UNIT:7	INTERNET & E-MAIL

1. INTRODUCTION:

Internet is a global system of interconnected computers through guided or unguided media that uses the standard protocol suite (TCP/IP) to serve billions of users world wide. It is also known as net. A network of networks, joining many government, university and private computers together and providing an infrastructure for the use of E-mail, bulletin boards, file archives, hypertext documents, databases and other computational resources. The vast collection of computer networks which form and act as a single huge network for transport of data and messages across distances which can be anywhere from the same office to anywhere in the world. It is network of networks that consists of millions of private, public, academic, business, and government networks of local to global scope that are linked by a broad array of electronically and optical networking technology. Internet is the net that is a technology which connects million s of computers across the world through communication media such as cables, telephone lines, and wireless technology. ARPANET (Advance Research Project Agency Network). It was developed by Department of Defense (DOD) in 1961 AD in US.

The server computers on the internet provides data and information on various topics like video clips, programs etc. to client computers. At the heart of the internet is a backbone of high speed data communication lines between major nodes or host computers, consisting of thousands of commercial governmental, educational and other computer system, that route data and messages.

Equipment used in internet/ components required to use internet:
1. Computer System
2. Networking hardware   :MODEM, NIC , Hub, Switch, Router etc.
3. Communication media   : Telephone Line/Cable/DSL (Digital Subscriber Lines)
4. Registration with ISP (Internet Service Provider) : MOS, Mercantile, W-link, NTC etc.
5. Internet programs (Web Browser): Internet Explorer, Netscape Navigator, Mozilla Firefox or Opera etc.

ADVANTAGES OF INTERNET:

1. Sharing Information: You can share information with other people around the world. The scientist or researchers can interact with each other to share knowledge and to get guidance etc. sharing information through internet is very easy cheap and fast method.

2. Collection of Information: A lot of information of different types is stored on the web server on the internet. It means that billions websites contain different information in the form of text and pictures. You can easily collect information on every topic of the world. For this purpose special websites, called search engines are available on the internet to search information of every topic of the world. The most popular search engines are altavista.com, search.com, yahoo.com, ask.com etc. The scientists, Writers, engineers and many other people use these sear h engines to collect latest information for different purposes. Usually, the information on the internet is free of cost. The information on the internet is available 24 hours a day.

3. News: You can get latest news of the world on the Internet. Most of the news papers of the world are also available on the Internet. They have their websites from where you can get the latest news about the events happening in the world. These websites are periodically updated or they are immediately updated with latest news when any event happens around the world.

4. Searching Jobs: You can search different types of jobs all over the world, most of the organizations/departments around the world, advertise their vacant vacancies on the internet. The search engines are also used to search the jobs on Internet. You can apply for the required job through internet.

5. Advertisement: Today, most of the commercial organizations advertise their product through Internet. It is very cheap and efficient way for they advertising of products. The products can be presented with attractive and beautiful way to the people around the world.

6. **Communication:** You can communicate with other through Internet around the world . You can talk by watching to one another; just you are talking with your friends in your drawing room. For this purpose , different services are provided on the Internet such as: Chatting , Video conferencing , E-mail, Internet telephony etc.

7. Entertainment: It is also provides different type of entertainments to the people. You can play games with other people in any part of the world. Similarly, you can see movies, listen music etc.

8. Online Education: Internet provides the facility to get online education. Many websites of different universities provide lecturers and tutorials on different subjects or topics. You can also download these lectures or tutorials in to your own computer. You can watch and listen these lectures repeatedly and get a lot of knowledge.

9. Online Railway, Airlines Schedule and Reservation: Many companies of Airlines and Railway provide their

schedule on the internet and the user can check the schedule and they can get online ticket using their Debit card.

10. Online Medical advice: Many websites are also available on the Internet to get information about different diseases. You can consult a panel of online doctors to get advice about any medical problem. A lot of material is also available on the internet for research in medical field.

11. E-Commerce: The process of buying or selling goods electronically is known as E-commerce. It is also referred to as E-Business. It is the most popular service of Internet. Some popular web sites use this E-business services of internet are: www.muncha.com.np, www.ebay.com, www.amanzon.com, www.kinmel.com.np etc.

DISADVANTAGES OF THE INTERNET:

1. Viruses: Internet is most popular source of spreading viruses. Most of the viruses transfer from one computer to another through email or other services of the internet. These viruses can create different problems in your computer such as data corrupt, software damage etc.

2. Security problem: The valuable website can be damaged by hackers and your valuable data maybe deleted. Similarly, confidential data may be accessed by unauthorized persons.

3. Immorality: Some websites contains immoral material materials in the form of the text, pictures, or movies etc. These website damage the character of new generation.

4. Filtration of information: When searching about any topic using search engine, a large number of related links are displayed .In this case, it becomes difficult to select the correct information about that topic.

5. Wastage of times: A lot of time is wasted to collect the information on the Internet. Some people waste a lot of time in chatting or play games. At home and offices, most of the people use internet without any positive purpose.

6. English language Problems: Most of the information on the Internet is available in English language. So, some people cannot avail the facility of Internet.

2. BRIEF HISTORY OF INTERNET:

History of the Internet began with advanced research projects agency (ARPA). ARPA was formed by department of defense (DOD) after the launch of Sputnik in 1957,by Soviet Union, Rossia. The purpose behind the formation of ARPA was to aid advancement in technologies for military use.

The first recorded description of the social interactions that could be enabled through networking was a series of memos written by J.C.R. Licklider of MIT in August 1962 discussing his "Galactic Network" concept. Licklider was the first head of the computer research program at DARPA, starting in October 1962. While at DARPA he convinced his successors at DARPA, Ivan Sutherland, Bob Taylor, and MIT researcher Lawrence G. Roberts, of the importance of this networking concept.

3. SERVICES OF INTERNET:

The Internet has many interesting things to discover. Using it for entertainment reasons is one of the easiest ways to have fun on your own schedule. It can also be used for work purposes such as faxing, email, and conference calling. With all of the available Internet services, you'll have instant access to the content you need.

- WWW
- E-mail
- File Transferring
- E-fax
- IRC
- Video Conferencing
- E-commerce
- News groups
- Remote Access

- **WWW:** WWW is stands as World Wide Web. The first two words 'World Wide' mean global distribution, and the last word 'Web' means in this context of network computing. It is the interlinked collection of information available on the Internet. It is also called Web. WWW is a series of services that are interconnected through hypertext. It consists of information about several topics in form of web page. It provides link in the web documents. WWW is a graphical hypertext way of using the Internet using the HTTP protocol for transmitting Web pages and other information over the Internet.
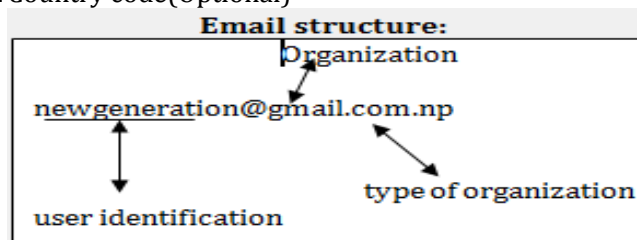 **Advantages of www:**
  - A link in a web document can be used to open other documents.
  - Web pages can contain pictures, buttons and even links to sound files in addition to text, thus allowing multimedia applications.
  - Sophisticated web document allow users to interact with applications through dialog boxes

and forms.

- **E-MAIL:** E-mail stands for electronic mail. It is most widely used feature on the internet. Sending and receiving messages electronically through the internet is called E-mail. We can exchange any message with the people around the world by using e-mail. It is very easy and quick means of communication available in the computer world. We can write an e-mail message in a mail program like Eudora, Microsoft Outlook Express, Netscape Navigator etc. and several web base programs like Yahoomail, Hotmail, Gmail and Zapakmail are also used to send and receive e-mail.

- **E-mail address**: Each E-mail address is identified by a unique name is called E-mail address. For example mailme@yahoo.com, ram@fewanet.com.np, etc. It has five parts they are as follows:
- Ram : User's name
- @ (At the rate) : A separator symbol
- Yahoo, fewanet : ISP address or domain name
- .com or .edu or .net : commercial or educational groups
- .np : Country code

Components of E-mail:
1. User identification.
2. Separator symbol
3. Name of organization a net provides email facilities.(Domain name)
4. Types of organization and net which is hosting mail server.(Top Level Domain name)
5. Country code(Optional)

Advantages of using E-mail:
- It is cheapest and fastest means of communication and as compared our conventional postal mail.
- It is more reliable than postal mail.
- E-mail can be accessed from any part of the world and at any time.
- Information can be share globally.
- We can send photos, songs, video clips and other file with e-mail attachments.
- A single mail can be send to multiple people at a time.

Disadvantages of using E-mail:
- Medium of Virus spreading
- Without internet not possible used.

- **E-fax:** E-fax stands for electronic facsimile. It is very powerful desktop application that allows us to send and receive faxes directly on our computer. It is very similar to e-mail. The E-fax first goes to the internet server then the internet server sends it to its destination whereas E-mail means first goes to the local file server.

E-Commerce:

E-commerce stands for electronic commerce. It is trading in products or services using computer networks, or Internet. It is also called electronic business. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, supply chain management and automated data collection systems. Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle, although it may also use other technologies such as e-mail. Naptol.com, amanzom.com, Nepali Commerce sites: Muncha.com, Yeskantipur.com, Rojeko.com, Thamel.com, Nepbay.com, Butwalfashion.com, Foodmandu.com etc. are the most widely used e-commerce sites.

NEWSGROUPS:

It is a service of internet which derived from e-mail, which allows the public debate on various issues. As part of this service, it is possible to follow the discussion on any topic or even start a new topic for discussion. Similar to the e-mail message is sent to all members of the group, and everyone signed on the group read the message and optionally answer them. Very practical and convenient to search for help in solving business problems.

Internet Relay Chat:

This service allows the Internet to one or more of Internet users who are hooked to the same channel at the same time see the text that you type on your computer, and the texts of other active users typing on his computer. Channels to 'talk' to exist for almost all areas of interest. This system is much faster than e-mail because it is conducted almost simultaneously send and read messages, but it is much more expensive than e-mail, because it requires a long term connection with the Internet, but only for those who pay for this service out of his own pocket.

Telnet : Internet service that allows the user logs on and runs on a remote computer and use programs installed on the remote computer. Of course, the remote computer must be enabled in the user access rights to the computer. For security reasons this service on many servers is not allowed. It is also called remote accession. It is better to say that the Telnet 'Terminal Emulation' software support, which to communicate with a computer connected via a TCP / IP stack. Thus, the emulator work former unit called 'Terminal' (from the mainframe era). This same role today better performed by programs that use **SSH** (**S**ecure **Sh**ell) connections over TCP / IP as the carrier of connection, but all traffic is encrypted. Although this mechanism provides plenty of security in the work with the server, system administrators are reluctant to make this service available to all users.

Video Communication:

Internet networking service that allows users to voice / video communication. This implies that the devices that use this service have built-in camera and microphone. Although this service is usually used for that purpose, in addition to communicate written messages, internet calls, sharing information and much more. Can be used as a common telephone communications. This service is based on the free program support allows free calls to anyone who has installed a 'Skype' program support on his computer, anywhere in the world.

3. SOME TERMS RELATED TO THE INTERNET:

- **Search Engine :**

The internet provides access to a wealth of information on countless topics contributed by people through the world. Search engine is the special type of web site that supports to search several topics on the internet on the basis of keywords or combination of keywords. It is a searchable database of internet files collected by a computer program. To conduct a search on the Internet, a special search tool is known as search engine. A search engine is a searchable database of Internet files collected by a computer program called spider or crawler or wanderer. Some Search engines are Google.com, Yahoo.com, Excite, Altavista.com, infoseek.com, bing.com, inference.com etc.

- **Web site:**

A Website is a collection of several interlinked web pages that contains the information about particular topics or subjects of any company or organization. Website is a location of the web pages created by any organizations, universities and government agencies to provide information regarding them like: www.bbc.co.uk/nepali, www.nepalnews.com, www.cct.edu.np etc. It is identified by its unique name called URL (Uniform Resource Locator). Each website has its own address or URL is also called internet address. Some other examples of web sites are: www.ekantipur.com, www.msn.com, www.nepalnews.com.np, www.scanwith.com, www.nepalisong.info, www.ntc.net.np, www.cnet.net, www.cybersansr.com.np etc.

- **URL:**

    URL stands as Uniform Resource Locator. It is an internet address that identifies a particular internet resource. Each resource present in the World Wide Web has an URL.

- **Web pages**:

Webpage is a collection of information that is stored in website. The www consists of huge collection of documents with related website called webpage. A web page is presented by using several media elements like text, image, video, audio and animations which can be created by using scripting languages like HTML, PHP, JAVA etc. Webpage provides vast collection of information of related websites. It provides informations about a person, an organization or any company.

- **Home page:** The home page is the first hypertext document regarding the web address displayed when a user connects to any web server. It is the starting page of a web site that we can see when loaded the web site on the web browser. A homepage of a web site provides an overview of contents of web site. It is also known as Index page.

- **Web Browser:**

Web Browser is client software that allows the users to display and interact with the web page. It is a   type   of software or program that allows user to display the contents of the web pages. It is also referred to as Network client program. For example: Internet Explorer, Netscape Navigator, Mozilla Firefox, Lynx, Google Chrome, Opera

etc.

- **Web server:**

Web server is a site on which the web pages are kept. It is a server computer that responds to requests from web browsers to relative resources. Web server is a powerful computer which stores all the documents, files and web pages on the network. It provides several services to the client to access information according to their requirements.

- **Domain name**:

It is a name of specific internet area controlled by any organization, company or government. Domain names are names assigned to systems, in addition to IP addresses, to facilitate easy recall of Web pages. However, the domain name has to mapped to the respective IP address for IP communication. Internet has a hierarchical domain name system. The Internet has two types of top-level domains, generic and country-specific.

- **ISP(Internet Service Provider):**

Internet Service Provider (ISP) is a company that provides individuals or companies access to the internet and the World Wide Web. Mercantile, NTC, World Link, Broad Link, Tec mind , Ncell, UTL ,Namchhe etc. are popular ISPs of Nepal.

- **Firewall:** software or hardware that limits the certain kinds of access to a computer from the internal network or external network.

6. E-GOVERNANCE:

The word "electronic" in the term e-Governance implies technology driven governance. E-Governance is the application of Information and Communication Technology (ICT) for delivering government services, exchange of information communication transactions, integration various stand-one systems and services between Government-to-Citizens (G2C), Government-to-Business(G2B),Government-to-Government(G2G) as well as back office processes and interactions within the entire government frame work. Through the e-Governance, the government services will be made available to the citizens in a convenient, efficient and transparent manner.

7. WHAT IS OUTLOOK EXPRESS?

Outlook Express is an email program developed by Microsoft Corporation that lets you store , manage, send and receive email messages. There are several such email programs such as Windows Mail Vista, Windows Live mail, Outlook Express etc. available and Outlook Express is probably the most popular of them all. It is free and comes bundled with internet explorer web browser. So, when you install Internet Explorer you get the free email program tool, like Outlook express This Outlook Express is also called an Email Client. This product is typically bundled with Microsoft Windows (Windows 98 , Windows XP and other versions). Outlook Express is a different application from Microsoft Outlook. Outlook Express uses the Windows Address Book to store contact information and integrates tightly with it. On Windows XP, it also integrates with Windows Messenger. Outlook Express is compatible with POP3 and IMAP mail clients and has a built in newsreader. It's feature Microsoft Exchange uses a proprietary email formatting for attachments. It supports to send and receive e-mail from user e-mail .

Advantages of Outlook Express:

1. **Availability of Email Online Offline both:** Other web based email services such as Hotmail, Gmail or Yahoo Mail requires an active internet connection to login to the account .With Outlook Express, the program will automatically connect to your account, download email and store them on your computer, Since, now the messages are on your local machine they are available to you even without an internet connection.

2. **Save time by downloading email from various accounts:** If any body has multiple email account then there is no need to check each email account separately. Multiple accounts can be set up in Outlook Express which means email from all these accounts will be downloaded together at once place on the computer.

3. **A copy of your emails on your computer:** The most important features of Outlook Express is **:** it has ability to store a copy of all email on the computer system.

Components of MS-Outlook Express:

Menu Bar: The menu bar contains a list of options to manage and customize email. Using the view menu, you can change the display of the email client window. For example: you can sort email message according to most recent message, by sender, by unread message and more etc. and show /hide toolbars.

Toolbar: Toolbars mat be customized to display most commonly used tools.

Inbox: The inbox displays a list of received messages. Each message header shows you who send the mail, the subject line, the time and date it was sent, and at times, the size of the message.

Preview Pane: This provides you a preview pane and it contains show, hide or resize the folder list and panes feature.

Creating New Email Account in MS-Outlook Express:

To send and receive emails using outlook Express , we first need to set up an email account.This is accomplished by providing certain details to the software so that it can connect to the email server, log in at the designated account and download/send all messages. You thus, need to create an account in Outlook Express to download and send message.

Steps for creating new email accounts in Outlook Express and using these account we can sent and receive emails.

Step:1: Click on Microsoft Office Outlook from any version of MS-Office package.

Step:2: Click on Tools in the menu bar and then go to Accounts.

Step:3: This brings up the Internet Accounts Pop-up window. Click on the Mail tab, to bring it to the front if it is not already so. For the beginners there would not be any email accounts listed on this window.

Step:4: To add new mail account, click on the Add button and then on Mail.

Step:5: This brings up the Internet connection wizard pop-up window. Enter your name in the Display Name field and click on the Next Button.

Step:6: The wizard now arks for your email address. Enter the full email address and click on the Next button.

Step:7: In the next window, you need to feed in three important informations: The incoming and outgoing   email servers and the type of the incoming email server. You can get he server name from service providers also.

Step:8: The last information that you need to enter username and password for that email account. These login details would have been given to you by your Internet Service provider or you can set these online using a control panel. After completing the fields for Account Name and Password, click on the Next Button.

Step:9: Click on the finished button to complete the process of setting up a new email account in outlook express. Now you can see the new account has been added to the Accounts list.The account is referred by its server name.

8. INTRANET:

The private network structure is intranet. It may exist as LAN or WAN or other form. But it is secured isolated private network structure. An intranet is a private computer network that uses Internet Protocol technology to securely share any part of an organization's information or network operating system within that organization. Sometimes the term refers only to the organization's internal website, but may be a more extensive part of the organization's information technology infrastructure. It may host multiple private websites and constitute an important component and focal point of internal communication and collaboration. An intranet is built from the same concepts and technology used for the Internet, such as client–server computing and the Internet Protocol Suite (TCP/IP). Any of the well known Internet protocols may be found in an intranet, such as HTTP (web services), SMTP (e-mail), and FTP (file transfer protocol). It may consist of many interlinked local area networks and also use leased lines in the wide area network. Typically, an intranet includes connections through one or more gateway computers to the outside Internet. The main purpose of an intranet is to share company information and computing resources among employees. An intranet can also be used to facilitate working in groups and for teleconferences.

9. EXTRANET:

An extranet is a computer network that allows controlled access from the outside, for specific business or educational purposes. An extranet can be viewed as an extension of a company's intranet that is extended to users outside the company, usually partners, vendors, and suppliers. It has also been described as a "state of mind" in which the Internet is perceived as a way to do business with a selected set of other companies (business-to-business, B2B), in isolation from all other Internet users. In contrast, business-to-consumer (B2C) models involve known servers of one or more companies, communicating with previously unknown consumer users. An extranet is like a DMZ in that it provides access to needed services for channel partners, without granting access to an organization's entire network.

10. NETWORK PROTOCOL:

Protocol is a set of rules and procedures which is used for governing to the exchange of data and information over a communication Networks. It is a set of technical guidelines that governs the signal transmission between equipment's. It is an agreement established for the computers to make communication possible . These rules include the guidelines that regulate the access method allowed physical topologies , cables and speed of data transfer. It is one of the networking software which controls, manages and regulates the use of communication network.

- TCP/IP   * HTTP
- SMTP   * POP
- IMAP   * FTP
- ARP   * IPX
- SPX   * Apple Talk

- NetBEUI   * UDP

❑ **TCP/IP: Transmission Control Protocol   /   Internet Protocol**
- Set of communication protocols used for the internet and other similar networks.
- Controls & manages transferring of data on the network.
- It is the native protocol of Internet.

❑ **HTTP: Hypertext Transfer Protocol**
- Used to communicate between Web clients and Web servers.

❑ **FTP: File Transfer Protocol**
- Used to transfer data and files from one computer to another on the internet.

❑ **IPX: Internetwork Packet Exchange**
- Used in Novell Netware Operating system network.
- Provides network addressing and routing.

❑ **SPX: Sequenced Packet Exchange**
- Used in Novell Netware Operating system network.
- Provides connection -oriented transport layer packet delivery.
- It is an extension of IPX protocol.

❑ **Apple Talk:**
- Provides network support to Macintosh operating system.
- Apple computers have their own set of protocols such as ATP (Apple Talk Transaction Protocol), ADSP (Apple Talk Data Stream Protocol) etc.

❑ **NetBEUI:Net BIOS extended User Interface**
- Used in small size local area network(LAN).

❑ **UDP: User Datagram Protocol**
- It is alternative TCP.
- Used to transfer data units/messages from one computer to another.