



After studying this lesson, you will have better understanding of,

- The history of internet and its development
- The exchange of information using internet
- How to access internet and the tools needed
- What electronic mail is and how to use it
- The use of multimedia

Have you thought of the revolution that has taken place due to the computer which has a history of more than 60 years (Invented in 1946)? Computer Technology and Communication Technology were combined in early 1970's and developed rapidly thereafter. When communication methods such as satellite telephones were developed, computers were also using communication to some extent.

In the late 1960's there was a need to transfer data in a computer to another computer using cables. During this time Communication Technology was developed to transfer sound from one location to another. As a result of this computer technology and Communication Technology were joined and used together.

The first step towards Internet started in 1957, when the Soviet Union decided to send a satellite 'Sputnik' to space. As a result of this American Scientists started a Research Project Society Called ARPA (Advanced Research Project Association). The Scientist called J.C.R. Licklider was in charge of the society.

The scientists in this association wanted to exchange their information. Mr. J.C.R. Licklider wanted to find a way to exchange information through computers. The invention of the packet switching service, used in data transfer, was the turning point of this research.



Figure 3.1 - J.C.R. Licklider

Mr. Leonard Kleinrok was the inventor of this packet switching service. He started his search towards this goal in 1959. He obtained his doctorate in 1962 and thereafter introduced the concept to the entire world. In 1964 Mr. Paul Barn, another scientist, extended this service to exchange data through computer networks. A colleague of Leonard Kleinrok's called Larry Roberts was made leader of this research project. In 1966 they developed a computer Network called ArpaNet. Kleinrok's computer became the first computer connected to the network, whereas the second computer was Douglas Engelbart's computer. Douglas Engelbart who is from the Stanford Research Institute also invented the computer mouse.



Figure 3.2 - Scientist Leonard Kleinrok

Person who invented the packet switching service

In 1969 four computers were connected to the network and the scientists realized the importance and the practical capabilities of computer networks.



**Figure 3.3 - Scientist Paul Baran
Extended the packet switching
service**

The next aim of the scientist was to design and develop computer applications for computer networks. Subsequently Raymond Thomlinson developed Electronic Mail (E-mail) programs to send Electronic mail through ArpaNet.

Robert Kahn, who was a member of the initial planning Board, considered this as a very important turning point in their Research. They could not find a better method of communicating with the research society members.

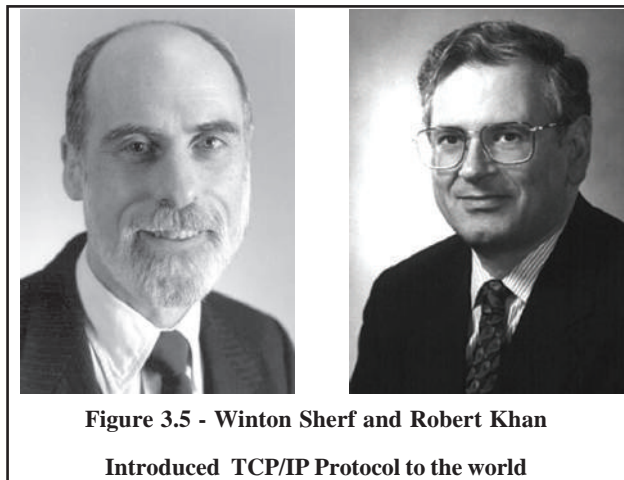
Larry Roberts further developed the e-mail program to display the received e-mail messages on the computer screen in such a way that the unread E-mail messages could be identified early.

In the mid 1980s America's Power and Energy Dept and NASA (National Aeronautics and space Administration) organization got involved in this research work. Subsequently computer scientists of universities and Research institutions in other countries were given the privilege of joining this computer network.

This period (Mid 1980's) was considered the beginning of the second stage of the internet. Two fundamental points were focused to mark this beginning.

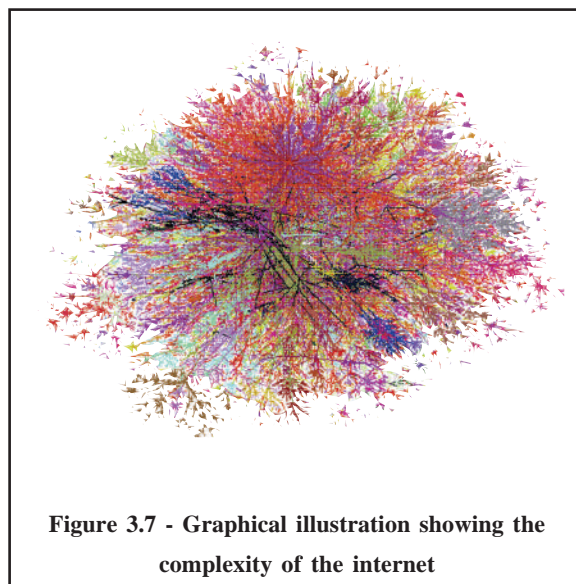


**Figure 3.4 - Raymond Thomson
Developed the Electronic Mail software
to send E-mail through ArpaNet
Network**



The first point was communication between two computers and data transfer between two computer networks. A common transmission language was developed to communicate between two computer networks. You might have heard this as TCP / IP (Transmission control protocol / Internet Protocol). Vinton Cerf and Robert Kahn are the two scientists who invented TCP / IP protocol. In 1989 another scientist called Tim Berners-Lee introduced the World Wide Web (WWW) to the world.

In 1990, according to his directions URL (Uniform Resource Locator), HTTP (Hypertext Transfer Protocol) and HTML (Hypertext Markup Language) were introduced and presented to the world and thus internet was born.



The second point to mark the beginning of the second stage of the internet is the beginning of the commercialization. Factories to produce equipment for computer networks and internet were established and their equipment was freely available in the market.

By 1990, any person could

1. Connect to internet easily.
2. Maintain web sites.
3. Enter information into web sites.
4. Connect to internet without any mediation from governments. This was the main reason for the rapid development of internet.



Activity 3.1

- Using the internet facilities available in your school, write a report consisting of the important incidents along with the periods associated with the history of internet.
- Combine the information collected by the students separately and produce one report.

Communication means the exchange of information between persons. One can exchange information using characters, words, data, pictures, sound, animations and videos. Because of the connection between the computers and communication, the computers were able to support the movement of various media. This leads to the globalization of the universe and the concept of the universal villages was born. It is unbelievable how Internet Technology has made it very easy to communicate and transfer information between people through E-mail (Electronic Mail).

It is possible now to send information to another person immediately without much effort. The person receiving might be traveling in an aircraft or attending a conference. He will be able to respond to the E-mail immediately.

The concept of the E-mail allows a person to be given an E-mail address which will be the same irrespective of where one is in the universe. In real life our mail address will depend on our current residence.

The computers which were only used for calculations earlier are now used with multimedia technology to exchange information. As a result of availability of internet facilities the communication cost has dropped drastically. Will the companies who produce communication facilities provide them free of charge? How long can we use these facilities? Will there be restrictions on the retrieval of information from internet? Or will it be a valuable free service in the future? These topics will be discussed later.



Activity 3.2

- Write an essay about the benefits one can get from internet.
- *'Internet provides benefits as well as harmful effects to society'* discuss.
- Divide the class into two groups and debate the topic.



3.1 Internet and Information Exchange

Currently most of the computers in the world are connected to each other, In addition to computers many other electronic devices may also be connected to the internet. (See figure 3.8)

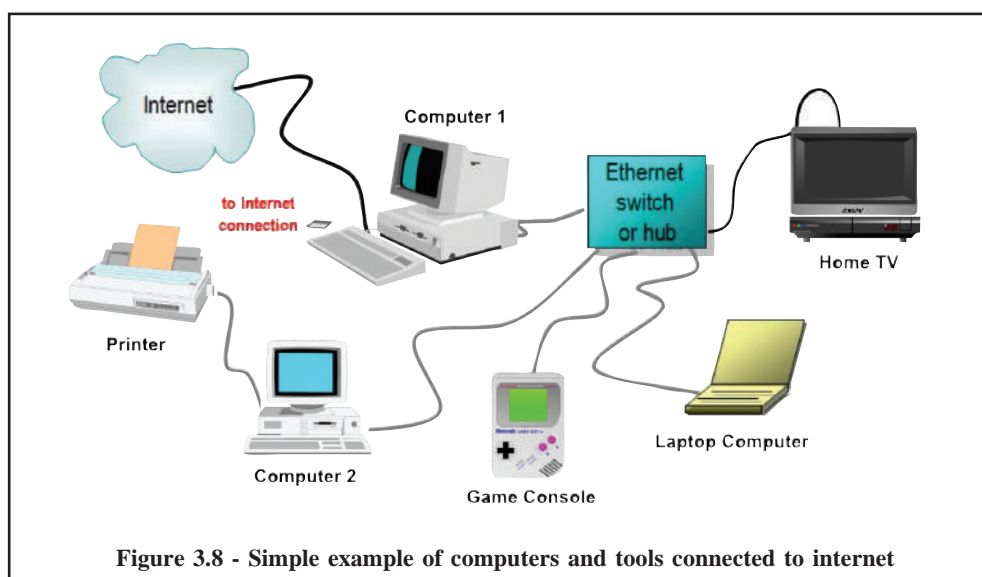
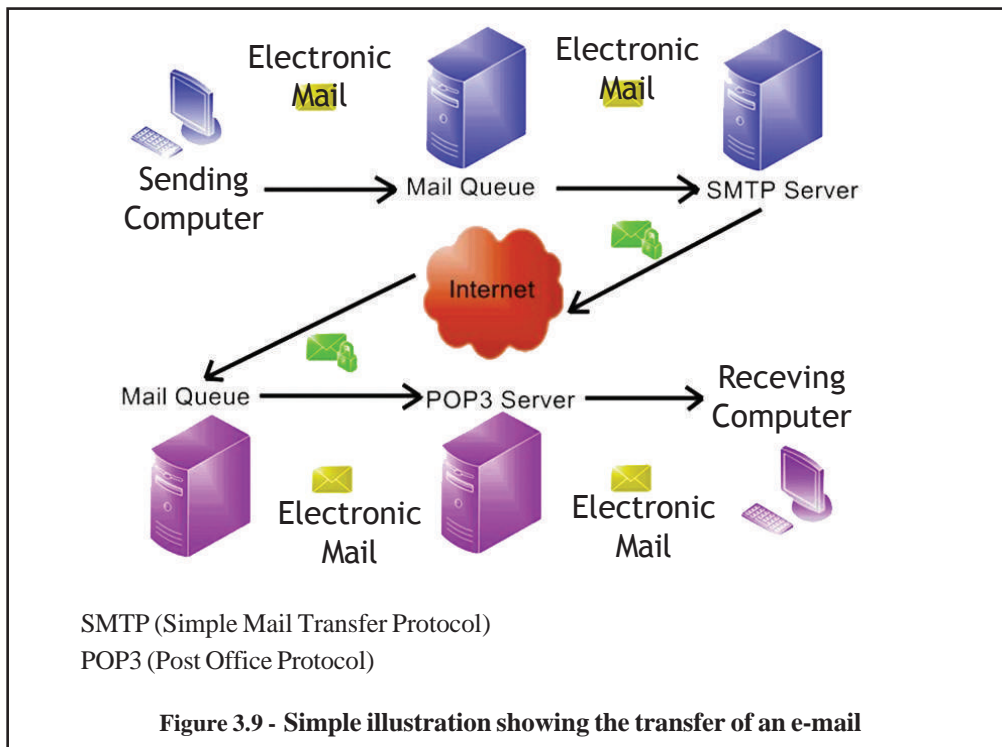


Figure 3.8 - Simple example of computers and tools connected to internet

One of your friends may want to send an E-mail to you. He will first draft a letter using his computer and then send it through E-mail facility. First this E-mail message will be sent to the Local Area Network (LAN). LAN is a set of client computers (Usually PCs) connected to one or more servers (usually a more powerful PC or large computer) connected over relatively short distances (eg. In a single building). The E-mail will be sent from there to a Wide Area Network (WAN). WAN is a communication network that connects users across a wide area crossing the geographical boundaries of cities. Ultimately the E-mail will reach the receiver's computer.(See figure 3.9)



Say a person wants to access the internet using a computer in a library to find out information about research articles. As soon as he finds information he wants he can download the details to the computer and share with others. When doing this activity you have not used a pen, paper or the support of any other person. You needed only a computer and the internet.

The computer network you have used for this purpose may be a network of smaller networks.

Different sections in your institute such as Administration, Finance, Education etc will be connected via small computer networks. Such networks can be connected to form a Wide Area Network. Internet is formed by connecting these Wide Area Networks.



How do you connect to Internet?

Some of you may be already using Internet. You may be then familiar with the internet related technical terms. This lesson is specially designed for students who have not used internet.

We will first try to answer the following typical questions you may want to ask.

- What are the accessories needed for the Internet?
- What are the types of connections you can have?
- Who are the Internet Service Providers (ISP) and what services do they provide?
- What are the tools and different interfaces used to access Internet?



Types of accessories and services needed for the Internet

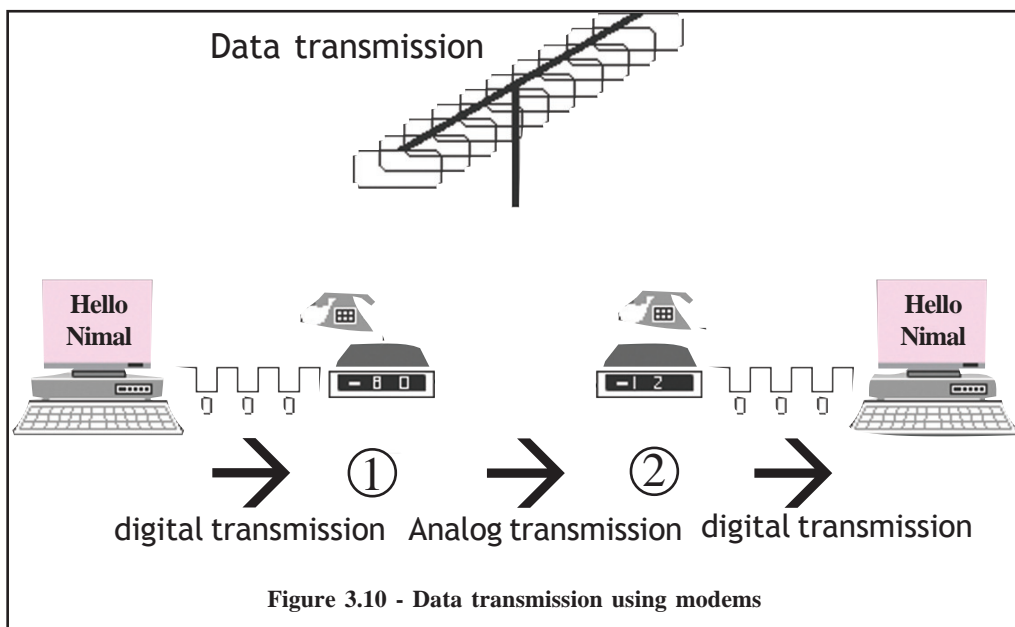
Basically you need a collection of five (5) parts and services.

- A Telephone
- A Computer
- A Modem
- Communication Software
- An Internet service provider

However, one does not need sound knowledge to control a computer to use the internet. One needs to know how to communicate with another computer via a modem.

What happens here is that your computer will give some instructions to the modem. According to the instructions the modem will send the message to another computer through telephone cables connected to another modem. How does this happen? What are the basic technologies used? When a computer exchanges its data and information with other peripherals such as keyboards, central processing unit or a printer etc, it uses a language which is specific to computers called the machine language. In contrast a telephone uses an Analog Method. In a digital system, instructions are in 0s and 1s. In an Analog System it uses waves. If you can speak aloud these waves will be large compared to the waves you get when you speak softly.

You have learned that the common method for connecting computers to one another is via modems and telephone lines. A modem is data communication equipment that translates the digital signals used by a computer into analog signals of the kind that travel by conventional telephone lines. The process of translating digital signals into analog signals is called modulation. A modem also converts the analog signals into digital at the receiving end of a computing device. This process, which translates analog signals into digital signals, is called demodulation.



A Modem can be built into the computer (Internal Modem). An External modem is connected to the serial port of a computer and is placed outside the

computer. Normally there can be around two serial ports attached to your computer. The basic function of a serial port is to send ordered information and instructions to the computer and get from the computer. When you buy a modem all the accessories and instructions will be given to you. When buying a modem one has to be concerned about the price and the data transmission speed (Band rate). It is measured in bits per second (bps).

You may have seen the modems with band rate 1200, 2400, 4800, 9600, 14 400, 28 800, 33 600, or 56 000 bps. Generally, modems with band rate 9600, 14 400, or 28 800 are used.

Another accessory needed for the internet is a telephone. If you have an additional telephone you can use it only for the internet. You may also make use of your own telephone for this purpose. You can make use of a service provider to buy a telephone mail server for this purpose. This will be a low cost option.

You may also need communication software to have internet. Internet service providers or computer manufactures will provide this software to you. You may also find freeware (freely available) or shareware (exchange free of charge) for this purpose.

In addition to the above components (computer, modem, telephone, and communication software) you also need an Internet service provider. Internet Service Providers (ISP) sell internet subscriptions to the public. ISPs will connect you to the internet.



The ways of obtaining the Internet Connection

1. Lease Line

One can obtain the internet service using a separate telephone line. This telephone line is used only for the internet service while it is used through out the day to supply the internet service.

In this connection the telephone line is taken as a lease line from the Internet Service Provider.

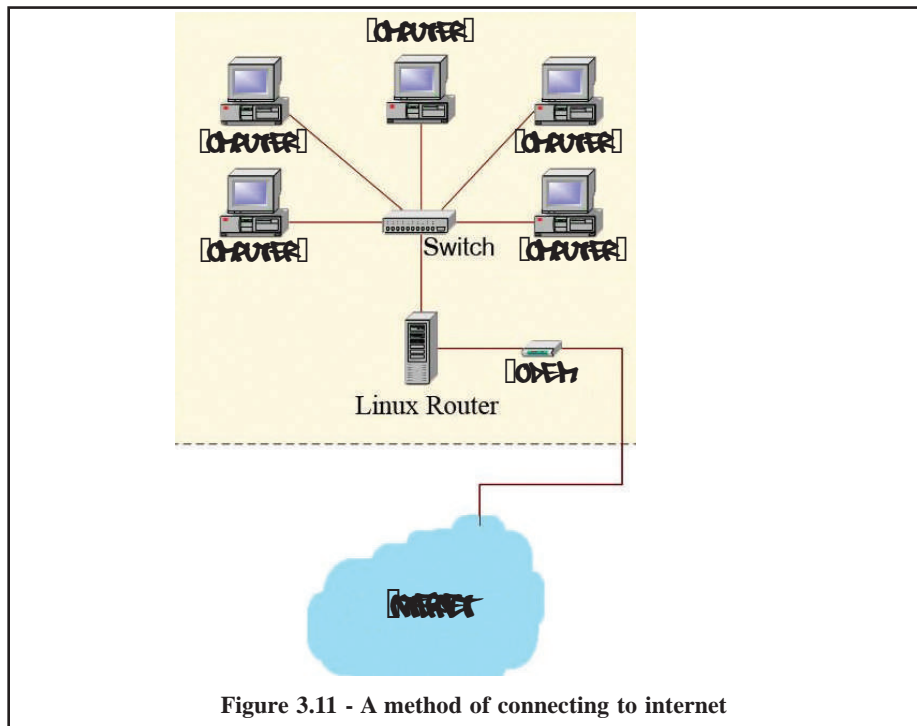


Figure 3.11 - A method of connecting to internet

Within Sri Lanka the Internet Service Providers (ISP) have this kind of connections. Their computer systems are connected to a host computer which is directly connected to an overseas ISP. One will have to pay a large sum of money to get this connection. You need to have experienced computer technicians to maintain the system and need to allocate a large amount of money for maintenance.

In this way you can get the internet connections from your ISP using two methods. One method is to connect your computer to ISP directly using cables. Another method is to use a wireless connection. You will not need an additional modem for this method.



Dial up connection

The connection is made dialing a number to the Service Provide Computer when only it is necessary to connect. The charge for the connection is only for the connected duration besides the monthly rental.

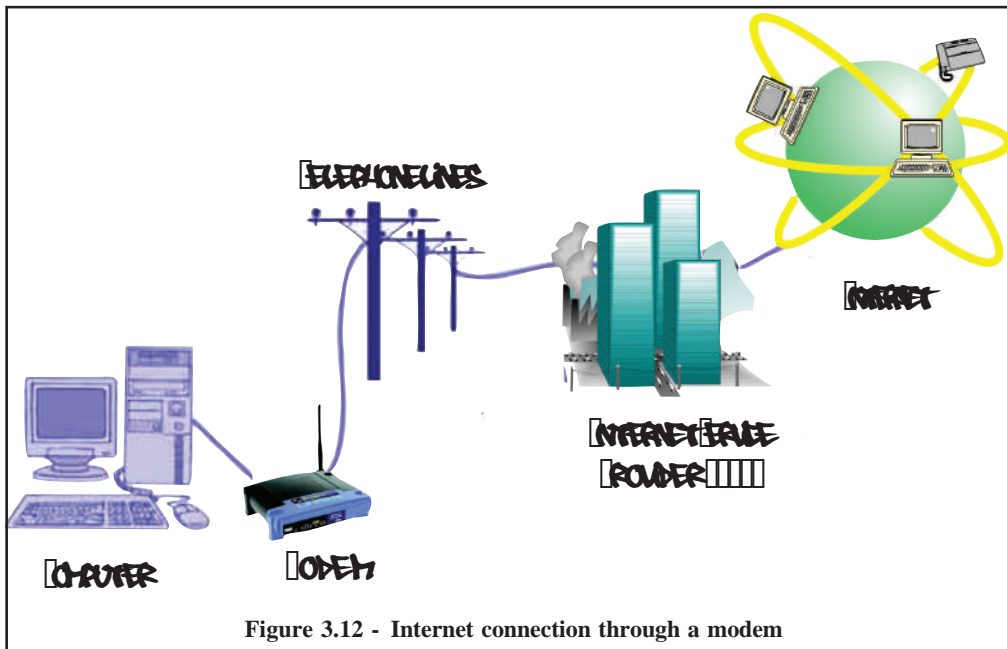
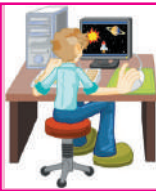


Figure 3.12 - Internet connection through a modem



Activity 3.3

- If there is an internet connection in your school, write a report describing the method used to obtain the internet connection. If there is no internet connection prepare a plan to obtain the connection in the future.
- What are the advantages and disadvantages of the method used or the method to be used for the internet connection in your school?
- Write down your suggestions to improve the method.

You may have seen various kinds of interfaces used to connect to internet. Basically, there are two types of computer interfaces. These types depend on the operating system and the computer programs used. They will be either icon based or text based. User-friendly icon based GUIs (Graphical User Interface) were first introduced by the Apple Company for their Macintosh computers. These interfaces are now popular with Windows and other operating systems. An example of a user-friendly icon in a GUI for E-mail can be a picture of an envelope on top of a globe.

If a person wants to activate e-mail program, he needs to move the cursor to the E-mail icon and click the mouse button.

Another type of interface is the Text based interface. One can interact a text based interface using two methods. One method is using a Menu Selection. For an example let's say the following display is shown on a computer screen.

1. Mail
2. Forums
3. File Transfer
4. Remote log-ins

One needs to type the preceding number or move the cursor on top of the option and press the left hand mouse button to select an option.

Still you may not be able to select the option you want. Above Menu Items there may be several Sub Menu items. After selecting a Sub Menu Item, there may be more options to be selected under the Sub Menu Item. You will have to continue this process until you select the one you need.

The following figure illustrates another kind of a display of Menu Options.

1. (M)ail
2. (F)orums
3. (F)ile Transfer
4. (R)emote log-ins

In this method, one has to type the letter specified to select the option.

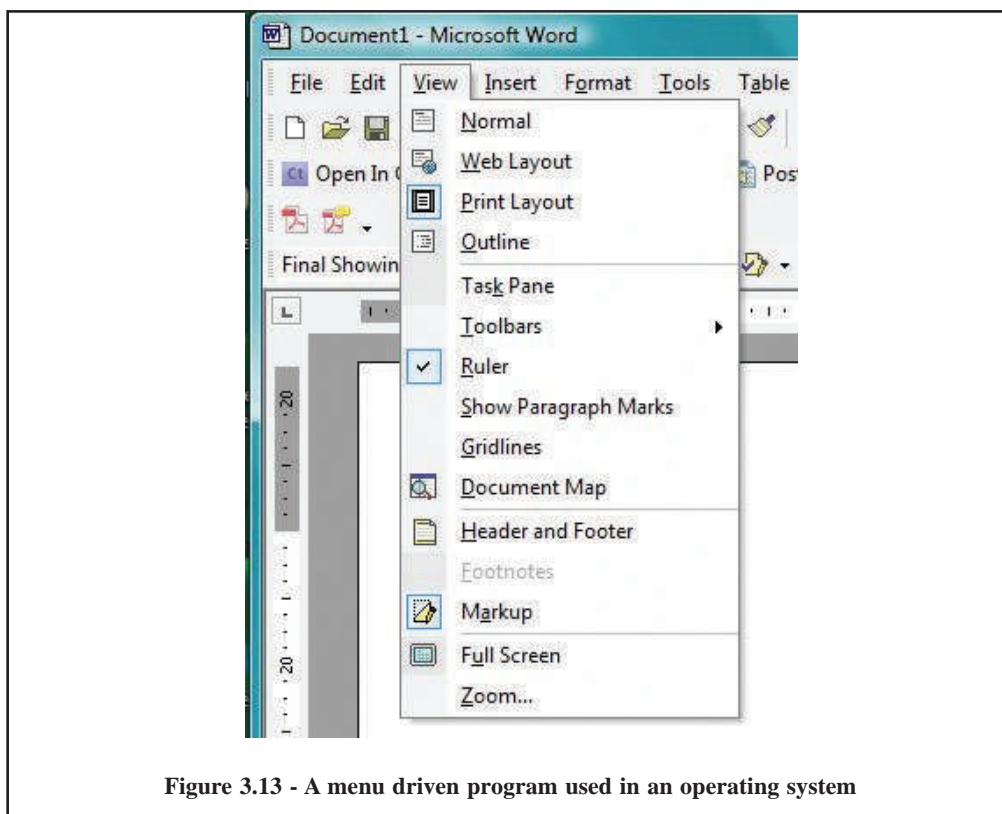


Figure 3.13 - A menu driven program used in an operating system

After the advanced development of technology, Menu driven interfaces are now being replaced by Icon based (GUI) interfaces. You will come across user friendly icon based GUIs in any operating system (Unix, Windows etc.) you are using.



3.2 Revolution of Message Exchange and Electronic Mail (e-Mail)

By experience we know that when you send a letter through normal post it will take one to two days to reach the recipient. It is necessary to exchange information quickly and efficiently to expedite the development process taking place around the world. Most of the developed countries use internet and e-Mail to exchange information.

In real life our mail address will depend on our current residence. Telephone systems have changed this to some extent. Without restrictions one will be able to exchange information to anywhere in the world through the Internet. Although sending information via a normal telephone or a mobile phone is expensive, it is also a quick method. When you are sending a letter by normal post you will have to pay for the postage. When you are using a telephone or a mobile phone to exchange information, you will have to pay more than the cost of postage. If you have the e-Mail facility, you do not need a pen, a piece of paper, envelope or a stamp. Unlike an e-Mail your letter takes a long time; perhaps several days to reach the recipient. If the recipient has left the given address, the letter may get lost or you will receive it by return mail.

One will not have to face any of these problems if you are sending the information via e-Mail. Also your friend will receive the e-Mail within several seconds. What you need is an e-Mail address and the Internet facility. Your e-Mail address will not change with your address or location. Where ever you are in this world, your computer will act as your post office. The cost involved in this process will be limited to the monthly amount you will be paying for the telephone or for the ISP (Internet Service Provider).

How do you obtain an e-Mail address? Your computer which is used to send an e-Mail will have a unique number. This number is called the Internet Protocol (IP) address. It will also have a name corresponding to this IP address called the domain name. For example if the domain name is 'mail.colombo01.com', you can use a name before the domain name to identify yourself.

If your name is Nimal, You can give 'nimal@mail.colombo01.com' for your e-Mail address. If the computer breaks down there will be a backup computer to support this. Your e-Mail messages stored will be well protected. A copy of the e-Mail messages you have received and the e-Mail messages you have sent will be stored by the e-Mail system. It will take only a few seconds or a couple of minutes for you to send an e-Mail message to a hundred or more users.



Electronic Mail

When you talk about the Internet system you will come across seven important things. They are :

1. Electronic mail
2. Forums
3. Chat Groups
4. World Wide Web
5. Discussion Groups
6. News Groups
7. File Transfer Protocol

Out of these, Electronic Mail is important for 4 main reasons.

- It is very close to real world activities.
- It is a popular activity.
- It is an important Internet communication service.
- You do not need a basic knowledge of Internet to use it.

Today, millions of users use the e-Mail service. This has broken the time limits and the border limits and is used all over the world.



The reasons as to why the e mails become popular

1. It has more speed than the normal
2. Less expensive
3. One can communicate to any part of the globe
4. Animations, sound and one's own voice can be sent which cannot be sent through normal post.
5. A source document can be sent for the recipient to edit
6. In a failure of directing the e mail to the recipient, it returns to the sender explaining the reason as to why it could not be delivered.

Sometimes you may want to send a very brief message through e-Mail quickly. One may not want to write grammatically correct sentences for this purpose. Your main objective is to send the message quickly. It is facility used to make a close relationship with others. You will not need stationary, postage, post offices or post boxes for this purpose. The recipient will receive the e-Mail immediately. He will also be able to respond to the e-Mail immediately. You will also not need thorough technical knowledge to use the facility. An expensive high-end computer is also not needed for this purpose.

How do you generate an e-Mail? One needs to first switch on the computer and the modem. Modems used today will not have a separate switch. Electronic circuits of these modems are fixed inside the computer.

One does not need to keep his computer always switched on. Your service provider will keep his

For free distribution



Figure 3.14 - An interface used to enter ID and the password to get Internet connection

main computer switched on throughout the day to receive and send all your e-Mail messages. In other words the service provider's computer will keep all your messages until you delete them. After you have switched on the computer it will activate the operating system. Eg. Windows, Unix Linux etc. The service provider will need some information from you for identification.

They are Identification name (ID) and Password. Other names used for ID are User name, Account name, Login name or Screen name. After this information is provided the service provider will connect you to his computer. When it is trying to connect you, you will hear a sound like the sound you hear from a facsimile machine.

With the help of the service provider, it is possible to use your first name or initials for your ID. This is possible if there are no users with the same ID. In such a case you may use your name with initials.

Examples of possible e-Mail addresses:

saman@cmb.ac.lk

klsaman@sltnet.lk

klm@abcnet.kj

k_l_saman@yahoo.com

saman@gmail.com

saman@aol.com

There may be several service providers in your country. You may register several e-Mail addresses with their help.

After connecting to the Internet, the next thing would be to find out how to send an e-Mail and receive an e-Mail.

How do you send an e-Mail? An Internet addresses will have two parts namely Identification Name and the Domain name. '@' symbol is used to separate the two parts. (One needs to press Number '2' key with the 'shift' key to display '@' symbol).

Let us assume that you have obtained the e-Mail address from Sri Lankan Telecom. Then your address will have the domain name @sltnet.lk. If you have obtained the e-Mail address from the company Yahoo, the domain name will be @yahoo.com. If you have obtained the service from the University of Colombo, the address will have the domain name @cmb.ac.lk. If you have obtained the service from the University of Moratuwa, the address will have the domain name @mrt.ac.lk. If you have obtained the service from the School Network, the address will have the domain name @school.net.

The Electronic Mail address format would be ID@Domain_Name. Examples of e-Mail address obtained by the person 'abc' using different service providers:

abc@ucsc.cmb.ac.lk

abc@mtr.ac.lk

abc@school.net

abc@sltnet.lk

e-Mail addresses as above will be doing the same service as a normal addresses. For example, the abc@ucsc.cmb.ac.lk E-Mail will be received by a person (Identification abc), who works in the University of Colombo School of Computing (ucsc) which is an academic (ac) institute under the University of Colombo (cmb), a university in Sri Lanka (lk). You need to remember the following rules when writing an e-Mail address:

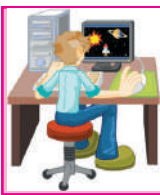
1. One needs to write the e-Mail address as it is.
2. One should not include spaces.
3. If one needs to use capital letters for the ID, he has to inform the service provider.
4. If one needs to separate parts of the name, he needs to use underscore, hyphen, or period for this purpose with the service provider's permission.
Eg. abc_lanka-col.city@sltnet.lk

The last part of the domain name can be used by two letters to identify the country. The two letters .lk is given for Sri Lanka, us: United States of America, .in : India, .ch : China, .eu :Europe, .asia : Asia.

Some other example are given below:

.com	-	Commercial Business Company
.edu	-	Educational Institute such as Universities
.org	-	Non –profit Institutes
.gov	-	Government Institutes
.mil	-	Military Institutes
.int	-	International Institutes
.net	-	Network Provider, Internet Service Provider

One should have a program to read and write e-Mail messages. Your service provider may have given you this program. Common software like ‘Windows Outlook’ or Webmail can be used for this purpose. If one has obtained the e-Mail address from companies like Yahoo or Gmail, then he can use the software that belongs to these companies.



Activity 3.4

- Prepare a list of e-Mail addresses that belong to the students in your class. Identify the domain names and prepare a report consisting of the following:
 - The organization to which the domain name belongs to
 - The country or the region the domain name belongs to
- Analyze the comments given by students with respect to the e-Mail service.

If one executes the e-Mail programs Yahoo or Gmail, you will see interfaces as given in figure 3.15. After executing these programs the first step is to provide your ID and password. If the ID and the password match Yahoo or Gmail programs will

display another interface. When you press the New button, you will get the interface to enter the e-Mail message. After writing the message, the next step is to write the receiving person's e-Mail address against the word 'To' and the sending person's address against the word 'From' (See figure 3.16).

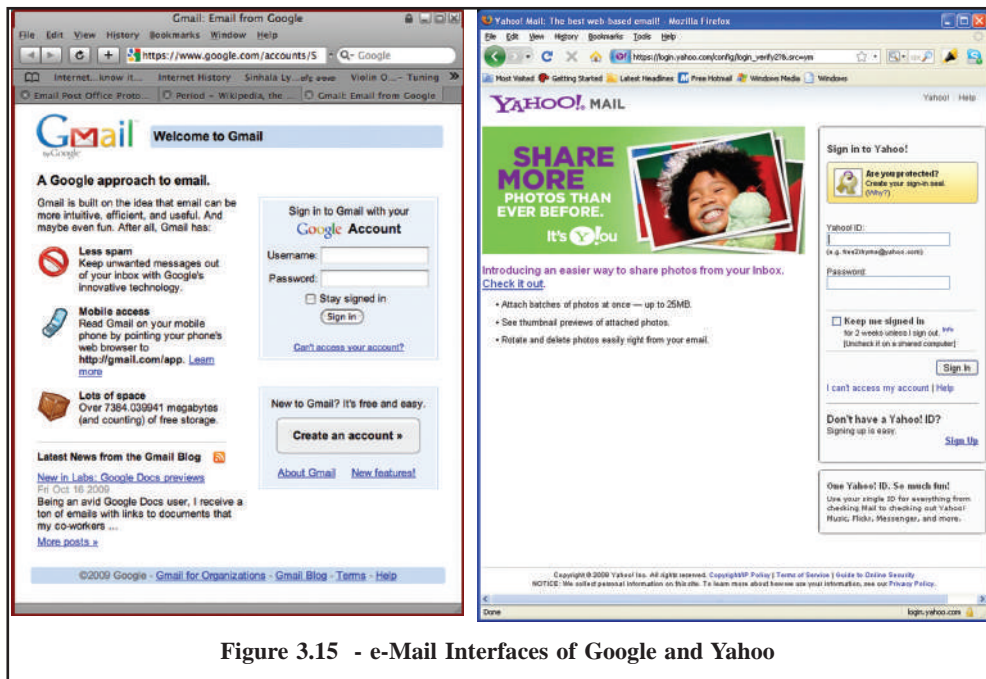


Figure 3.15 - e-Mail Interfaces of Google and Yahoo

You will also have to enter a subject for the message. Eg. 'Urgent', 'Important', 'Message', 'About Yesterday', 'Research and Development' or 'I*M*P*O*R*T*N*T'

For example:

From : abc@yahoo.com

To: def@colombo-city.com

Subject : Testing e-Mail

For free distribution

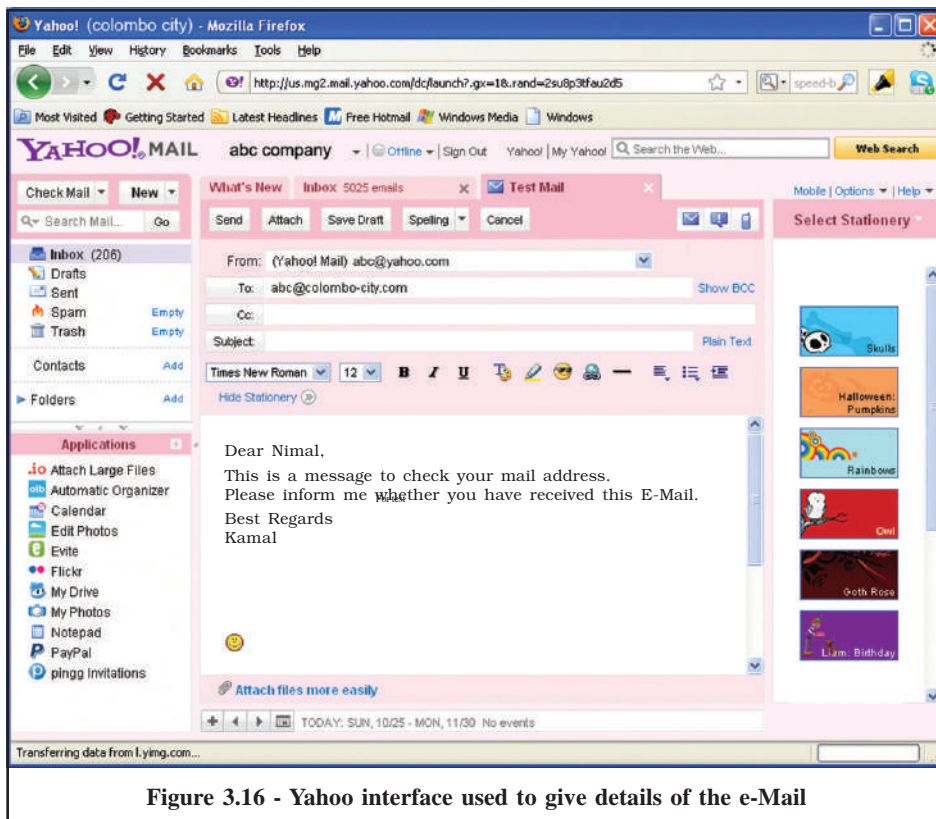


Figure 3.16 - Yahoo interface used to give details of the e-Mail

You may type a message for the E-Mail or you can attach a file to your E-Mail. An example of an E-mail is given in Figure 3.17.

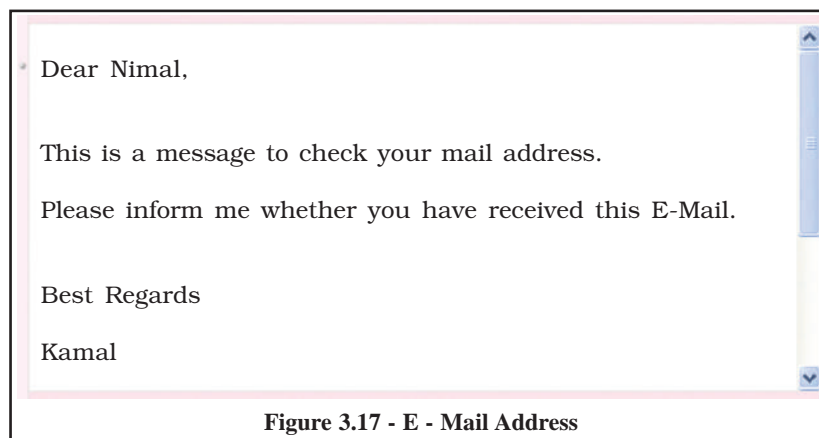


Figure 3.17 - E - Mail Address

You can deliver this e-Mail by clicking the ‘Send’ button. If the receiver is connected to the e-Mail program, he can send a message immediately. If you are

sending the message to a friend who is connected to the same Domain or if he is a working for the same organization and is connected to same computer network, he will receive the message in a few seconds.

If the message needs to travel through another computer network, it has to go through a 'Gateway'. It is like going through a fence. This may take more time for the recipient to receive the message. This is due to the loss of information packets or it has been jammed. If the message cannot be delivered the sender will get a message indicating the problem.



Reading Electronic Mail

We hope that you can now send and receive e-Mail messages. The received messages will be stored in the main computer in the way the letters are stored in Post Offices or Post Boxes.

Any computer program used for Electronic Mail will consists of options to 'Received Mail', 'Download Mail', 'Check Mail' and 'Retrieve Mail'. If you are using the Yahoo Mail, you can see these options as in Figure 3.16. The interfaces you get for other e-Mail programs will be slightly different. In all these e-Mail programs there will be options to see all the messages you have already gone through and the messages you have not yet gone through. The messages you have not yet gone through will be highlighted for you to easily identify them.



Other tasks of e-Mail

In this section you will find the following:

How to send the same letter to several people (CC)?

How to reply to an e-Mail message?

How to forward an e-Mail message?

When one wants to send a letter to two persons using the normal post, he will have to do the following tasks.

- Prepare the letter for both persons.
- Find the two addresses and write them in two envelopes.
- Insert the letters in to the envelopes and paste them.
- Paste the stamps on the envelopes.
- Put them into a post box

The recipients will receive the letters within a couple of days depending on the distance. You would have spend a lot of time and effort for the activities involved in sending letters. When one uses Electronic Mail, he can easily send copies of the letter to several persons without any effort. This is called the 'CC' facility. It stands for 'Carbon Copies' or 'Courtesy Copies'. You can send the letter even to 100 persons or 1000 persons by pressing several keys.

Replying to an e-Mail is also straight forward. In this case one does not need to type the subject or the receiver's e-Mail address. They will be automatically entered by the e-Mail program. You need to type only the message and press the 'Send' button.

Since the E-Mail facility is not very reliable as yet, it is advisable to send an acknowledgement to the sender using the 'Reply' option. It is common to send an acknowledgement such as 'Thanks' or 'I got your mail'. The sender will be very happy to receive an acknowledgment message.

In some of the e-Mail programs, you will find additional features. In these programs when replying to an e-Mail message, the received message will be automatically added to the reply. You will find the 'Greater Than' symbol (>) in front of each line in the received message. When going through E-Mail messages you may not be able to identify the sender from his name. e-Mail programs have facilities to add your details automatically to the e-Mail messages.

An Example:

K.L.Saman

University of Colombo

Tel. +94-11-2503150 Fax. +94-11-2587239

saman@cmb.ac.lk, k_l_saman@yahoo.com, saman@gmail.com

It is also possible for you to indicate your mental status in you e-Mail. There are special emotional symbols used for this purpose. It is common to use special characters as given below for this purpose. You have to turn your head to left to recognize the symbol.

:-) or ;-)	Happy face
:-(or ;-(Unhappy face
8-)	Wearing spectacles
:-) #	Person with a beard
o-O	Surprise
o-(Sad or Crying
o-	No emotion

Many other symbols are also commonly used in the internet society. Short abbreviated messages are also commonly used when writing e-Mail messages. There are no rules to control this. The main purpose is to write your e-Mail as short as possible.

A few examples are given below:

WRT	-	With respect to / with regard to
FYI	-	For you information
BTY	-	By the way
IMHO	-	In My Humble Opinion
IMO	-	In My Opinion
FAQ	-	Frequently Asked Questions
FOAF	-	Friend of a friend
AFK	-	Away from keyboard

We can introduce e-Mail as the computerization of the traditional mail. It is similar to exchanging messages using telecommunication systems. It also uses computer systems in the message exchange process. Since the computers are connected through the internet, it is similar to the telecommunication connections where two people can exchange information over the telephone around the world. If the receiver is already using a computer, he can exchange information immediately. It is also possible with the e-Mail facility to send copies of your e-Mail to several recipients anywhere in the world. You may also receive replies from all of them. You can also store the e-Mail addresses of people in an address book in the e-Mail Program. When sending e-Mail messages to people in the address book, you do not need to type the e-Mail addresses. You can get the addresses by selecting them from the list.

It is also possible to send a copy of an e-mail to another person just for his information.

You may also forward the e-Mail messages received to another person just for his information. (Forward option)

You can also store all relevant messages in a separate folder in the computer.



3.3 Exchange of Sound and Videos using e-Mail



You have already learned how easy and effective it is to use the e-Mail facility.

In the first era of Internet, people mainly used the e-Mail facility. Do you know that, Internet is now used for advanced and unbelievable tasks? The e-Mail facility is arranged to send characters using the Digital System. Now almost every thing is becoming digital and it is also possible to exchange audio, video files and picture files with e-Mail programs.

One can draw pictures with millions of colours. It is possible to send a Birthday card, or a Wedding card using the Internet. One needs to select a Birthday card or a

Wedding card he likes from the Internet and add one's own message. It is even possible to send through e-Mail your own digitized voice message with the card selected. This cannot be done with the traditional mail. The only way of doing this is to record your message in a storage media (eg. Cassette), put it in a parcel and post it. An additional cost is involved in this process.

When you send a digitized audio file through Internet, it is not possible for any one to listen into this message on its way to the recipient. This is due to the fact that when sending information through Internet, the information will be distributed to several packets and sent using different routes (Packet Switching). Each packet will contain information about the sender, receiver and the packet number. After using different routes these packets will reach the destination computer, get sorted, sent to the recipient. Thereafter it will be stored in the computer.

When sending the packets, if there is a problem in one of the packets, the computer will send it back to the first computer asking it to be corrected and resent. If the receiving person's e-Mail address cannot be found in any computer for some reason, it will definitely be sent back to the sender.

It is common today for a person to send a voice message or a video clip videoed by him through e-Mail.

You can also decorate your mailing address using different colours. Most people tend to use HTML (Hyper Text Mark up Language) instruction code to decorate their messages. In future, everybody will be tempted learn HTML to control the use of a computer.



Let's explore the Internet

The main medium used for the purpose of exploring for information is the Internet. Therefore, let us now make a brief inquiry regarding how we explore the internet for information.

What's required to explore the Internet

Once you have established connection with Internet, you mainly require the following to explore it.

1. Web Browser
2. Web Address/Addresses

1. Web Browser

The computer software used to explore the Internet is called the Web Browsers. While there are quite a number of web browsers available, the main browsers are;

Internet Explorer

Mozilla Firefox

Google Chrome

Opera

While there are advantages and disadvantages unique to each type of Web Browser above, it is necessary to select the Web Browser according to the need.



Fig. - 3.18
Internet Explorer



Fig. - 3.19
Mozilla Firefox

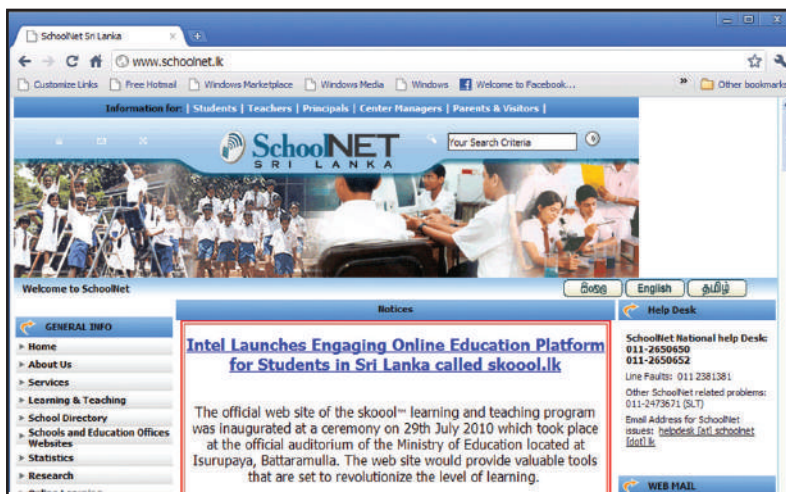


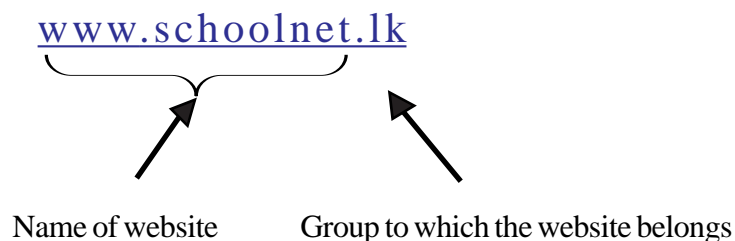
Fig. - 3.20
Google Chrome

2. Web Addresses/Address

While there is an infinite amount of information stored in the Internet the locations where they exist have been provided addresses unique to them in order to facilitate their systematic manipulation. The relevant address should be provided to the web browser in order to access the necessary information.

While, in the provision of the web address `www` is noted at the beginning, the name of the website is then given. Then the group, to which the website belongs, is noted. In this instance, the symbol `(.)` is used to separate each of these.


Eg :-



No blanks spaces are left here and only a few special signs can be used.

Nevertheless, considering the rapid developments taking place in the Internet, web addresses of a slightly different form can be seen in the Internet.

We can open the web site by entering its web address in the relevant place of the web browser. Then we can see the Home Page of that web site and can explore the web site using hyperlinks. (When the mouse is on the hyperlink of the web page the mouse pointer will change into a hand sign).



Activity 3.2

Enter the websites below and explore the information in them and acquire some knowledge in this regard.

www.gov.lk www.moe.gov.lk
www.doenets.lk www.edupub.gov.lk

Finding information when web addresses/address is/are not known

The internet is updated quite quickly. While new web addresses are added every moment, the deletion of those existing also takes place. Therefore, the maintenance of a collection of necessary web addresses is not an easy task.

Hence, it is better to use search engines to find the necessary web sites. Search engines are type of web sites that give the addresses of web sites what we asked to search for.

Given below are a few popular search engines

www.google.com

www.yahoo.com

www.ask.com

www.altavista.com



Fig : 3.21 Google Home Page

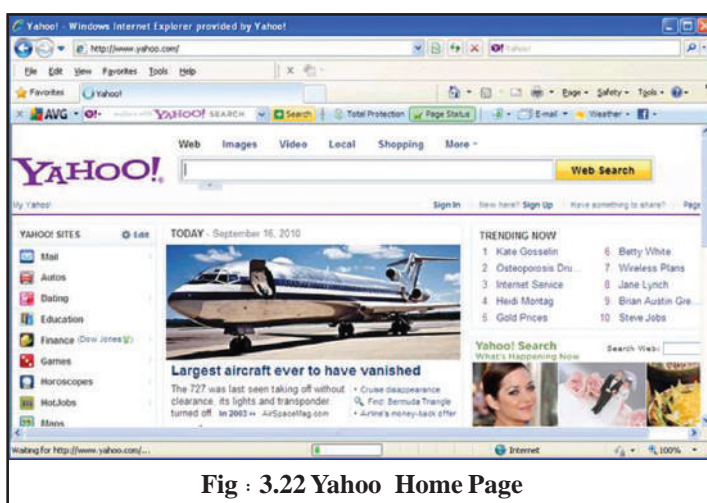


Fig : 3.22 Yahoo Home Page

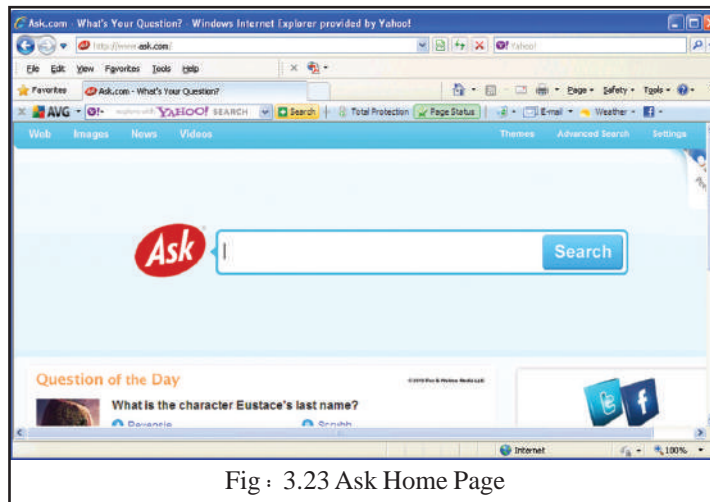


Fig : 3.23 Ask Home Page

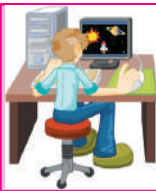
It can be seen that facilities necessary for our search have been included in the search engine. For example, not only can the details of the required websites be found but even search for images can be carried out separately as required.



Activity 3.2

Using any two search engines out of those described above, collect information on the topics below. When you perform this task note the difference in the results provided by these search engines.

1. The evolution of the computer
2. Computer Ergonomics
3. A diagram of the mother board of a computer.



Activity 3.3

1. Describe how you would save a picture on a web page in your computer.
2. Discuss how you can copy a picture to word processing software from a web page.
3. Describe how you would add text to word processing software from a web page.

Handling e-mails

Now let us consider how e-mail is used for communication.

Types of e-mail

When discussing about the e-mail service it needs to be noted that there are two main types of e-mail services.

- Paid e-mail services
- Free e-mail services

Paid e-mail services

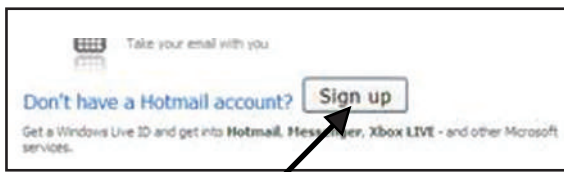
e-mail service that is provided by an Internet Service Provider (ISP) or e-mail service provider belongs to this category. In this instance you have to pay the organization in terms of the agreement for the service you are provided. (eg. Payment of a monthly rental)

Free e-mail services

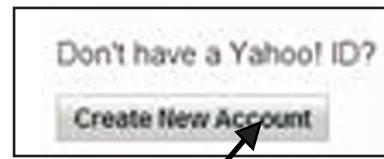
At present, e-mail facilities are provided by most internet websites. These services are in most instances, provided free of charge. HOTMAIL, YAHOO and GMAIL take the lead among those providing e-mail facilities.

Because the way most services providing e-mail services free of charge are similar in their performance, our explanation will be mostly based on YAHOO e-mail. (Nevertheless, remember, that along with the rapid developments of the Internet some of the example given here would be somewhat different from when the time you use them).

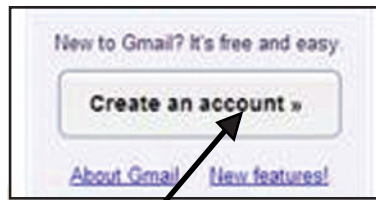
In free e-mail service, you should first go to the relevant website and create an e-mail account for you. For this purpose select 'Create a New e-mail Account' or similar option available there.



In HOTMAIL



In YAHOO



In GMAIL

What happens here is that you are provided a form for you to enter your details and the relevant particulars should be entered in it.

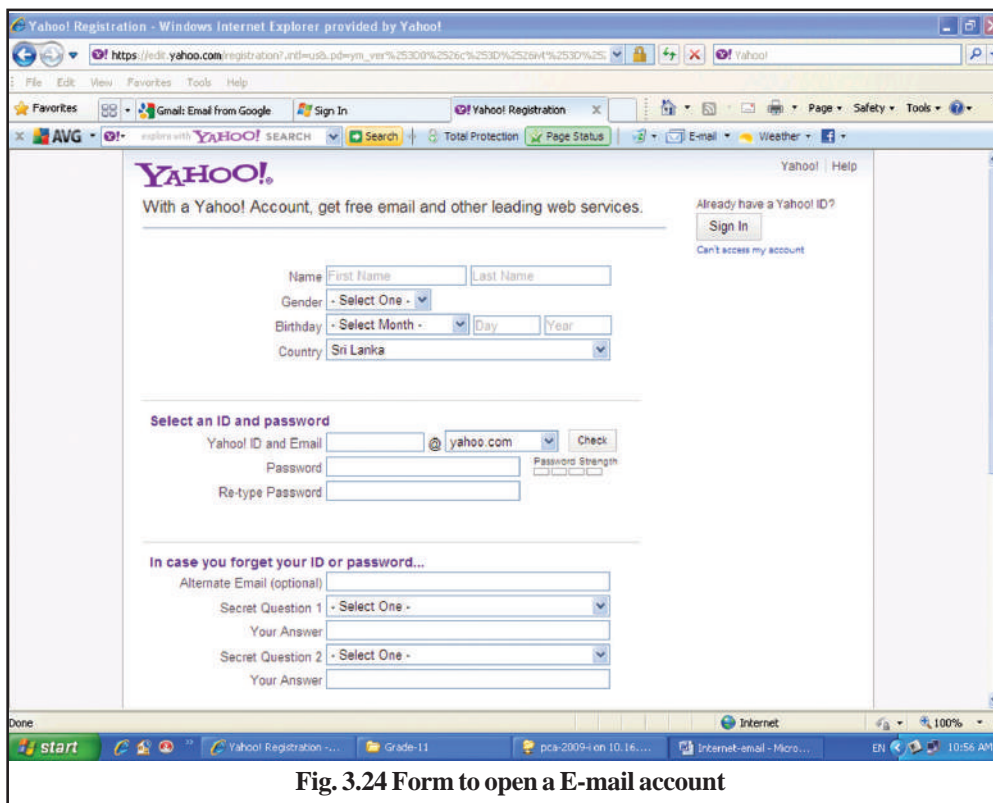


Fig. 3.24 Form to open a E-mail account

Here you have the opportunity of obtaining an e-mail address of your preference (if no other has obtained it by now).

It is essential that you should enter the special code given at the bottom of this form in order to confirm your identity (that you are a human practioner).

After the relevant details have been provided your e-mail account will be prepared and you proceed towards your e-mail service. Here you will be able to observe the receipt a welcome mail.



Fig : 3.25 After creating the e - mail account

In e-mail services, it can be noticed that separate mail boxes are assigned for different tasks. Brief explanations of the commonly used mail boxes are given below:

- Inbox** - Mails received to our e-mail account is placed in this box
- Drafts** - Letters prepared to be sent but could not be completed due to some reason
- Sent** - This is used to store mails sent by us
- Spam / Junk** - Junk mails received by us are placed here
- Trash / Deleted** - This mail box is used to keep the deleted mails

Checking to see whether e-mails have been received

Under normal situations when one opens the e-mail account one can view all the new mails received. Similarly it is possible to access the new mails received to the account by using the check mail button. In most e-mail services the Inbox gets automatically updated while one remains connected to the relevant service.

Sending e-mails

To send an e-mail, the "New" button or the "Compose mail" button should be used. When one of the buttons above is clicked, a dialogue box as below can be seen. The necessary information should be entered as required.

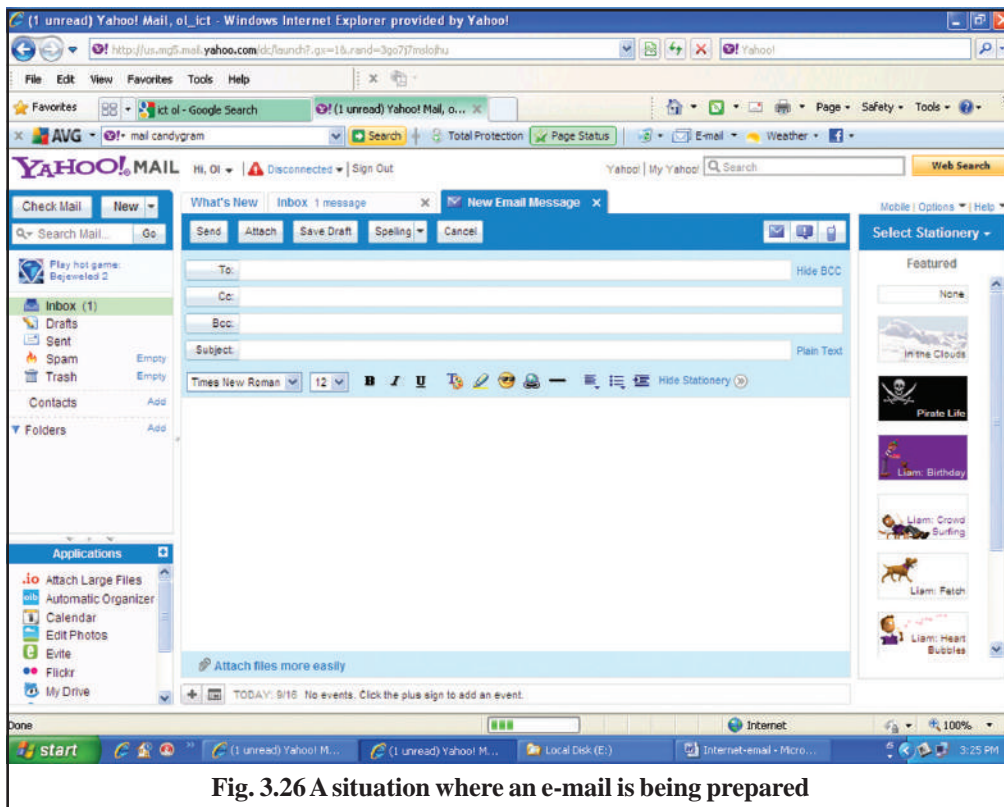


Fig. 3.26 A situation where an e-mail is being prepared

- To:** - The e-mail address of the recipient should be entered here. When copies of the letter need to be sent to several people, their addresses too should be entered here with commas to separate them.
- Cc:** - In instances where copies of a letter have to be sent to others other than the first individual. The relevant addresses can be entered here separated by commas.
- Bcc:** - This option is used in order to send a letter to several individuals. But there is a difference in how addresses are entered here than is the case when entering addresses in "To" and in "Cc".

The addresses entered in "To" and "Cc" are visible to everyone receiving the mail. That is, everyone receiving the relevant mail will be able to get to know the address of everyone else. But no one will be able to view the addresses entered in Bcc. That is no one can see the others the mail was sent.

- Subject:** - This is used to provide a topic for the mail. Always remember to enter short, suitable topic for mails. This will facilitate receiver to sort out your mails.

Afterwards the letter can be typed in the space left.

After providing the necessary information the mail can be sent to the relevant individuals by clicking on the "Send" button.

- Attachments** - when composing an e-mail, in the space provided for typing we can enter only what can be entered using the key board. How can a photograph or a voice be sent along with the e-mail ?

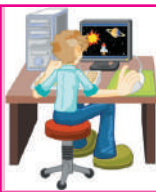
Attachments should be used for this purpose. Anything prepared on the computer can be sent along with attachments. That is any letter, spreadsheet, presentation, picture, sound, animation etc.. can be attached to an e-mail as an attachment.

Nevertheless relevant software should be installed in the computer to open attachments received. Otherwise, although it would be possible to download the relevant file, it will not be possible to view its contents.

For instance, when we receive a letter prepared using Word 2007, as an attachment, in order to open it, Word 2007 should be installed in our computer.

We can receive a number of other services in e-mail services. For example we might cite "Reply" to send a reply to a letter received over e-mail or "Forward" for the purpose of forwarding same to another.

There is an important task you have to perform in the use of an e-mail service. That is, existing e-mail service formally at the end of the task. For this purpose you can use the "sign out" option available there.



Activity 3.2

1. Prepare an e-mail account using one of the e-mail services provided free.
2. Note the conveniences and the inconveniences you experienced.
3. Teach another friend in your class how an e-mail account is prepared and take action to send an e-mail to that address.
4. Get a friend of yours and ask him to send you an e-mail, providing him/her with your e-mail address and send a reply to that letter.
5. Arrange to have that letter sent to several friends of yours.