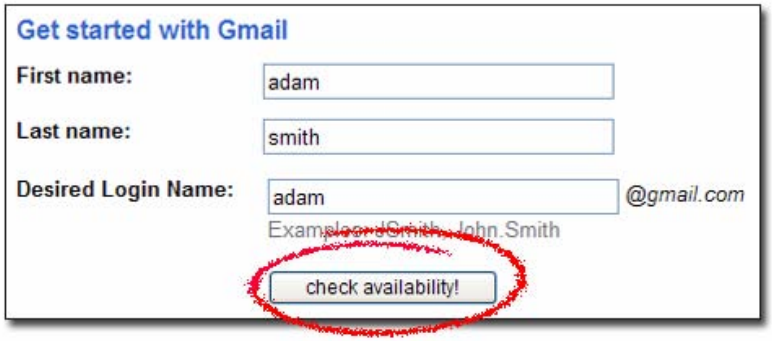

Figure 4.7: Name checking

(c) You will go through a security measure as the sign-up process requires you to enter the special characters. This makes sure that the actual person is signing –up for the Gmail account. This can be seen respectively in Figure 4.8 and Figure 4.9.

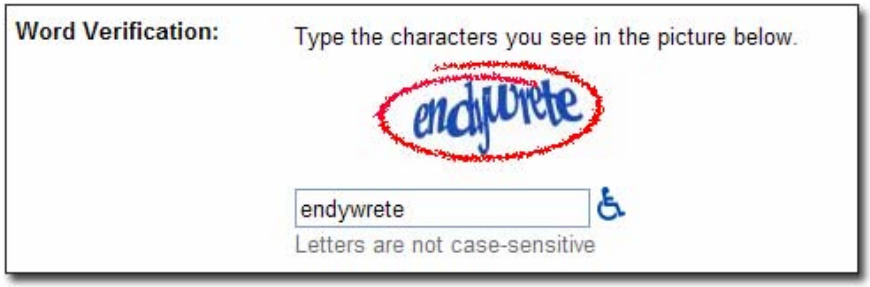

Figure 4.8: Confirmation letters

Figure 4.9: The image shows that you have successfully created a Gmail account

(d) Once the registration process is over, you'll get your gmail address. Please ensure you remember the address, together with your password.

4.1.4 How to send an e-mail?

(a) Click the Compose Mail link on your G-mail screen like in Figure 4.10.

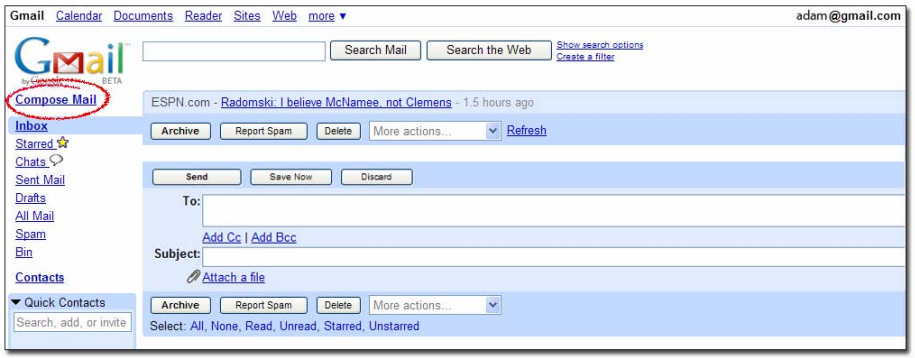

Figure 4.10: The image shows the "Compose Mail" is clicked

(b) Enter your recipient's e-mail address as in Figure 4.11.

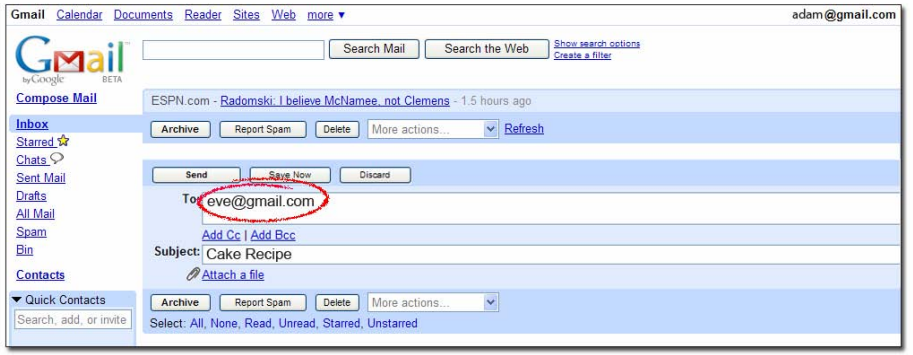

Figure 4.11: The image shows the recipient's e-mail address is typed in

(c) Enter your Subject for your message as in Figure 4.12.

Figure 4.12: The image shows the Subject is typed in

(d) Type your message as shown in Figure 4.13.

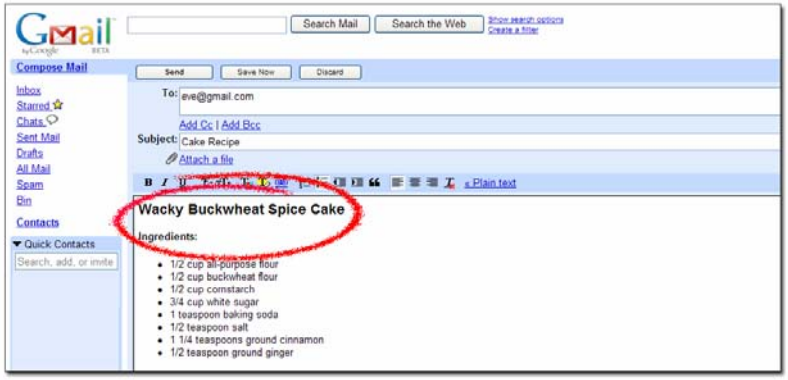

Figure 4.13: The image shows the message written

(e) Once done composing, you click on the "**Send**" button to send the message. An example of it is in Figure 4.14.

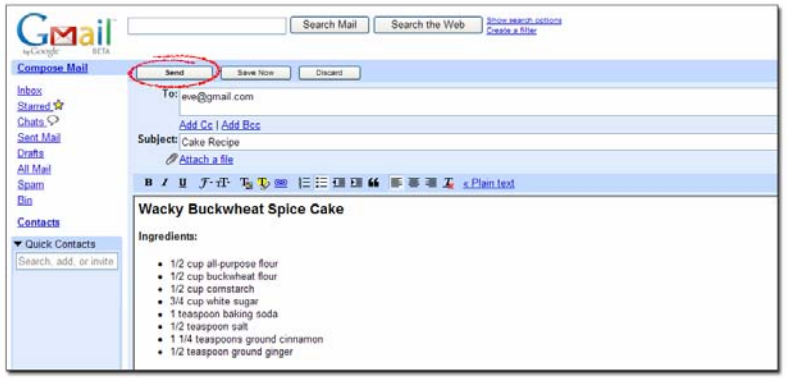

Figure 4.14: The image shows the Send button is clicked

4.1.5 How to read and reply message?

(a) Click on "**Inbox**" to view all your received e-mails as shown in Figure 4.15.

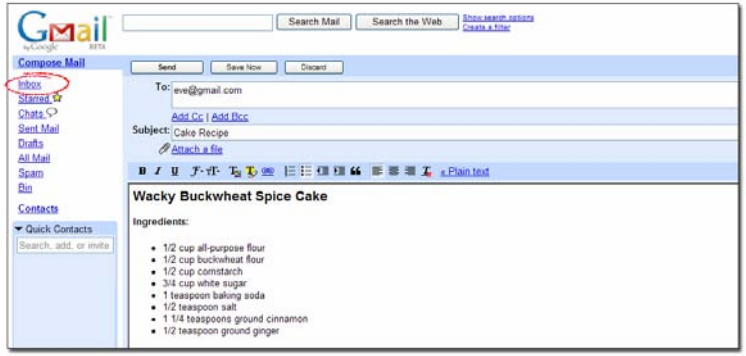

Figure 4.15: Display shows where to click on Inbox button

(b) Click the "**Reply"** button to send a reply to the sender of the message you have received. This can be viewed in Figure 4.16.

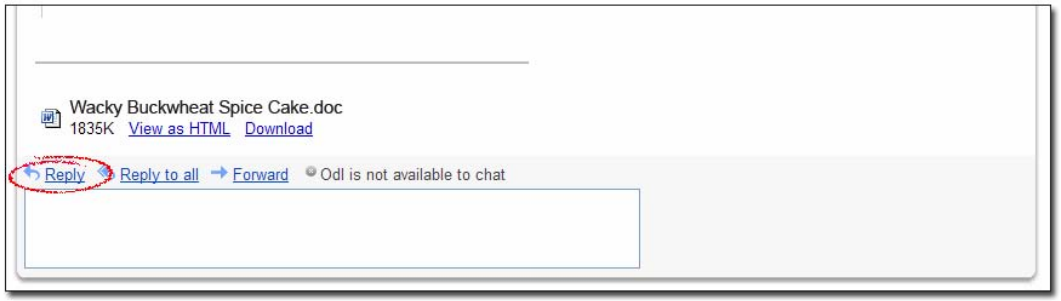

Figure 4.16: The image shows the "Reply" button is clicked.

4.1.6 How do you forward an e-mail?

(a) Choose the message you want to forward to another person, as seen in Figure 4.17.

Figure 4.17: The image shows the e-mail to be forwarded

(b) Next, click "**Forward**" button at the bottom of the message as in Figure 4.18.

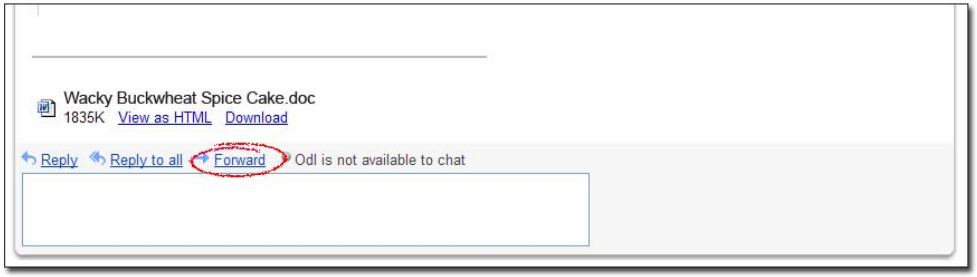

Figure 4.18: The image shows the "Forward" button is clicked

(c) Type in the e-mail address in the message that you would like to forward to. Refer to Figure 4.19.

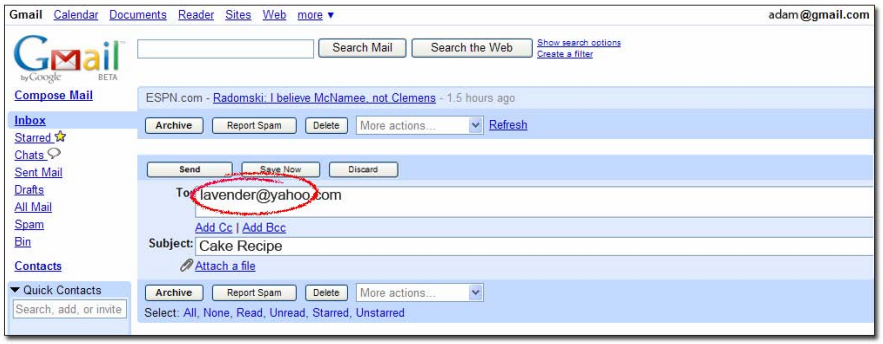

Figure 4.19: The image shows the e-mail that the message will be forwarded to

(d) Lastly, click the button "**Send**" as refers to Figure 4.20.

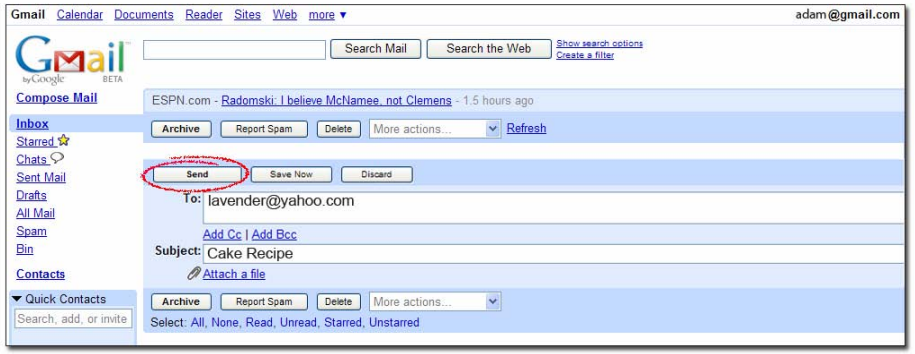

Figure 4.20: The image shows the Send button is clicked

4.1.7 How to attach a file to your e-mail?

(a) Click on "**Attach File**" button below the subject bar as shown in Figure 4.21.

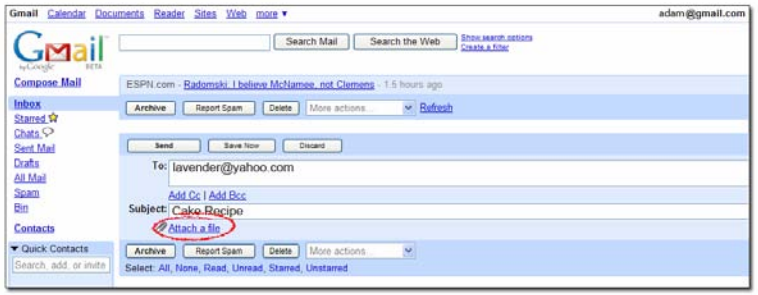

Figure 4.21: The image shows the Attach File button is clicked

(b) Find the file that you want to attach and click the "**Open**" button. A new window will open up (see Figure 4.22) where you will need to choose a file from. Depending on where your file is sitting, you'll need to scroll to the correct place and click it (maybe your desktop or in your documents folder or on your external drive). Once clicked, the file will be attached to your mail.

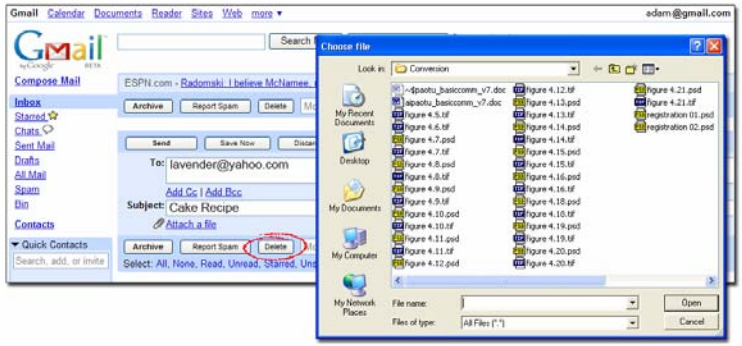

Figure 4.22: The image shows the "Delete" button is clicked

(c) Next, you type in the email address, the subject topic, and your desired message as shown in Figure 4.23.

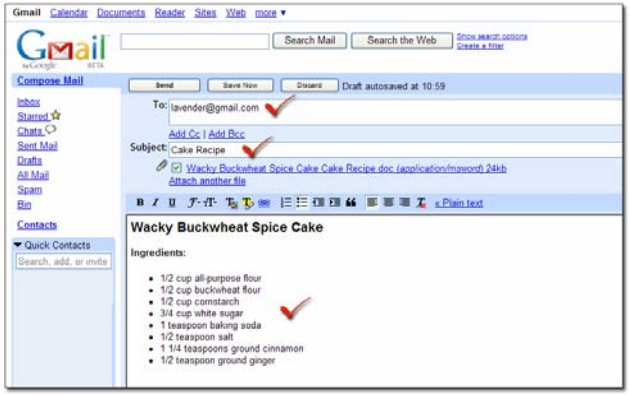

Figure 4.23: The image shows the email address, the subject topic, and your desired message are included in the e-mail

(d) Finally, you click on "Send" button to send your e-mail. Refer to Figure 4.24.

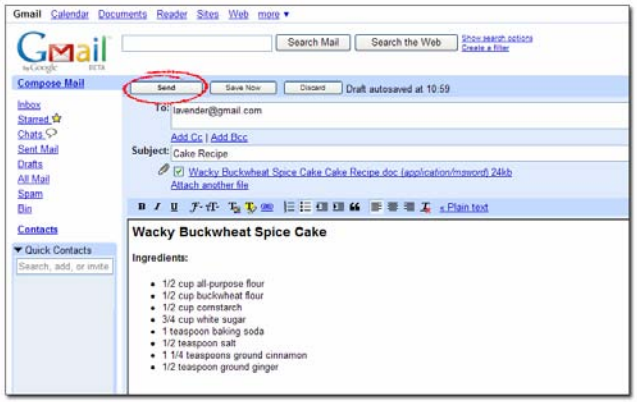

Figure 4.24: The image shows the 'Send" button is clicked

4.2 THINGS TO BE AWARE OF

(a) **Junk Mail**

Due to the convenience, low cost of email and no strict identification required, it is very common that e-mails are abused. This being said, some companies will make use of e-mails for commercial value. Consequently, email users find it very troublesome because they have to go through lots of e-mails at a time to filter the unnecessary ones. It is a waste of time and bandwidth of the Internet.

(b) **Virus Mail**

Some programs may even contain virus which may spread over to other e-mails. Sometimes you open an e-mail from a familiar sender and find out it has a virus in it which will harm your computer. Be careful especially when there is an attachment in the e-mail.

The harmful e-mail has file extensions such as .com, .exe, .cmd, .bat. These names imply that they are execution files and could be harmful mails.

(c) **Phishing (Fraud Mail)**

Some mails are from banks or famous portal sites which are actually impostors, acting as if they send you a confirmation letter or asking for your personal details and request you to click on a website link. This may lead to a fake address of a website where your ID and password will be stolen. Beware, as you may lose a huge amount of money or put your life at risk as your identity is recorded by these irresponsible people.

4.3 A BRIEF INTRODUCTION TO OTHER COMMUNICATION TOOLS AND SOFTWARES

4.3.1 MSN Messenger

MSN is a popular Instant Messaging program created by the Microsoft Network which enables the users to communicate with other users (Figure 4.25).

As long as you applied for a valid ID and password, you may chat with your friends. You just have to type out a message and the recipient will respond to you instantly. It is as if you are having a conversation with the other party in person. Users are able to send songs or share any files too.

Figure 4.5: MSN Messenger

4.3.2 Online Games

Online games are games that you can play alone or with your friends via the Internet. Usually, they are in forms of role-playing characters, strategic games or just mere fighting games. People can save their records and accumulate credits for continuous playing. Figure 4.26 shows an example of games available in Yahoo.com.

Figure 4.26: Online Games

4.3.3 FTP (File Transfer Protocol)

FTP is a way of exchanging files on the Internet. It can connect to different computer systems. When you see a website starts with "**ftp://**", it means that you can transfer files. If you would like to exchange files or data via FTP you will need to follow the procedures given. Figure 4.27 shows the example of FTP.

Mostly, users use FTP to download MP3 music, games or upload web pages. When we download files, it simply means we use the Internet to transfer the file from one computer to another. The address of FTP is similar to a website except it begins with "**ftp://"** while ordinary website begins with "**http://"** e.g.:

- http://www.mcps.edu.tw
- ftp://ms1.mcps.edu.tw

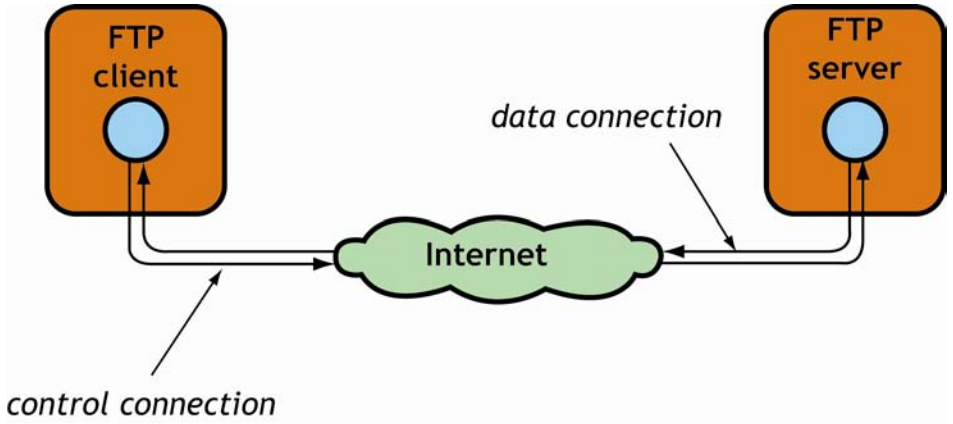

Figure 4.27: FTP (File Transfer Protocol)

If you have some music, movies, photos, games or novels in your computer that you would like to share with friends, you may send it to FTP server and set up an ID/password. Once your friend has this ID/password, he may enter the FTP server to download those files.

ACTIVITY 4.1

1. Apply for a free e-mail account from any major portal site, e.g.:
   - www.hotmail.com
   - www.google.com
   - www.yahoo.com

2. Make sure yourself (Anna) and your friend (Debbie) each possesses a valid e-mail account.

   Anna is going to invite Debbie to come for a party. Please send an email from Anna to Debbie by putting in the following content:

Sender: Anna
Receiver: Debbie
Subject: Gathering notice

Content of mail

Dear Debbie,
Will meet you coming Sunday at community center.
Be sure to come!

Love,
Anna

WHAT HAVE YOU LEARNT SO FAR?

At the end of this topic, you have learnt:

- E-mail is a mail service through the Internet;
- There are five advantages of e-mail such as it is super fast, cheap, easily accessible, always available, environmentally friendly and the content can contain voice messages, photos, etc; and
- We can communicate via Internet by using MSN messenger, online games and exchanging files using File Transfer Protocol (FTP).

SIGNIFICANT WORDS

Word	Definition
E-mail address	A string of characters to identify a user, so that the user is able to receive Internet mails.
Forward mail	Send a received letter to a new receiver by email and the content may remain unchanged or modified.
Video-on-Demand (VOD)	Select video or other multimedia data by user's preference and need.
Voice over Internet Protocol (VoIP)	VoIP services convert the voice into a digital signal that travels over the Internet. It is a technology that allows you to make voice calls using a broadband Internet connection instead of a regular (or analog) phone line. Internet phone gateway can be used to connect traditional phone set to Internet and connecting two distanced phone systems to make phone call via Internet.
Internet Service Provider (ISP)	A company or an organization to provide connection to the Internet for users, with a great amount of investment in equipments and communications facilities and steadily build up a bandwidth and allocate it to end-users by charging fees.

Word	Definition
MP3	MPEG-1 Audio Layer 3, more commonly referred to as MP3, is a digital audio encoding format using a form of loss data compression. It is a common audio format for consumer audio storage, as well as a de facto standard encoding for the transfer and playback of music on digital audio players.
Re:	Appears in front of mail subject which stands for "replied" mail. Usually automatically added by the system.
Fw:	Appears in front of mail subject which stands for "forwarded" mail. Usually automatically added by the system.
Cc:(carbon copy)	A mail is simultaneously sent to more than one person, and the receiver may clearly know who else is getting this mail.
Bcc:(blind carbon copy)	Send mail to more than one person but the receiver won't be able to know who else gets it.
Attached	Files are attached to a mail. Be aware of size of the file. An over-sized attachment may over-load other people's mail box or is rejected by system.

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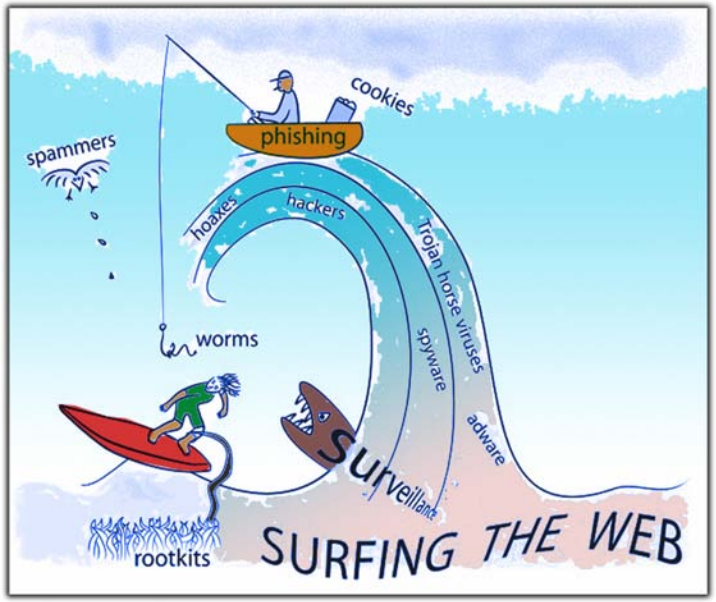
- *MP3*. Last retrieved date: 24 November 2008. http://en.wikipedia.org/wiki/MP3

TOPIC 5

SURFING THE NET FOR INFORMATION

MIND BOGGLER



http://www.sangrea.net/free-cartoons/comp_surfing-the-web.jpg

LEARNING OUTCOMES

By the end of the topic, you should be able to:

1. Explain the purpose of web directory and search engines.
2. Search for information on the Web.
3. Describe different types of search techniques.

INTRODUCTION

Figure 5.1: Information then and now

Traditionally, the library has been the main reference for information. With limited time and space, sometimes one cannot find the information needed. The source of the information was only accessible from school, libraries, and/or teachers' written works. Other sources of information were television, magazines and newspapers.

The development of ICT provides one of the solutions to the problem of finding information. Now, most people have more opportunities to seek information via the Internet. Through the Internet we are able to find any information based on our need, and it is not limited because it could be done any time and from anywhere. But not all information is easy to find and is relevant with our need. We need strategies to make the information usable to us.

5.1

WHERE DO I START?

To search for information you could use a web directory or a search engine.

5.1.1 What is a Web Directory?

A web directory is a **subject tree** or **subject directory**, that is, a listing of subjects organized into categories, which is usually arranged hierarchically. For example, if you are looking for information on **web graphics**, the hierarchy might look something like this as shown in Figure 5.2.

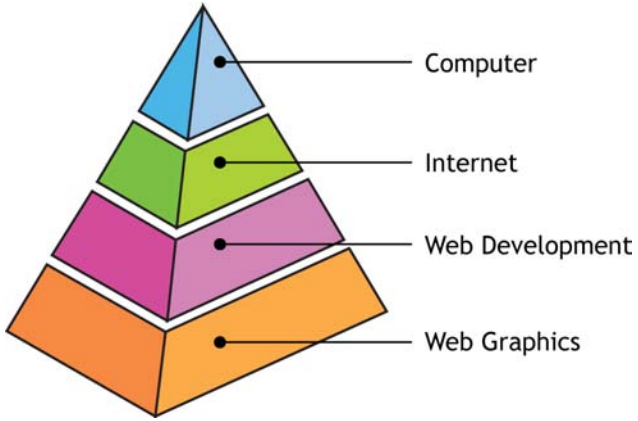


Figure 5.2: The hierarchy of web directory

Each category may be a listing of sub-topics. Directories may be organized in a variety of ways such as topically or alphabetically and have many different formats (a relatively simple listing of phone numbers to a complex attempt to organize and classify large portions of the web into subjects and sub-categories).

It is important to remember that no one has categorized the entire web. There are millions of web pages on the web and it is simply impossible to organize everything, especially at the rate the web is expanding. A directory is a collection or database of web sites classified in a meaningful way.

5.1.2 What's the Difference between a Directory and a Search Engine?

People are usually confused about the differences between directories and search engines, in part because of the way in which we use them and their apparent similarities. A simple but definitive difference is that directories are compiled by people, whereas, search engine are automated as illustrated in Figure 5.3.

Directory	Search Engine
Directories are compiled by people	Search engines are automated

Figure 5.3: Difference between a directory and a search engine

This simple premise makes a world of difference. Directories and search engines as we usually think of them may be compared and contrasted in several areas:

(A) Selection Criteria:
How are sites selected to be included in the database?

Directories:
Rely on the judgment and expertise of the people compiling them and it's not hard to see that subject experts would have different selection criteria than a hobbyist or casual user.

Also, the process is governed by the whims of the people looking at the sites - today I might include it in the directory listing, but tomorrow I may not.

Listings may be submitted to the directory for possible inclusion, or chosen by the indexer. Whether or not your site is included in the database is a function of how relevant it is to the subject matter of the directory, its scope, coverage, and accuracy, in additional to other selection criteria such as audience.

Key issue:
Maintenance of established level of quality.

Search Engines:
Also called intelligent agents, worms, crawlers, spiders and robots ('bots), are automated. They traverse the web site content and its links in a variety of different ways and collect the results into a database.

Webmasters can also submit their sites for possible inclusion into the database. Additionally, the search engine itself seeks out the key words or phrases in web sites (or indexes each word) and includes the documents in which they occur into its database.

(This is a very simplistic description of how a search engine works!) So frequently it is only a matter of time before your new site gets indexed by one of the major search engines.

Key issue:
Indexing web documents for maximum access (not quality driven).

(B) Access:
How do I access to the information I need?

Directories:
Because of their hierarchical arrangement, most directories are browsable, that is, you can click on a subject of interest to see pertinent links and subcategories on your topic.

You are dependent upon the indexers vocabulary to describe your topic, and you may have to figure out exactly what that is (for example, you may want information on cars, only there isn't a category for "cars" but there is one for "automobiles.").

Although this may be slightly confusing at first, by using controlled vocabulary - that is, one subject heading to describe topics (such as cars, automobiles) instead of several, you'll find all the information on the subject in one place.

Key issue:
Accurately classifying web sites (usually into subject areas).

Search engines:
You search the database of a search engine by entering key words into a dialog box; web sites in which these terms occur are presented as relevant documents.

Almost everyone has had the experience where you go to a web site that is high in the rankings, only to find out it is completely off topic!

Key issue:
Relevant retrieval by using automated indexing techniques.

5.1.3 Types of Directories

If we use the definition that a directory is any listing of links compiled by someone (as opposed to an intelligent agent), then almost any listing of links organized in some fashion could qualify. In practical terms, however, when people are discussing web directories, they are usually referring to sites attempting to organize a very large amount of information, or sites that specialize in a limited subject area.

Apart from differing in subject area, directories now are attempting to distinguish themselves by the type of "value" they add to an otherwise unexciting listing of sites -- for example, annotations, ratings, and rankings.

Also, most of the major search engines now also have directory listings as a service. And don't overlook your local libraries, colleges and universities when looking for web "directory assistance" either!

5.1.4 Examples of Directories

(a) Beyond the Black Stump
http://home.mira.net/~lions/

- Fun/general interest/unusual information
- Medium selectivity
- Compiled by Pete Garriga
- Includes over 12 000 sites

Sample questions: What's the scoop on the latest computer virus hoax? ("Hoaxes") or where can I find some sites on Genealogy ("Pandora's Box")

(b) Info mine: Scholarly Internet Resource Collections
http://lib-www.ucr.edu/

- Research topics at the university level
- High selectivity
- Compiled by librarians
- Includes 14 000+ sites

Sample question: Where can I find information on English Literature?

5.2 EVALUATING WHAT YOU FIND

5.2.1 Why Evaluate?

The Web is a self-publishing medium; this means that anyone with a computer, a modem and Internet access can publish ("mount") a web page or site. Anyone can publish anything -- and remember, there is no such entity as the "Internet Police."

5.2.2 How Do I Know What to Look For?

Assuming that you find something that seems as if it might fit your information needs, you may wish to consider the following points to evaluate the resource.

- If you know this, you can make intelligent assessments about any potential bias.

For example:
If the NRA publishes a site on Gun Control, the point of view or bias for or against the issue would be different, perhaps, to an article published in a web site with a focus on Parenting

- Information about the publisher of the web site can usually be found at the top and/or bottom of the page. Be especially wary of sites in which the author or sponsoring organization is not clearly stated or there is no contact information provided.

- Also related to bias or perspective are issues of authenticity and credibility - is the information true, accurate and believable?

For example:
Usage statistics for a new drug might be more reliable coming from a government web site rather than those offered by its manufacturer.

(A) Who sponsored or created the site? Why? (For what purpose?)

- What is the reason for mounting the web site? Remember that the motivation behind the site in part dictates the approach and tone of the content.

For example:
To function as a resource? For public relations? To promote a cause? To show long-distance relatives wedding or baby pictures? As a teaching aide?

- A quick clue as to the source of a web site is the domain (in the url or "address")

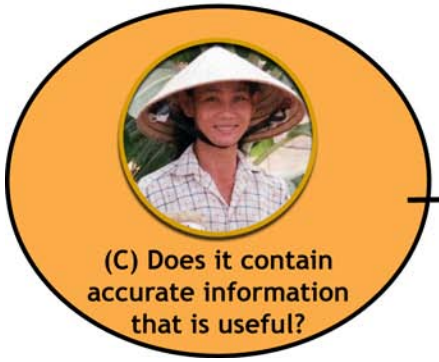
For example:
Edu means either an educational or affiliated institution, .com means commercial enterprise (which may have a financial reason for promoting a product or site), gov means government agency, and .org means organization).

- Homepages of individuals are frequently identified by a ~ (tilde) sign in the url

For example:
http://www.fakehomepages.net/~elkordy

(B) Who is the intended audience?

- Although not always true, often language is a good clue to the targeted audience. If you are looking for general information on a topic, a site written for professionals in the field or scholars may not be helpful. Similarly, if you are looking for the latest research on a topic, a consumer-oriented site will probably not provide it.

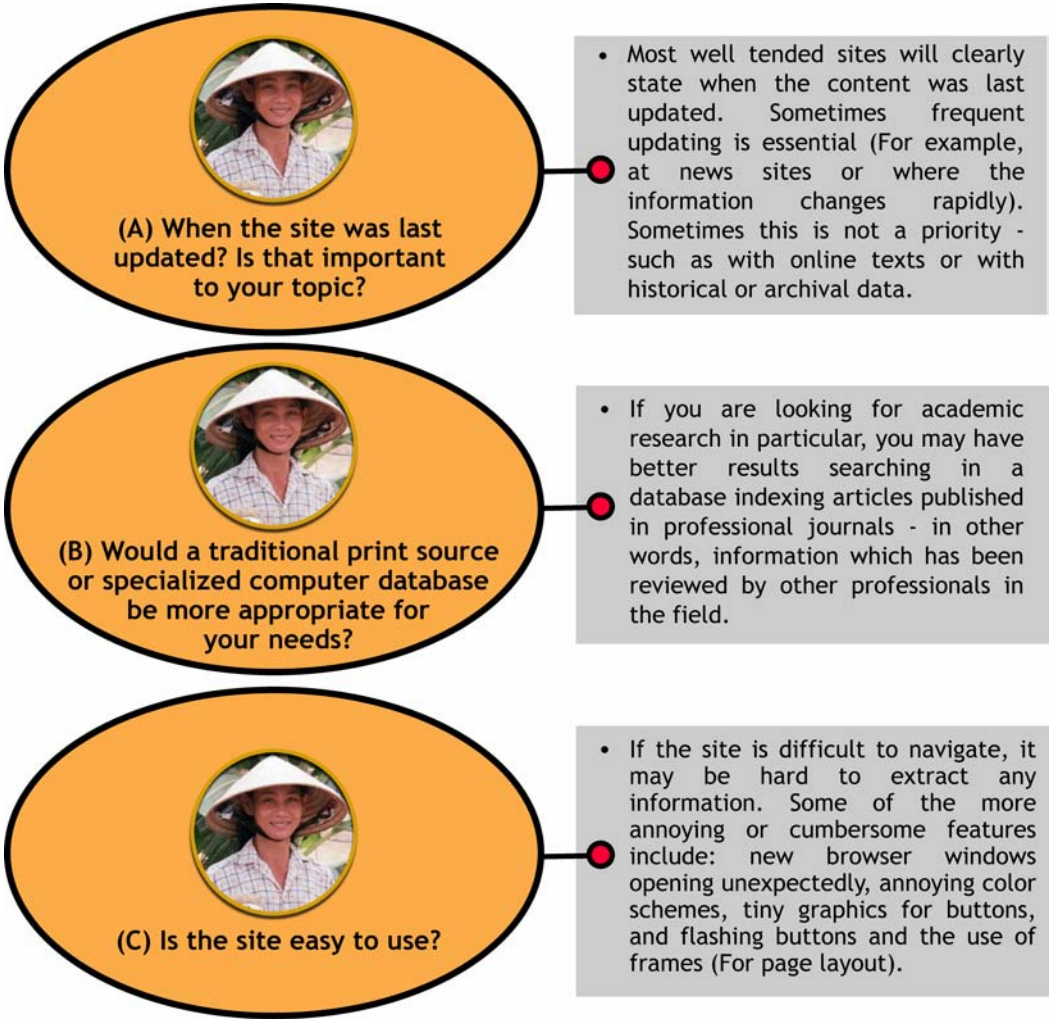


(C) Does it contain accurate information that is useful?

- Now that you have ascertained that the site was mounted by a reputable organization, written in the level and language you need, you are well on your way to determining if the site is useful to you.

5.2.3 Additional Considerations

Here are some additional considerations.



Tips for Selecting Resources

To summarize, be especially wary of a web site in which:

- The identity of the creator or sponsoring body is not clearly stated
- The page does not seem to be connected to an overall site (no header or footer information, no way to return to a "main" page)
- It is not clear when the site was last updated.

5.3 SEARCH ENGINES AND WEB INDEXES

5.3.1 What is a Search Engine and how does it work?

A search engine comprises of three mechanisms:

(a) a mechanism that identifies web pages to be included in the database;

(b) a mechanism that indexes the sites; and

(c) a searching mechanism with an interface, which scans for keywords within the index.

Examples of search engines include:

Users search the index (and hence, the database or web documents) through a query box or a template. Documents in which the search terms occur are presented as "**hits**."

Most search tools retrieve "**hits**" or "**matches**" by seeking occurrences of your search terms within its database and by attempting to match the terms (converted to a "string" of data bits) against its index.

5.3.2 What is a Bot?

> **A bot**, otherwise known as an intelligent agent, spider, crawler, robot, or worm, is an automated device (software) which may be programmed to search for terms (data "**strings**") matching certain criteria.

Examples of search engines include:

In terms of web search engines, a bot identifies and notes the addresses of web pages to be included in the database. Later, another bot comes along and works on the interiors of the web documents, recording occurrences of words and their position within the text. This information is used to create a huge index. 'Bots travel along the links of a web site, that is, they crawl or traverse from one hypertext link to another.'

- Although some search tools automatically include plurals, many do not. For example, if you are interested in looking for more information on "dogs", you can type in "dog or dogs" or type in a wildcard using this symbol: *
- A wildcard is a typed symbol which simply means "put any character here".

5.3.3 What is the Best Search Engine?

The best search engine is the one that fits the task" instead of recommending a particular utility.

Until you have some experience with knowledge seeking tools and importantly, with identifying your real information need (for example, a query on "**Leonardo di Vinci's Mona Lisa**" is likely to be more successful than "**that lady with the smile by a Renaissance artist**". It may be difficult to ascertain which tool is best for your purpose but you will make better choices with experience.

5.3.4 What are Simple Ways to Make My Search More Effective?

A very effective way to increase the precision of "**hits**" is to search as a phrase. In most cases it simply means putting quotation marks around the search terms. "**Red socks**" produces different search than red socks in most search engines.

What you are actually doing by searching as a phrase is using the concept of proximity which concerns the terms' physical closeness to one another (that is, their proximity). A document with red socks occurring close or next to each other is more likely to be on target than a document with red in the title and socks buried in the text.

5.3.5 What are the Most Popular and Useful Search Utilities?

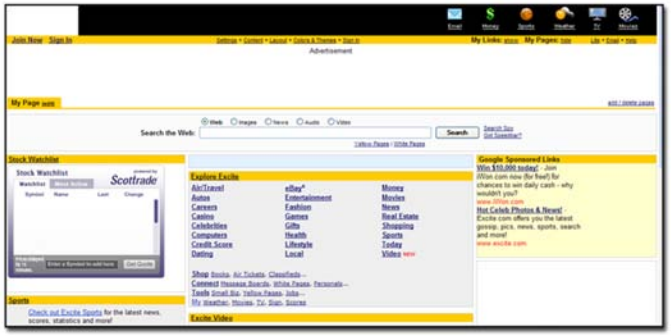
- **Alta Vista** (**http://www.altavista.com/**)
  Originally developed by Digital Equipment Corporation, Alta Vista searches the Web and Usenet.

  In its very large database, both simple and advanced searching are supported with the ability to limit searches to select portions of web documents.

  For example, it is possible to limit searches to title, domains, images and links within Web documents and by particular newsgroups or subjects in Usenet.

  Also, its ability to browse based on subject although this is rather slow.

- **Excite** (http://www.excite.com)
  Search site featuring a very large database and a lot of "**extras**" such as: Excite Channels (guide to sites by subject), stock quotes, news, TV and searching of Newsgroups. Offers concept searching.



- **HotBot** (http://www.hotbot.com)
  Voted no. 1 among search engines by PC Magazine.

  Hot Bot offers a sophisticated interface with a vast array of options such as: searching by dates, by certain domains in the U.S. (e.g. .com, .org, .edu, .gov), by media type (e.g. image, audio, video).

  Also, a huge database, powerful advanced searching options, access to other search tools by type and a subject guide.

5.4 LOCATING IMAGES: PHOTOS, PICTURES AND GRAPHICS

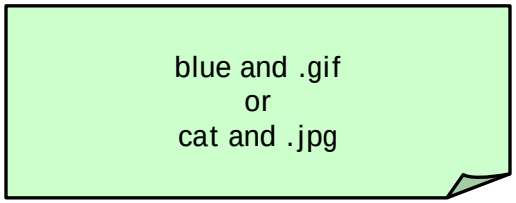
5.4.1 Why is it so Hard to Find the Pictures I Want?

Well, when we consider how we actually look for images on the web, the reason why it is hard to find them quickly becomes apparent. When searching for pictures on the web, we use keywords which we hope will coincide with descriptive terms or file names which have been

somehow "**added**" to the images. If these terms have not been applied or added to a record describing the image, we cannot find them.

In other words, search engines look for pictures based on indexed terms, usually not on any formal attributes or interior elements such as "**black**" or "**forest**" (unless, of course, these terms are attached or accompany the image).

Most pictures have file names that are rather cryptic such as **blufoot.jpg** or **ampag.gif**. When you conduct a search for images, often you are in fact looking for file extensions and a keyword such as:



If your keywords are not in the filename (blue.gif or cat.jpg) you may not be able to find what you need. Sometimes descriptive terms are applied to images to assist people looking for them and in some cases, the images may be cataloged and/or classified, all making our searches easier.

5.4.2 How Can I Find Pictures or Photographs on the Web?

You can search for images by using one of the "**major**" search engines, a specialized utility or by locating sites which are likely to contain a lot of images or links to images (such as museums or art galleries).

Search engines almost always identify images by filename extension (such as .jpg or .gif) and by html "**attributes**" (such as the "**ALT**" tag which loads before or instead of an image, the "**IMG SRC**" tag (meaning imbedded image) or the "**HREF**" tag or field (meaning hypertext reference)).

They combine the idea or identification of an "**image**" with your other keywords which is located in various fields of the web document (which fields or areas depends on the search utility you are using). Look for the image (Hotbot) or picture (Lycos) and similar limit fields in the "**major**" search engines.

Search utilities with databases of cataloged images are the most reliable way to search for images. Humans assign descriptive terms of picture elements, style, content and subject. Pictures containing your search terms are retrieved based on the indexed terms.

This method is extremely labor intensive and time consuming; it is also very expensive which is why you often have to pay to search indexed image banks. Specialized sites often have images arranged by categories with a variable amount of accompanying data.

5.4.3 Where to Go to Search for Images?

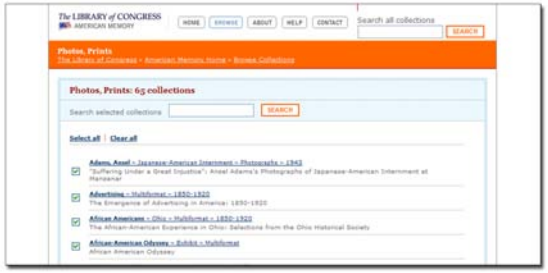
Table 5.2 shows you where to search for images.

Table 5.2: Where to Search for Images

Where to Search for Images
(a) **Searching by file extension or html attributes** (a) Altavista (http://www.altavista.com/sites/search/simage) (b) Hotbot (http://www.hotbot.com) Lycos (http://multimedia.lycos.com/) WebSEEk (http://disney.ctr.columbia.edu/webseek)
(b) **Cataloged and/or Classified Images** (a) Amazing Picture Machine (http://www.ncrtec.org/picture.htm) (b) Ditto.com (http://ditto.com/) (c) Image Finder (http://sunsite.berkeley.edu/ImageFinder/) (d) Web Places Clip Art Searcher (http://www.webplaces.com/search)

(c) **Image Banks**

- *American Memory--Library of Congress* (http://lcweb2.loc.gov/ammem/phcoll.new.html). Photographs, Prints & Drawings searchable by keyword.



- *Art Image Browser: Home Page* (http://www.si.umich.edu/Art_History/).

  A collection of images of art, architectural and museum objects from the University Of Michigan History Of Art Department, the Kelsey Museum of Archaeology, the University of Michigan Museum of Art and Chicano Murals located in Los Angeles.

(d) **Art Resources/Museums**

- WebMuseum (http://sunsite.unc.edu/wm)

ACTIVITY 5.1 (USING THE SEARCH ENGINE)

Let's find some information. Please follow the steps below:

(a) Surf this search engine page: http://www.google.com

(b) Type in anything you are interested in searching in the search bar. For example, "Cheesecake recipes".

(c) Save all the information found with the technique of "**copy**"dan "**paste**".

ACTIVITY 5.2 (SURFING THE NET FOR INFORMATION)

You have to search for **tourism** websites online, using your preferred search engine. Compare all the websites you've found, with one and another, such as their content, design, the color usage and more. Then share the information with your classmate.

Content	Design	Colour	Others

ACTIVITY 5.3 (SURFING THE NET)

In this activity, you have to surf these websites mentioned below. What have you gained from each website? Which website, do you like the most?

(a) http://www.perezhilton.com

(b) http://www.lyricsmode.com

(c) http://www.cupcakerecipes.com

(d) http://www.automotive.com

WHAT HAVE YOU LEARNT SO FAR?

The purpose and functions of web directories and search engines

- Different techniques to search for information on the web
- Different search techniques to suit your purpose

SIGNIFICANT WORDS

Word	Definition
Web Directory	A subject tree or subject directory, that is, a listing of subjects organized into categories, which are usually arranged hierarchically
Boolean Search	A method of searching for information in databases that combines search terms with the operators AND, OR, NOT, and parentheses
Search Engine	A software that searches for information and returns sites which provide that information. Examples of search engines are AltaVista, Google, Hotbot etc.
Web Index	A Web page or site that provides a list of other Web pages or sites. Usually categorized by topic and is searchable.
'bot	A 'bot, otherwise known as an intelligent agent, spider, crawler, robot, or worm, is an automated device (software) which may be programmed to search for terms (data "strings") matching certain criteria
Proximity Operators	Are used to control how closely the terms occur in the web document that is retrieved

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