ICT for Library and Information Professionals:
A Training Package for Developing Countries

Editor: Professor Andrew Large
McGill University, Canada

Module 5

The Internet as an Information Resource

Lourdes T. David

Information and Informatics Unit
UNESCO Bangkok
Thailand 2002

Lourdes T. David
Web Page Concept and Design: Getting a Web Site Up and Running. Module 6. Bangkok, UNESCO Information and informatics Unit, 2002.

1. World Wide Web 2.Web page 3. Web site

1. Title.

Teacher's Guide

Module 5. The Internet as an Information Resource

Introductory note

This is Module 5 of the *ICT for Library and Information Professionals (ICTLIP) Training Package for Developing Countries*. This Package is intended to provide the knowledge and skills required to deal with the application of ICT to library and information services. It is meant for library and information personnel who may become trainers in the area. The Package has been developed by the UNESCO Asia & Pacific Regional Office with funding from the Japanese Fund in Trust for Communication and Information. It contains six modules:

Module 1 - Introduction to Information and Communication Technologies
Module 2 - Introduction to Integrated Library Systems
Module 3 - Information Seeking in an Electronic Environment
Module 4 - Database Design, and Information Storage and Retrieval
Module 5 - The Internet as an Information Resource
Module 6 - Web Page Concept and Design: Getting a Web Page Up and Running

All the modules have a Teacher's Guide and a Student's Guide. The Student's Guide may be copied by the students in electronic format. The Teacher's Guide should not be distributed to the students.

The Teacher's Guide includes the following:

- Module Introduction
  - Introductory note
  - Learning outcomes
  - General guidelines for teachers
  - Course outline
  - Learning environment
  - Duration
  - Course content and schedule
  - Course evaluation
  - Selection criteria for participants
  - Typographical conventions
- Lessons
  - PowerPoint slides
  - Teaching tips
  - Activities
  - References and recommended further reading
- Glossary
- Evaluation forms

The Student's Guide contains the following:

- Module Introduction
  - Introductory note
  - Learning outcomes
  - Course outline
  - Learning environment
  - Duration
  - Course content and schedule
  - Typographical conventions
- Handouts: Lessons 1-7
- Glossary
- Activities
- List of references

Learning outcomes

Module 5 is designed to enable participants to acquire knowledge and skills that will help them train other information professionals to use the Internet.

By the end of the course, students should be able to:

1. Identify Internet tools and resources
2. Utilize Internet search tools and services
3. Evaluate Internet tools and resources
4. Cite properly the information found on the Internet
5. Address the trends and issues concerning the Internet
6. Use the Internet as an information resource

Note: The content of Module 1 must be understood by all students (either by students first completing Module 1, or as a result of prior knowledge of ICT) before they proceed with the remaining five modules in the *ICTLIP Training Package*.

General guidelines

1. Speak slowly and clearly to ensure that students can follow you – this is especially important if some or all the students do not have as their first language the language in which you are instructing.
2. Do not read your lecture noted verbatim – this is a sure way of losing your students' attention.
3. Always show an interest in what you are teaching – if you do not seem interested in the content, why should the students be interested.
4. The Modules have been carefully planned, with exercises and discussions as well as lectures. Try to follow the schedule as set out in the Module.
5. Try to use examples as often as possible to explain concepts. If the examples are taken from the students' own countries or regions, so much the better.

6. Try to keep within the daily timetable recommended for the Module – if you get behind in one lesson it may be difficult to make up time in a later lesson. Avoid extending the class beyond the time period allotted.
7. Be prepared to use back-up materials if for any reason the computer will not function during a lesson.
8. Try to answer all questions from students positively – never make students feel stupid for having asked a question, or they may never ask another question again. But if you do not know the answer to a question, it is better to admit it than to try and bluff.
9. Make sure that all equipment needed for a lesson is working properly before the lesson begins – things can often go wrong!
10. Be ready to stay behind for a few minutes after each lesson to answer questions that students may have but that they did not wish to ask in class.
11. The evaluation of the Module by the students is meant to help you improve your teaching and should be seen in this light rather than as a criticism of yourself. Make use of it to do an even better job next time.

Course Outline

Lesson 1. How the Internet works

Scope

1. What is the Internet?
2. What are the major Internet Tools and services?
3. What is the Internet's history?
4. What are the basic Internet concepts, terms and technologies?
5. How does the Internet work?

Objectives

By the end of the lesson, students should be able to:
1. Define what is the Internet
2. Identify the major Internet tools and services
3. Discuss briefly the Internet's history
4. Understand basic Internet concepts, terms and technology
5. Describe how the Internet works

Lesson 2. How to search for information on the Internet

Scope

1. What are the ways to find information on the Internet?
2. What are the Internet search tools and services?
3. How to use the Internet tools and services?
4. How to find information on the Internet?

Objectives

By the end of the lesson, students should be able to:
1. Identify the Internet search tools and services
2. Understand how to utilize the Internet tools and services
3. Use the Internet search tools and services
4. Locate tutorials and other Web based training materials on how to use the Internet as an information resource

Lesson 3. Ethical, legal and other issues involved in using the Internet as an information resource

Scope

1. How to evaluate information resources on the Internet?
2. How to cite properly the information resources found on the Internet?
3. What are the ethical, legal and other issues involved in using the Internet?
4. What are the trends concerning the Internet?

Objectives

By the end of the lesson, students should be able to:
1. Evaluate information resources on the Internet
2. Cite properly the information resources found on the Internet
3. Address ethical, legal and other issues involved in using the Internet
4. Identify Internet trends

Learning Environment

The training room must have the facilities and technical support required to carry out the course. It should have computers with CD-ROM drives and online access to the Internet and other resources such as OPACs and CD-ROM databases. The Module should be conducted by a teacher who is knowledgeable and skilled in using computers, the Internet, CD-ROMs and a variety of electronic resources, and who is skilled in teaching courses of this nature.

Duration

The Module is designed for a one-week course of 40 hours: eight hours per day for five days.

Course content and schedule.

Day	Lessons
Day 1	Lesson 1. How the Internet works
Day 2 - 4	Lesson 2. How to search for information on the Internet
Day 5	Lesson 3. Ethical, legal and other issues involved in using the Internet as an information resource

Selection criteria for participants (participants profile)

Participants should be working in a library or information center, or in a school of library and information science. Participants with a degree in library and information science are preferred. Participants should normally have:

- A degree in library and information science or at least two years' experience working in a library
- A working knowledge of English
- A working knowledge of using computers in a Windows environment

Course evaluation

At the end of the course, ask your students to evaluate the course. The evaluation forms are included in this Guide.

Typographical conventions

Note

General note to the teacher and additional information

Tip

Teaching tips and supplemental materials

Activity

Activity for the students

Reference

Reference and further reading materials

Glossary

Glossary of terms used in the module

Lesson 1

How the Internet works

Teacher's Guide

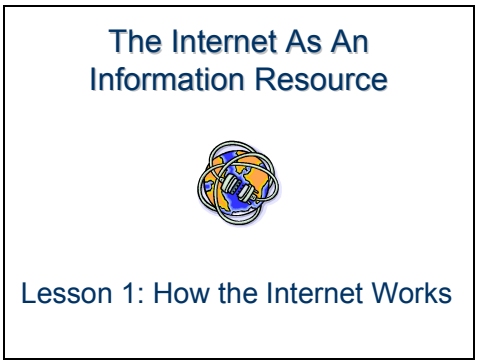
Module 5. The Internet as an Information Resource

Lesson 1. How the Internet works

Note

The Teacher's Guide provides notes and tips for the PowerPoint presentation that you will use in conducting the course.

Slide 1



Tip

Ask the students what their concept of the Internet is and if any of them have used it before and for what purpose. After that, ask them if they have an idea of how the Internet works. This can serve as a motivation activity that will let them think ahead, and share their knowledge and experiences with regards to the subject matter, with you and their fellow students.

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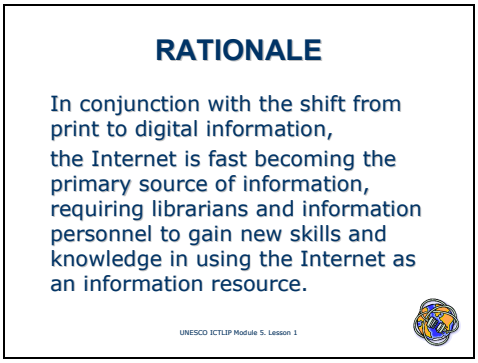

Rationale

In Asia many librarians have not obtained adequate training in the use of the Internet as an information resource. However, with the shift from printed to digital format, as well as a lot of

users and researchers becoming more and more reliant on the Internet as an information resource, it is imperative that librarians obtain adequate training in its use in order for them to cope with the challenges and take advantage of the features of the Internet.

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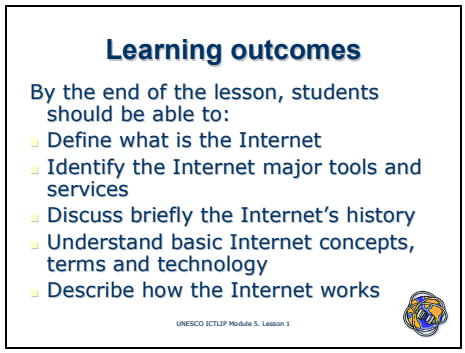

Learning outcomes

By the end of the lesson, students should be able to:
1. Define what is the Internet
2. Identify the major Internet tools and services
3. Discuss briefly the Internet's history
4. Understand basic Internet concepts, terms and technology
5. Describe how the Internet works

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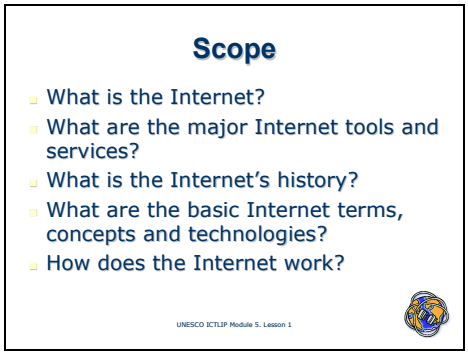

Scope

1. What is the Internet?
2. What are the major Internet Tools and services?
3. What is the Internet's history?
4. What are the basic Internet concepts, terms and technologies?
5. How does the Internet work?

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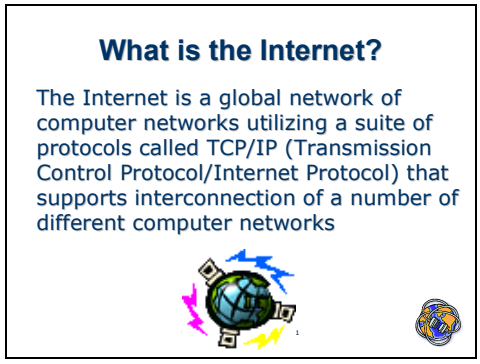

What is the Internet?

The Internet is a global network of computer networks utilizing a suite of protocols called the TCP/IP (Transmission Control Protocol/Internet Protocol) that supports interconnection of a number of different computer networks.

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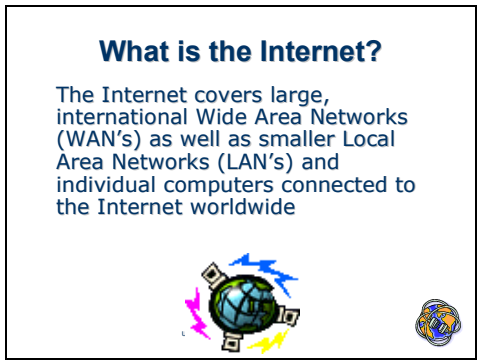

The Internet covers large, international Wide Area Networks (WAN's) as well as smaller Local Area Networks (LAN's) and individual computers connected to the Internet worldwide

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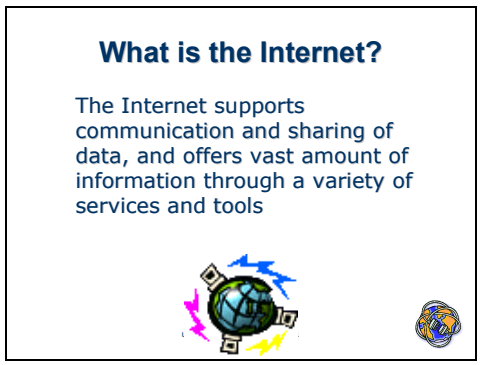

The Internet supports communication and sharing of data, and offers a vast amount of information through a variety of services and tools

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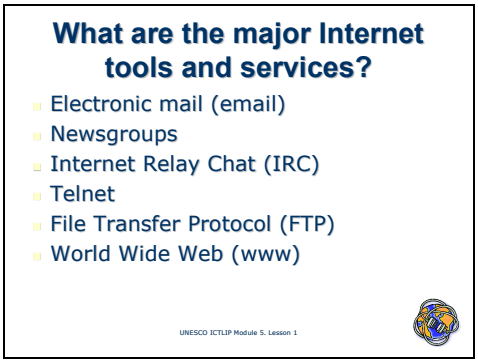

What are the major Internet tools and services?

The Internet has several tools and services that make it ideal as an information resource. Each of these features has its own merits and therefore should be utilized depending on the type of information one needs to access.

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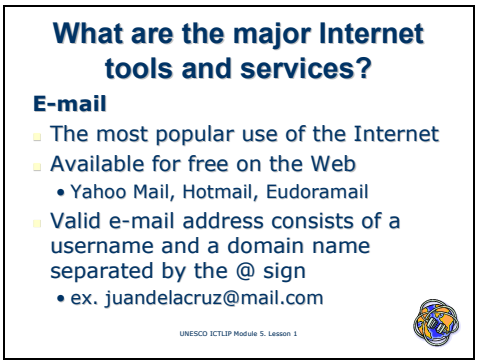

E-Mail

By far the most popular service available on the Internet, e-mail as a form of correspondence has revolutionalized the way we communicate with each other. It stands for "electronic mail, a way of sending messages from one computer to another. Its ability to send files through *attachments* also factors in its popularity. Readily available, and in most cases free of charge, this speedy alternative to postage mail comprises the bulk of traffic on the Internet. Almost all 'Net users have at least one e-mail address, and in some cases, several addresses. It has also become the most basic form of identification on the Internet, with a lot of websites requiring an e-mail address before offering services.

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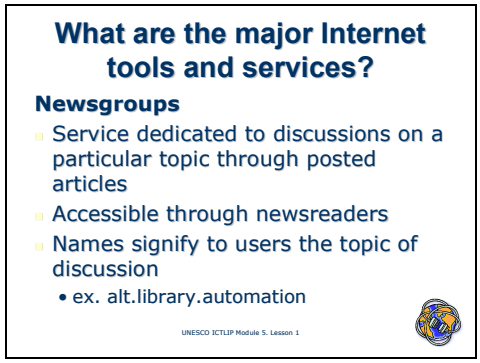

Newsgroups

Newsgroups are an online forum for discussion of related topics, accessible by a newsreader. Some newsgroups allow postings or messages from anyone, while others are moderated (postings are screened). Several university departments have also set up newsgroups for specific issues and class use. On the Internet, there are literally thousands of newsgroups covering every conceivable interest.

To view and post messages to a newsgroup, you need a news reader, a program that runs on your computer and connects you to a news server on the Internet.

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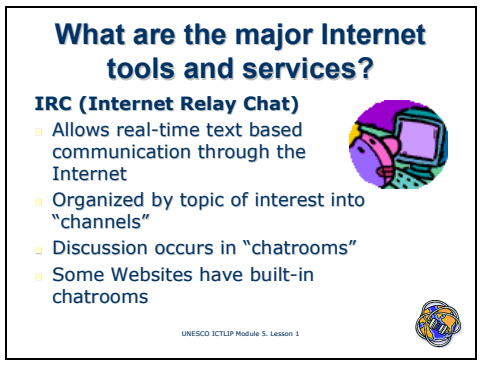

Internet Relay Chat

Using chat is like "talking" to other people who are online at the same time as you are. Special software allows typed-in messages to be viewed by everyone taking part at that time. Chats can be ongoing or scheduled for a particular time and duration. Most chats are focused on a particular topic of interest and some involve guest experts or famous people who "talk" to anyone joining the chat. Topics of interest are organized into "channels", facilitating specialized chat sessions that occur in chatrooms. More advanced forms of chat use sound cards to allow voices, and 2D or 3D characters called "avatars" to represent the participants. Some websites have built in chatrooms enabling on-site chatting.

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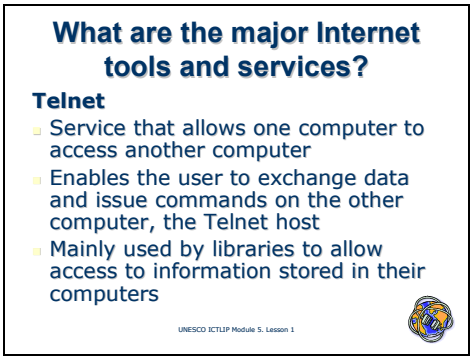

Telnet

Telnet is client software allowing a user to login from a local desktop computer to a remote server, the Telnet host, and use its resources. Usually access is controlled by passwords given to each individual or group. Once access is given, the remote user can issue commands or use the resources of the host, depending on the level of access given the user. Mainly used by libraries to allow access to information stored in their computers

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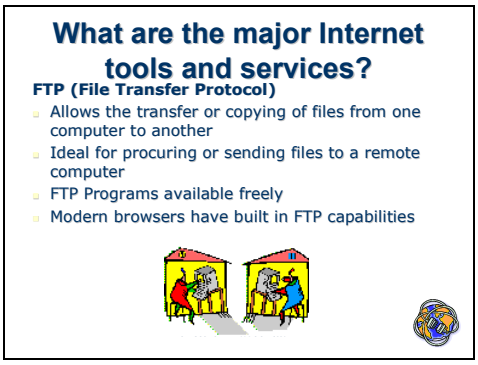

File Transfer Protocol

File Transfer Protocol or FTP is an Internet utility that allows the transfer of files from one location to another. In order to do this, one must have an FTP program to connect to other servers and be able to download files. These FTP programs are available both commercially and for free, and offer various features. Most modern web browsers have built in FTP capabilities enabling downloads through websites.

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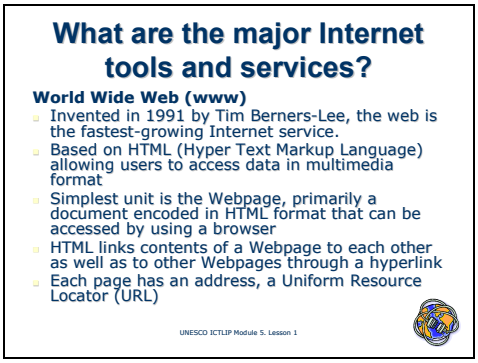

World Wide Web

The World Wide Web (WWW or W3) was invented by Tim Berners-Lee in 1991 and further developed at the CERN labs in Switzerland in the early 1990s. It is a vast collection of interconnected files and programs spanning the globe and retrievable via a client-server system utilizing HTML (Hyper Text Markup Language) enabled documents called webpages. It is responsible for the so called Internet boom, transforming it from a largely academic domain into a commercial one. It has grown to encompass not only its native http protocol, but also ftp, newsgroups, e-mails, chat and telnet. In fact, because of this most people equate the Web with the Internet .

The Web is accessed by programs called browsers (e.g., Netscape Navigator or Internet Explorer). These browsers enable webpages and websites containing multimedia content and applications to be accessed anytime, anywhere. Users navigate the Internet by following links from one document to other documents on computers located anywhere on the globe. These links are called hyperlinks, and connect the contents of Webpages to each other as well as to other Webpages identified by their URLs.

Activity 1-1

Visit the following sites:

1. Learn the Net: The Animated Internet
   http://www.learnthenet.com/english/animate/animate.htm
2. A Basic Guide to the Internet
   http://library.albany.edu/internet/internet.html

Tip

Visit these sites:

1. Internet 101.org. Scott Cottingham. http://www.internet101.org/
2. BBC Becoming WebWise Online Course for Beginners.
   http://www.bbc.co.uk/webwise/learn/menu.shtml

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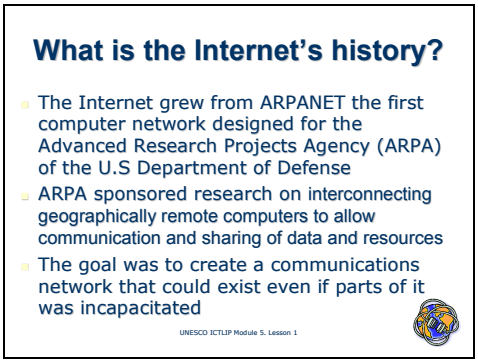

What is the Internet's History?

The Internet grew from ARPANET, the first computer network designed for the Advanced Research Projects Agency (ARPA) of the U.S Department of Defense. ARPA sponsored research on interconnecting geographically remote computers to allow communication and sharing of data and resources. The goal was to create a communications network that could exist even if parts of it were incapacitated.

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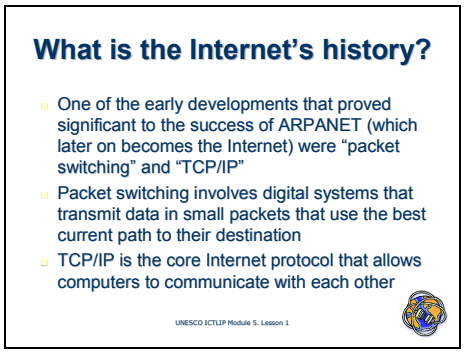

What is the Internet's History?

One of the early developments that proved significant to the success of ARPANET (which later on becomes the Internet) were "packet switching" and "TCP/IP". Packet switching involves digital systems that transmit data in small packets that use the best current path to their destination. TCP/IP is the core Internet protocol that allows computers to communicate with each other.

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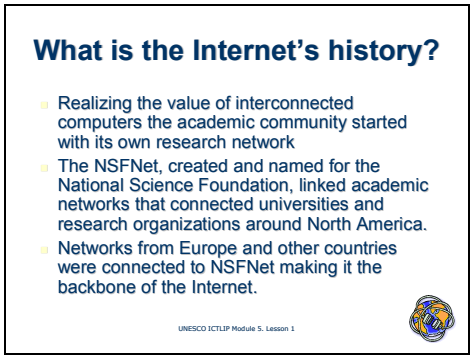

What is the Internet's History?

Realizing the value of interconnected computers the academic community started with its own research networks. One of these academic networks is NSFNET. NSFNET, created and named for the National Science Foundation, linked academic networks that connected universities and research organizations around North America. Later on, networks from Europe and other countries were connected to NSFNET, making it the backbone of the Internet.

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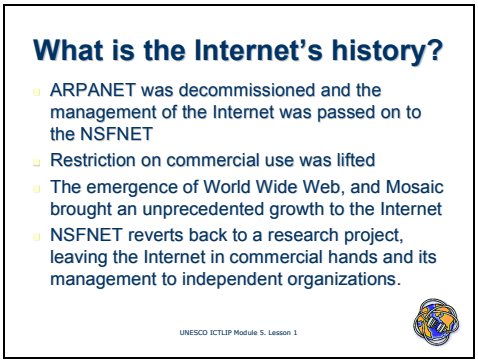

What is the Internet's History?

ARPANET was decommissioned and the management of the Internet was passed on to the NSFNET. NSFNET lifted the restriction on commercial use, which contributed to the Internet's growth as well as to its commercialization. This significant development was followed by the emergence of the World Wide Web, and later on Mosaic, the first graphical browser, that brought an unprecedented growth to the Internet. Eventually, NSFNET reverted back to a research project, leaving the Internet in commercial hands and its management to independent organizations.

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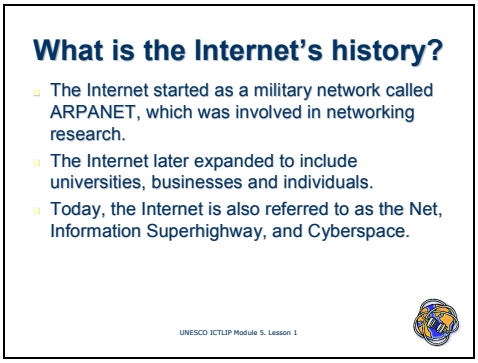

What is the Internet's History?

The Internet started as a military network called ARPANET, which was involved in networking research. The research involved the creation of standards and protocols that will support interconnection of a number of computer networks. It also involved the creation of applications and technologies that utilize current and emerging technologies. This process continues as the Internet grows dynamically.

The Internet later expanded to include universities, businesses and individuals. However, the Internet only started to gain popularity with the casual computer user in the 1990s, with the creation of the World Wide Web, followed by the introduction of Mosaic, the first graphical Web browser. Today, the Internet is also referred to as the Net, Information Superhighway, and Cyberspace.

Activity 1-2

Visit the following sites to know more about the Internet's history:

1. A Brief History of the Internet and Related Networks. Vint Cerf. http://www.isoc.org/internet/history/cerf.shtml
2. The History of the Internet. Dave Kristula. http://www.davesite.com/webstation/net-history.shtml

Tip

Read more about the Internet's History:

1. All About The Internet: History of the Internet. Internet Society (ISOC). http://www.isoc.org/internet/history/brief.shtml
2. History and Development of the Internet: a Timeline. Rhonda Davila. http://www.sat.lib.tx.us/Displays/itintro.htm
3. The Living Internet. William Stewart. http://livinginternet.com/

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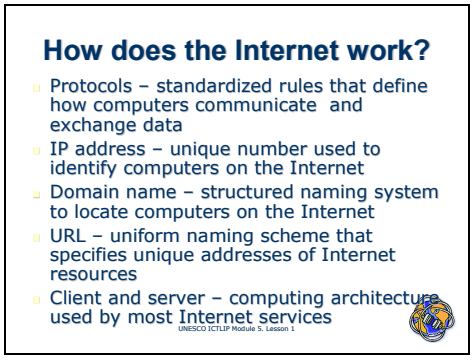

How does the Internet work?

The following are some of technologies that make the Internet work:

- Protocols – standardized rules that define how computers communicate and exchange data
- IP address – unique number used to identify computers on the Internet
- Domain name – structured naming system to locate computers on the Internet
- URL – uniform naming scheme that specifies unique addresses of Internet resources
- Client and server – computing architecture used by most Internet services

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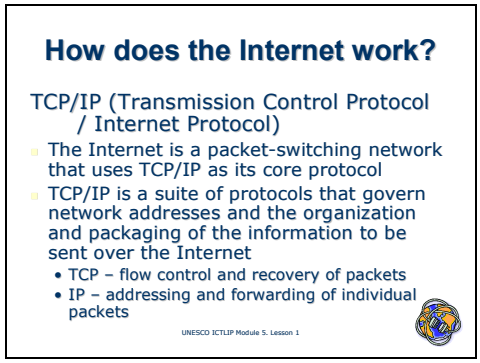

TCP/IP (Transmission Control Protocol / Internet Protocol)

The Internet is a packet-switching network that uses TCP/IP as its core protocol. TCP/IP is a suite of protocols that govern network addresses and the organization and packaging of the information to be sent over the Internet. Transmission Control Protocol (TCP) handles the flow control and recovery of packets, while Internet Protocol (IP) is responsible for addressing and forwarding of individual packets.

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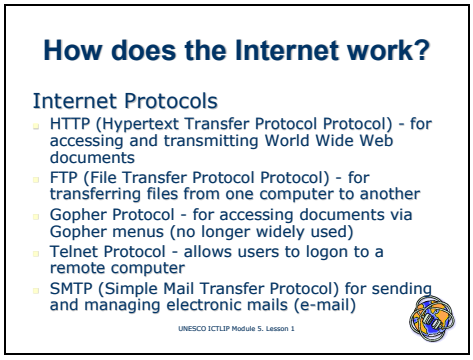

Internet Protocols

Below are some of the Internet Protocols used by Internet tools and services:

- HTTP (Hypertext Transfer Protocol) – a protocol for accessing and transmitting World Wide Web documents
- FTP (File Transfer Protocol) – a protocol for transferring files from one computer to another
- Gopher Protocol – a protocol for accessing documents via Gopher menus (no longer widely used)
- Telnet Protocol – a protocol that allows users to logon to a remote computer
- SMTP (Simple Mail Transfer Protocol) – a protocol for sending and managing electronic mails (e-mail)

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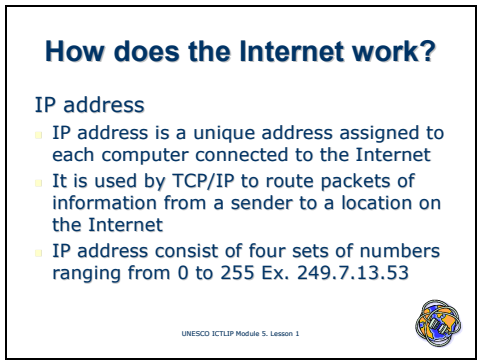

IP address

Unlike local computer networks, which are centrally controlled, the Internet is decentralized by design. Its operators can choose which Internet services to use and which services to make available to the global Internet community. Each Internet computer, called a host, is independent and has a unique address, called the IP address. TCP/IP uses the IP address to route packets of information from a sender to a location on the Internet. The IP address consist of four sets of numbers ranging from 0 to 255, Ex. 249.7.13.53

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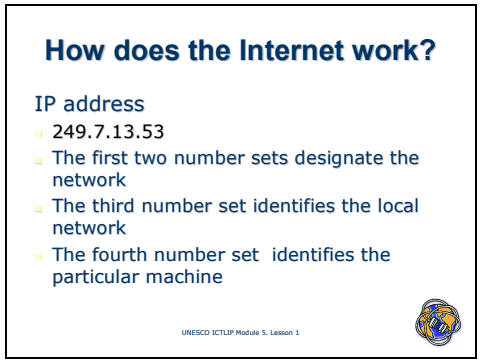


IP address

- **249.7.13.53 (Example IP address)**
- The first two number sets designate the network
- The third number set identifies the local network
- The fourth number set identifies the particular machine

Activity 1-3

Read the following articles:

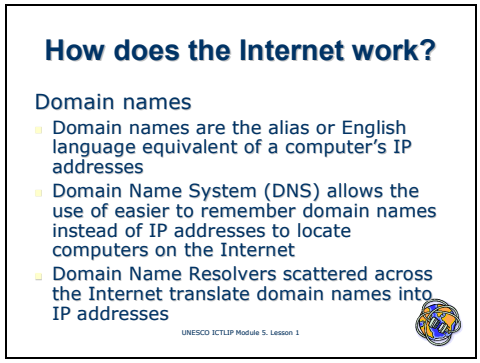
1. TCP/IP Networking - What is TCP/IP? http://tutorials.beginners.co.uk/read/category/90/id/282
2. Internet Protocols. http://www.rad.com/networks/1997/nettut/protocols.html
3. Internet protocol and addressing. http://supportnet.merit.edu/m-intint/t-netbas/text/intpro.html
4. Understanding IP Addressing. Webopedia. http://www.webopedia.com/DidYouKnow/2002/March/IPaddressing.html

Tip

View these sites:

1. Networking Background. http://supportnet.merit.edu/m-intint/t-netbas/text/netbac.html
2. Introduction to the Internet Protocols. http://oac3.hsc.uth.tmc.edu/staff/snewton/tcp-tutorial/index.html
3. The Internet Protocol Part One: The Foundations. Shvetima Gulati. http://www.acm.org/crossroads/columns/connector/july2000.html

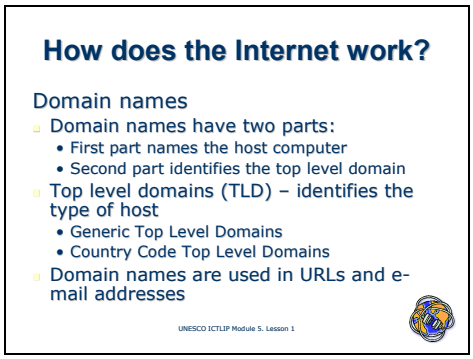
Slide 25



Domain names

Domain names are the alias or English- language equivalent of a computer's IP address. The Domain Name System (DNS) allows the use of easier to remember domain names instead of IP addresses to locate computers on the Internet. Domain Name Resolvers scattered across the Internet translate domain names into IP addresses

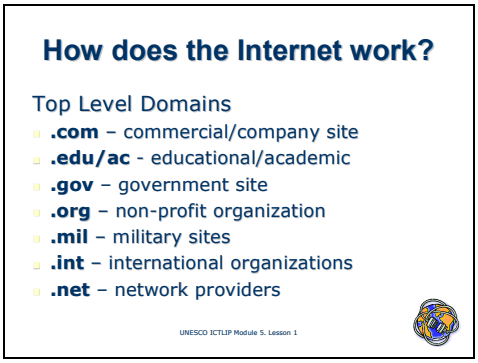
Slide 26



Domain names

Domain names have two parts: the first part names the host computer while the second part identifies the top level domain. Accordingly, there are two types of Top Level Domains (TLD): generic Top Level Domains and country code Top Level Domains. The TLD identifies the type of host; for example a domain that ends with .edu is an educational institution. Domain names are used in URLs and e-mail addresses.

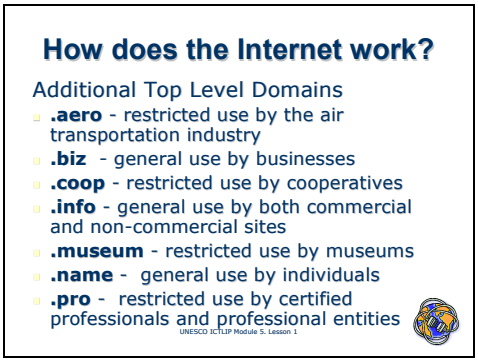
Slide 27



Top Level Domains

Only a few top-level domains are currently recognized, but this is changing. Here is a list of the domains generally accepted by all:
.edu -- educational site (usually a university or college)
.com -- commercial business site
.gov -- U.S. governmental/non-military site
.mil -- U.S. military sites and agencies
.net -- networks, internet service providers, organizations
.org -- U.S. non-profit organizations and others

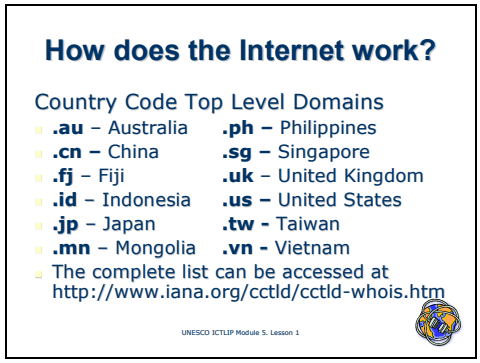
Slide 28



Additional Top Level Domains

In mid November 2000, the Internet Corporation for Assigned Names and Numbers (ICANN) voted to accept an additional seven new suffixes, which are expected to be made available to users :
.aero -- restricted use by air transportation industry
.biz -- general use by businesses
.coop -- restricted use by cooperatives
.info -- general use by both commercial and non-commercial sites
.museum -- restricted use by museums
.name -- general use by individuals
.pro -- restricted use by certified professionals and professional entities

Slide 29



Country Code Top Level Domains

.au – Australia
.cn – China
.fj – Fiji
.id – Indonesia.
.jp – Japan
.mn – Mongolia
.ph – Philippines
.sg – Singapore
.uk – United Kingdom
.us – United States
.tw - Taiwan
.vn - Vietnam

The complete list can be accessed at http://www.iana.org/cctld/cctld-whois.htm

Note

Because the Internet was created in this country, "US" was not originally assigned to U.S. domain names; however, it is used to designate state and local government hosts, including many public schools.

Activity 1-4

Read the following articles:

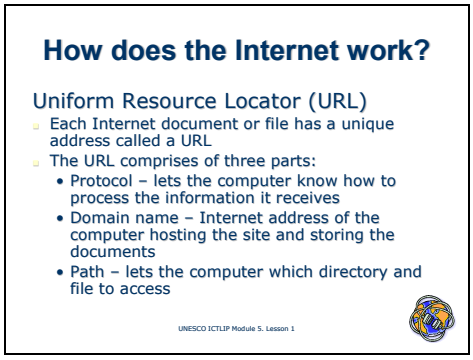
1. Introduction to Domain Name Service. http://supportnet.merit.edu/m-intint/t-domnam/text/intro1.html.
2. IANA Domain Name Services. http://www.iana.org/domain-names.htm
3. The Domain Name System: A Non-Technical Explanation – Why Universal Resolvability Is Important? InterNIC FAQ. http://www.internic.net/faqs/authoritative-dns.html

Tip

Read this article:

1. The D-N-What: A Layman's Guide to the Domain Naming System. M.A. Dockter http://webservercompare.internet.com/dns/

Slide 30



Uniform Resource Locator

A URL or Uniform Resource Locator is the unique address of a given webpage. Knowing the URL allows you to locate a given webpage. Much like a house address, the URL consists of several parts: the protocol, the domain name and the path.

- Protocol – lets the computer know how to process the information it receives
- Domain name – Internet address of the computer hosting the site and storing the documents
- Path – lets the computer know which directory and file to access

Slide 31

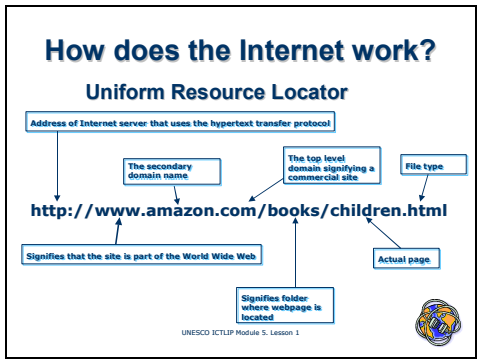
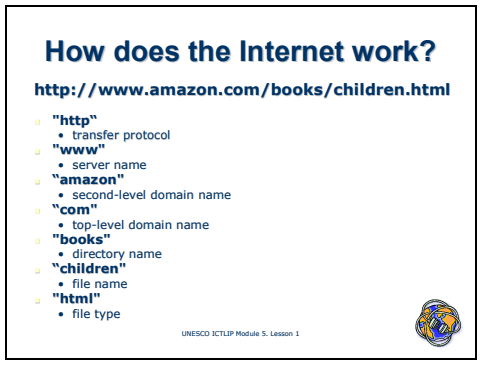


Figure1: Anatomy of a URL

Slide 32



Uniform Resource Locator

In the example http://www.amazon.com/books/children.html

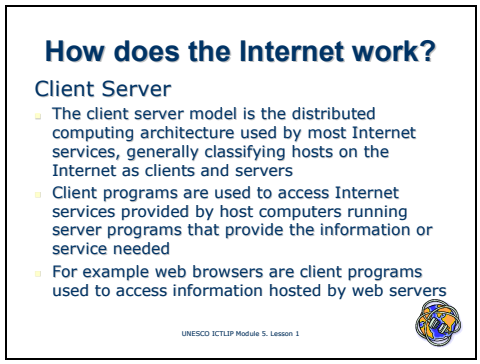
- **"http“ - hypertext transfer protocol**
- **"www" - world wide web server name**
- **“amazon" - second-level domain name**
- **“com" - top-level domain name**
- **"books" - directory name**
- **“children" - file name**
- **"html" - file type**

Activity1 -5

Visit these sites:

1. Learn the NET: Anatomy of a URL.
   http://www.learnthenet.com/english/web/110www.htm
2. The Anatomy of a URL (Uniform Resource Locator).
   http://www2.widener.edu/Wolfgram-Memorial-Library/pyramid/wwwanato.htm

Slide 33



Client Server

The client server model is the distributed computing architecture used by most Internet services, generally classifying hosts on the Internet as clients and servers. Client computers use client programs to access Internet services provided by host computers (servers) running server programs that provide the information or service needed. For example, web browsers are client programs used to access information hosted by web servers. Each Internet service requires a specific client program; however most of these services can now be accessed by simply using a web browser.

Activity 1-6

Read these articles:

1. Introduction to Client/Server Networking: A proven approach to distributed computing
   http://compnetworking.about.com/library/weekly/aa050201a.htm
2. Client/Server Software Architectures-An Overview.
   http://www.sei.cmu.edu/str/descriptions/clientserver_body.html

3. What is client/server computing?
   http://www.apinforma.com/biblio/online/internic/cliensrv/sld01.html

Tip

Visit these sites:

1. Howstuffworks "How Web Servers and the Internet Work.
   http://www.howstuffworks.com/web-server.htm
2. Client-server architecture: bringing order to the bramble bush
   http://www.ssa-lawtech.com/wp/wp3-5.htm
3. Client/Server Fundamentals
   http://www.networkcomputing.com/netdesign/1005part1a.html
4. Network Solutions 15 Minute series
   http://www.apinforma.com/biblio/online/internic/

References

_____ (1995) Internet and World Wide Web simplified. IDG Books Worldwide; Foster City; California.

Capron, H. L. (1996) Computers: Tools for an information age. (4th ed.) New York: The Benjamin/Cummings Publishing Company.

Franks, Mike. (1995) The Internet publishing handbook: for World Wide Web, Gopher and WAIS. Addison-Wesley; Reading Massachusetts.

Hutchinson, S. E. & Sawyer, S. C. (2000). Computers, Communications & Information: A users introduction. (7th ed.) Boston: Irwin McGraw-Hill.

Electronic Resources

BBC Becoming WebWise: Online Course for Beginners. British Broadcasting Corporation. [Online] URL http://www.bbc.co.uk/webwise/learn/menu.shtml

Beginners.co.uk. *TCP/IP Networking - What is TCP/IP?* Visualsoft UK Ltd. [Online] URL http://tutorials.beginners.co.uk/read/category/90/id/282

Behar, Gil, Loewy, Guy and Solomonovich, Oz. *Networks for Beginners: Internet Protocols*. [Online] URL http://www.rad.com/networks/1997/nettut/protocols.html

Brain, Marshall. HowStuffWorks: *How Web servers and the Internet Work.* [Online] URL http://www.howstuffworks.com/web-server.htm

Cerf, Vint. *A Brief History of the Internet and Related Networks*. Internet Society (ISOC). [Online] URL http://www.isoc.org/internet/history/cerf.shtml

Client-server architecture: bringing order to the bramble bush. Steele Scharbach Associates L.L.C. [Online] URL http://www.ssa-lawtech.com/wp/wp3-5.htm

Client/Server Software Architectures-An Overview. Carnegie Mellon University: Software Engineering Institute. [Online] URL http://www.sei.cmu.edu/str/descriptions/clientserver_body.html

Cohen, Laura. *A Basic Guide to the Internet*. University at Albany Libraries: Internet Tutorials. [Online] URL http://library.albany.edu/internet/internet.html

Cottingham, Scott. *Internet 101*. [Online] URL http://www.internet101.org/

Davila, Rhonda. *History and Development of the Internet: a Timeline*. [Online] URL http://www.sat.lib.tx.us/Displays/itintro.htm

Dockter, M.A. *The D-N-What: A Layman's Guide to the Domain Naming System.* WebServer Compare. INT Media Group. [Online] URL http://webservercompare.internet.com/dns/

Gulati, Shvetima. *The Internet Protocol Part One : The Foundations*. Association for Computing Machinery, Inc. [Online] URL http://www.acm.org/crossroads/columns/connector/july2000.html

IANA Domain Name Services. [Online] URL http://www.iana.org/domain-names.htm

Kristula, Dave. *The History of the Internet*. [Online] URL http://www.davesite.com/webstation/net-history.shtml

Learn the NET: Anatomy of a URL. Michael Lerner Productions. [Online] URL http://www.learnthenet.com/english/web/110www.htm

Learn the Net: *The Animated Internet*. Michael Lerner Productions. [Online] URL http://www.learnthenet.com/english/animate/animate.htm

Leiner, Barry M., Cerf, Vinton G., Clark, David D.,
Kahn, Robert E., Kleinrock, Leonard, Lynch, Daniel C.,
Postel, Jon, Roberts, Larry G., and Wolff, Stephen. *All About The Internet: History of the Internet*. Internet Society (ISOC). [Online] URL http://www.isoc.org/internet/history/brief.shtml

Mitchell, Bradley. *Introduction to Client/Server Networking: A proven approach to distributed computing*. [Online] URL http://compnetworking.about.com/library/weekly/aa050201a.htm

Network Computing.*Client/Server Fundamentals*. CMP Media LLC. [Online] URL http://www.networkcomputing.com/netdesign/1005part1a.html

Network Solutions 15 Minute series. [Online] URL http://www.apinforma.com/biblio/online/internic/

Newton, Steven E. *Introduction to the Internet Protocols*. [Online] URL http://oac3.hsc.uth.tmc.edu/staff/snewton/tcp-tutorial/index.html

Stewart, William. *The Living Internet*. [Online] URL http://livinginternet.com/

SupportNet Online. *Internet protocol and addressing.* Eastern Upper Peninsula ISD and Merit Network, Inc. [Online] URL http://supportnet.merit.edu/m-intint/t-netbas/text/intpro.html

SupportNet Online. *Introduction to Domain Name Service*. Eastern Upper Peninsula ISD and Merit Network, Inc. [Online] URL http://supportnet.merit.edu/m-intint/t-domnam/text/intro1.html.

SupportNet Online. *Networking Background*. Eastern Upper Peninsula ISD and Merit Network, Inc. [Online] URL http://supportnet.merit.edu/m-intint/t-netbas/text/netbac.html

The Domain Name System: A Non-Technical Explanation – Why Universal Resolvability Is Important? InterNIC FAQ. [Online] URL http://www.internic.net/faqs/authoritative-dns.html

The Anatomy of a URL (Uniform Resource Locator). Wofgram Memorial Library. Widener University. [Online] URL http://www2.widener.edu/Wolfgram-Memorial-Library/pyramid/wwwanato.htm

Webopedia. *Understanding IP Addressing*. INT Media Group. [Online] URL http://www.webopedia.com/DidYouKnow/2002/March/IPaddressing.html

What is client/server computing? Network Solutions 15 Minute series (Mirrored). [Online] URL http://www.apinforma.com/biblio/online/internic/cliensrv/sld01.html

Lesson 2

How to search for information on the Internet

Teacher's Guide

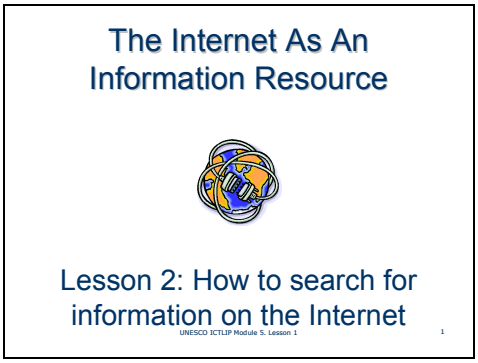
Module 5. The Internet as an Information Resource

Lesson 2. How to search for information on the Internet

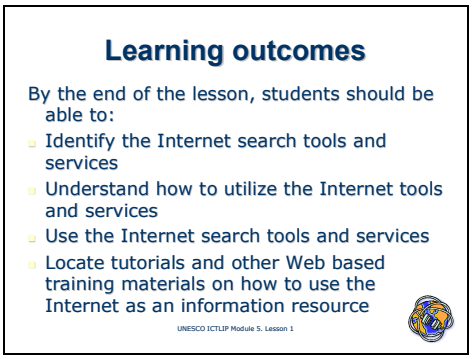
Note

The Teacher's Guide provides notes and tips for the PowerPoint presentation that you will use in conducting the course.

Slide 1



Slide 2

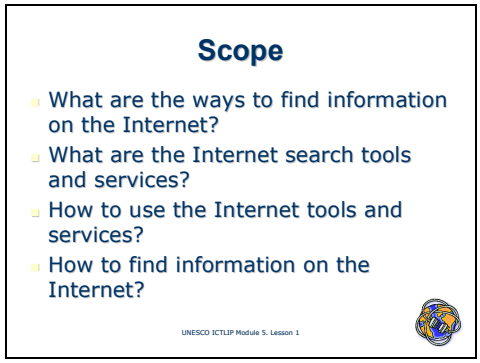


Learning outcomes

By the end of the lesson, students should be able to:

1. Identify the Internet search tools and services
2. Understand how to utilize the Internet tools and services
3. Use the Internet search tools and services
4. Locate tutorials and other Web- based training materials on how to use the Internet as an information resource

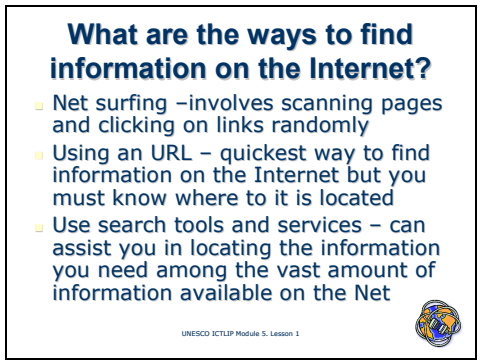
Slide 3



Scope

1. What are the ways to find information on the Internet?
2. What are the Internet search tools and services?
3. How to use the Internet tools and services?
4. How to find information on the Internet?

Slide 4



What are the ways to find information on the Internet?

- Net surfing –involves scanning pages and clicking on links randomly. It is a leisurely way of searching for information, highly unorganized and inefficient. Used for browsing the links provided on the current web page being viewed, in search of related valuable information.
- Using a URL – quickest way to find information on the Internet but you must know where it is located. It is quite effective but you may encounter problems in remembering the exact URL and in finding the document if the URL has been changed.
- Use search tools and services – can assist you in locating the information you need among the vast amount of information available on the Net.

Slide 5

What are the Internet search tools and services?

General classifications of Internet tools and services available through the World Wide Web:

- Search engines
- Subject directories
- Invisible Web
- Meta-search engines
- Specialized search engines
- Other search tools

Slide 6

Search engines

Search engines are huge databases of web page files that have been assembled automatically by machine and are the best means for searching the web. Search engines compile their databases by employing "spiders" or "robots" ("bots") to crawl through the Internet, usually using embedded links. They periodically search the World Wide Web and automatically index and store the information in their database. On the downside, web pages without links are usually missed in these searches. To circumvent this, most web authors place tags called META tags on their web pages enabling the search engines to track them.

Search engines are different from each other since they use their own proprietary programs for searching the Net. These software employ different types of indexing as well as relevancy ranking systems, so searches using different search engines yield different results, in terms of

the number of 'hits' (matching documents) found and in the actual documents that comprise those hits.

Examples:
- Google - http://www.google.com
- Alltheweb - http://www.alltheweb.com
- Altavista - http://www.altavista.com

Note

It is important to stress that by the very nature of Search Engines, they cannot index the entire content of the 'Net. Since the content of the Internet changes continuously, there will always be a delay in indexing the Net. The possible theoretical exception is Google, whose proprietary engine takes a 'picture' of the Net every time it is accessed. But in practice it is estimated that no search engine indexes more than about 30% of the Web's content.

Tip
Read this article:
The best search engines -
http://www.lib/berkeley.edu/TeachingLib/Guides/Internet/SearchEngines.html

Slide 7

Subject directories

Subject directories differ from search engines in that most of them are assembled manually. Much like directories in the print media, subject directories are registries assembled by editors who determine which sites to include and exclude in their listings. Because of this, subject directories tend to index even less content than do search engines.

By their very nature, subject directories are even more out of date than search engines. Since they do not store actual pages but rather direct to them, it is not uncommon to find that some of the addresses or search results no longer exist. Their main advantage is that they point to top-

level addresses, and thus are perfect for searching general topics as well as looking for products and the main sites of commercial establishments.

Examples:
- Yahoo - www.yahoo.com
- Librarian's Index – http://www.lii.org
- LookSmart - www.looksmart.com

Note

At present, most subject directories and search engines have either merged or have partnered with each other, and thus are almost no longer discernible from each other.

Tip

Read this article:
Subject directories: the best and more -
http://www.lib/berkeley.edu/TeachingLib/Guides/Internet/SubjDirectories.html

Slide 8

Invisible Web

The invisible web is so called since it refers to documents that cannot be ordinarily reached through search engines and subject directories, and are thus 'invisible'. It is generally believed to comprise the bulk of the Internet with estimates ranging from 60% to as much as 90% of all content. This content is largely made up of databases, and collections of databases, that cannot be directly accessed on the Web because they are password protected, hidden or in formats that are not generally used or searchable.

Usually very subject specific, the invisible Web is organized by professionals or individuals who have accumulated data on their particular interest. Search engines and subject directories usually exclude them from main-stream searches since they generate little interest to the bulk of users, but nonetheless they may still point to places or 'vortals' where they can be accessed.

Examples:
- Langenberg – http://www.langenberg.com

- Complete Planet - http://www.completeplanet.com
- Direct Search - http://gwis2.circ.gwu.edu/~gprice/direct.htm

Tip
Read this article:
Invisible Web: What it is, Why it exists, How to find it . . . -
http://www.lib/berkeley.edu/TeachingLib/Guides/Internet/InvisibleWeb.html

Slide 9

Meta-search engines

Meta-search engines send your search query to several search engines simultaneously and give you a consolidated report of their findings. They do not maintain a database of their own.

Examples:
- Metacrawler – http://www.metacrawler.com
- Dogpile – http://www.dogpile.com
- ProFusion – http://www.profusion.com

Tip
Read this article:
Meta-Search Engines -
http://www.lib/berkeley.edu/TeachingLib/Guides/Internet/InvisibleWeb.html

Slide 10

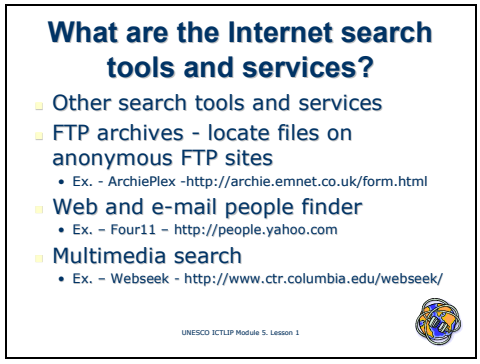
Specialized search engines

Specialized search engines are dedicated to indexing web pages on specific topics

Examples:
Locate mailing lists and newsgroups

- The Lizt – http://www.liszt.com
- Mailbase – http://www.mailbase.ac.uk
- Dejanews – http://www.dejanews.com
- Google groups - http://groups.google.com/

Slide 11



Other search tools and services

- FTP archives - locate files on anonymous FTP sites
  - Ex. - ArchiePlex -http://archie.emnet.co.uk/form.html
- Web and e-mail people finder
  - Ex. – Four11 – http://people.yahoo.com
- Multimedia search
  - Ex. - Webseek - http://www.ctr.columbia.edu/webseek/

Slide 12

Other search tools and services

- Virtual Reference Libraries – online dictionaries, indexes, etc.
  - Ex. Research-it – http://www.iTools.com/research-it
- Virtual Reference Desks – online reference services

  - Ex – AskA+Locator - http://www.vrd.org/locator/subject.shtml
- Z39.50 Gateways – gateways to library catalogs
  - Ex – LC Online Catalog -http://lcweb.loc.gov/z3950/gateway.html

Activity 2-1

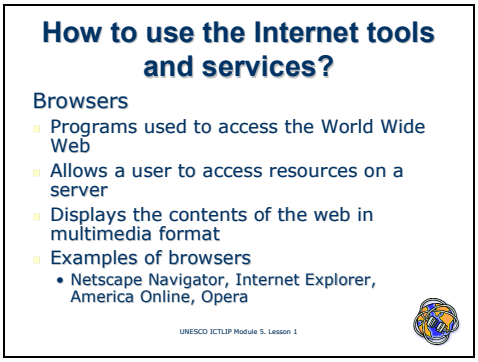
1. Read this article (Lesson 1-4):
Bare Bones 101: http://www.sc.edu/beaufort/library/lesson1.html
2. Visit this site:
Internet Search Tools (Library of Congress Explore the Internet)
http://www.loc.gov/global/search.html

Slide 13

How to use the Internet tools and services?

Most if not all of the Internet tools and services can be used through the World Wide Web. To be able to use the search tools on the Web, one must first know how to use a browser. Moreover, features and functions of available search tools and services vary ; accordingly, one must be familiar with at least two or more search tools to become effective in finding information on the Net.

Slide 14

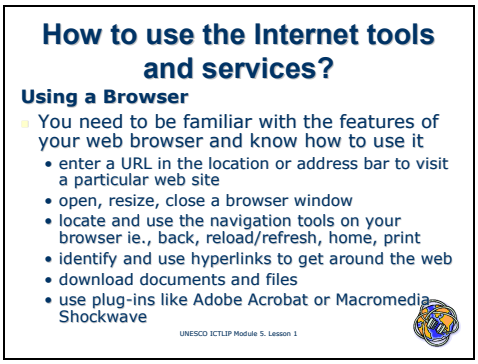


Browsers

- Programs used to access the World Wide Web
- Allow a user to access resources on a server
- Display the contents of the web in multimedia format

- Examples of browsers: Netscape Navigator, Internet Explorer, America Online, Opera

Slide 15



Using a Browser

You need to be familiar with the features of your web browser and know how to use it

- enter a URL in the location or address bar to visit a particular web site
- open, resize, close a browser window
- locate and use the navigation tools on your browser, ie., back, reload/refresh, home, print
- identify and use hyperlinks to get around the web
- download documents and files
- use plug-ins like Adobe Acrobat or Macromedia Shockwave

Tip

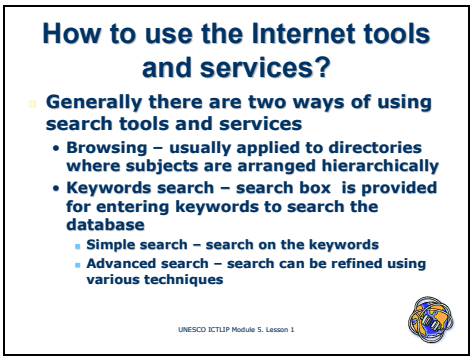
Read this article:
Browser comparisons: Internet Explorer & Netcape
http://www.lib/berkeley.edu/TeachingLib/Guides/Internet/Browsers.html

Activity 2-2

Read these articles:

1. Web Browsers - http://www.learnthenet.com/english/html/12browser.htm
2. Web browser primer - http://www.webteacher.org/winexp/browser/browser.html

Slide 16

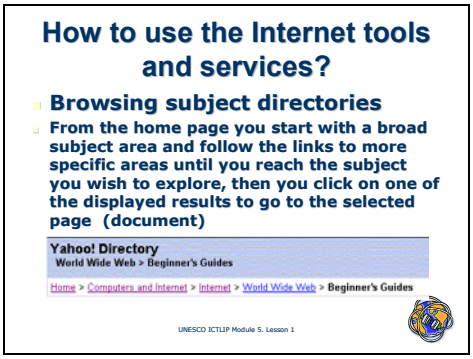


How to use the Internet tools and services

Generally there are two ways of using search tools and services

1. Browsing – usually applied to directories where subjects are arranged hierarchically
2. Keyword search – search box is provided for entering keywords to search the database
   - Simple search – search on the keywords
   - Advanced search – search can be refined using various techniques

Slide 17



Browsing subject directories

From the home page you start with a broad subject area and follow the links to more specific areas until you reach the subject you wish to explore, then you click on one of the displayed results to go to the selected page (document).

Activity 2-3

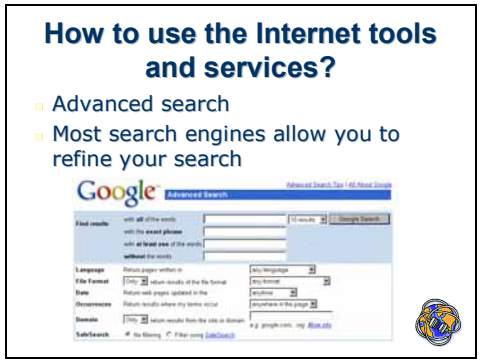
1. Go to Yahoo.com and search for a specific topic.
2. Write down the topic you searched for and the number of results (hits).

Slide 18

Simple keywords search

Type keywords in the search box, press Enter on the keyboard, and then select from the results.

Slide 19



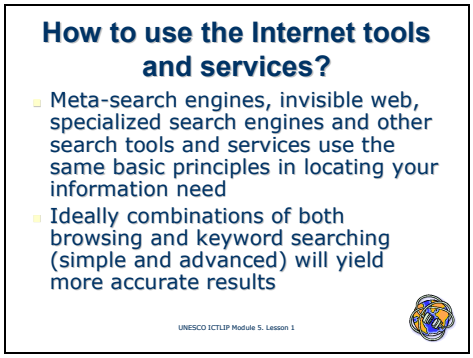
Advanced search

Most search engines allow you to refine your search.

Activity 2-4

1. Go to Google advanced search page and refine your search for the same topic you searched earlier.
2. Write down the advance features you used, and then compare the number of results with the simple search you did earlier.

Slide 20



How to use the Internet tools and services?

Meta-search engines, the invisible web, specialized search engines and other search tools and services use the same basic principles in locating your information need. Ideally combinations of both browsing and keyword searching (simple and advanced) will yield more accurate results

Slide 21

How to use the Internet tools and services?

Each Internet tool and service provides help files that can guide you in utilizing it more effectively.

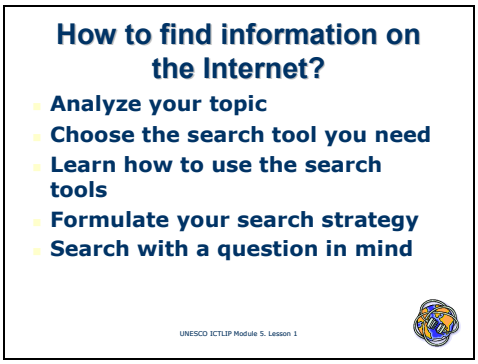
Activity 2-5

Visit the sites of the search tools and services discussed in the earlier slides and use them to search for information.

Note

Assist and guide the students in trying out the discussed search tools and services. Make sure they have enough hands-on experience before proceeding with the next discussion.

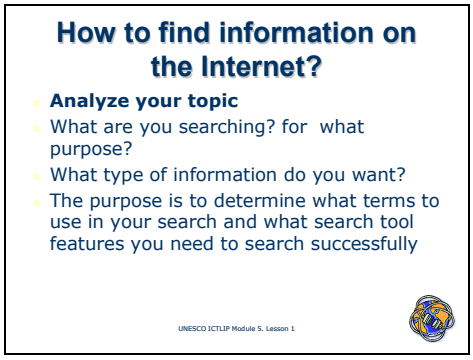
Slide 22



How to find information on the Internet?

- Analyze your topic
- Choose the search tool you need
- Learn how to use the search tools
- Formulate your search strategy
- Search with a question in mind

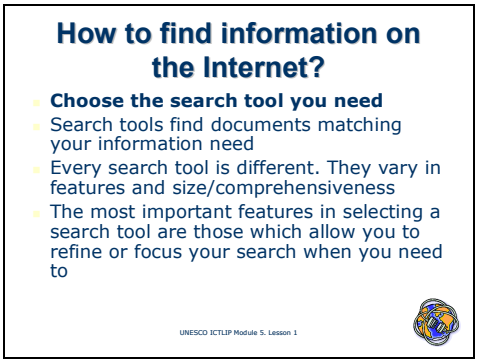
Slide 23



Analyze your topic

- What are you searching? for what purpose?
- What type of information do you want?
- The purpose is to determine what terms to use in your search and what search tool features you need to search successfully

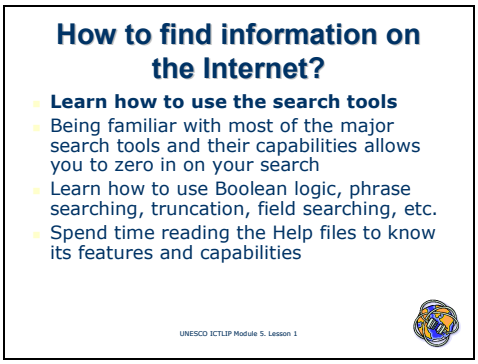
Slide 24



Choose the search tool you need

- Search tools find documents matching your information need
- Every search tool is different. They vary in features and size/comprehensiveness
- The most important features in selecting a search tool are those which allow you to refine or focus your search when you need to

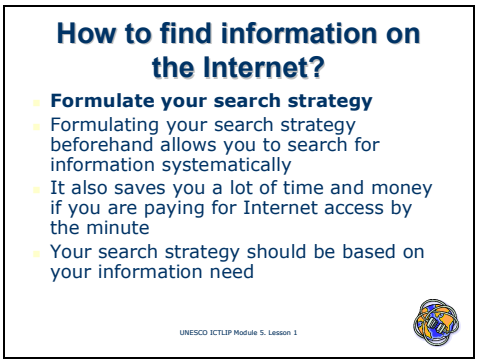
Slide 25



Learn how to use the search tools

- Being familiar with most of the major search tools and their capabilities allows you to zero in on your search
- Learn how to use Boolean logic, phrase searching, truncation, field searching, etc.
- Spend time reading the Help file to know its features and capabilities

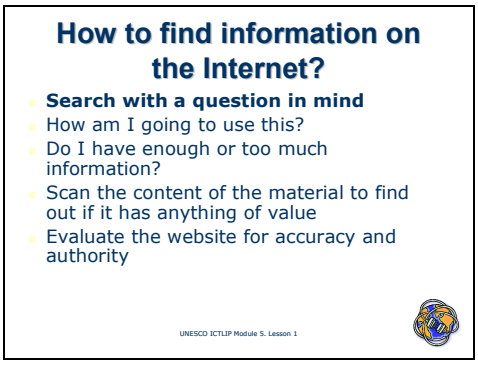
Slide 26



Formulate your search strategy

- Formulating your search strategy beforehand allows you to search for information systematically
- It also saves you a lot of time and money if you are paying for Internet access by the minute
- Your search strategy should be based on your information need

Slide 27



Search with a question in mind

- How am I going to use this?
- Do I have enough or too much information?
- Scan the content of the material to find out if it has anything of value
- Evaluate the website for accuracy and authority

Slide 28

Simple search strategy

- pick your site
- learn to use the search tools
- choose your words carefully
- vary your spelling
- know how to widen your search
- know how to use refining techniques to narrow your search
- use multiple search engines
- use meta-search engines
- use specialized search engines
- reuse your search

Tip

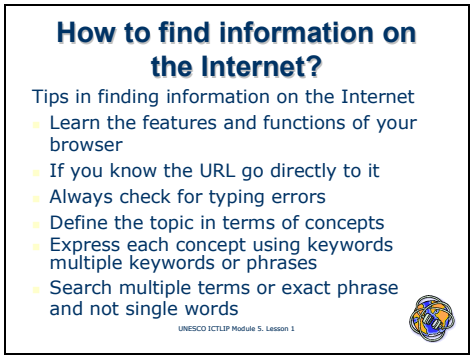
Read this article:
Recommended Search Strategy -
http://www.lib/berkeley.edu/TeachingLib/Guides/Internet/Strategies.html

Activity 2-6

Read these articles:
Choose the best search for your information need.
http://nuevaschool.org/~debbie/library/research/adviceengine.html

Surfing with a Purpose: Process and strategy put to the test on the Internet
http://www.educause.edu/ir/library/html/erm9851.html

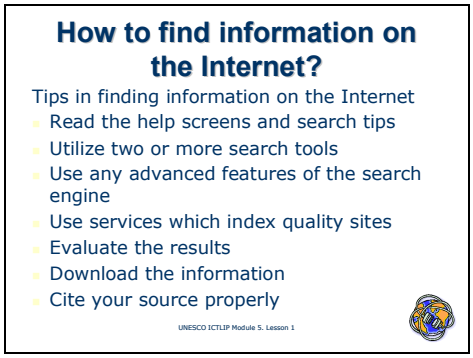
Slide 29



Tips in finding information on the Internet

- Learn the features and functions of your browser
- If you know the URL go directly to it
- Always check for typing errors
- Define the topic in terms of concepts
- Express each concept using keywords multiple keywords or phrases
- Search multiple terms or exact phrase and not single words

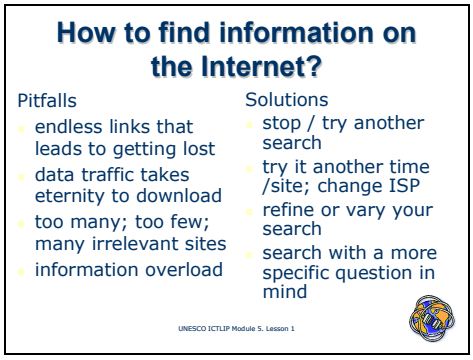
Slide 30



Tips in finding information on the Internet

- Read the help screens and search tips
- Utilize two or more search tools
- Use any advanced features of the search engine
- Use services which index quality sites
- Evaluate the results
- Download the information
- Cite your source properly

Slide 31



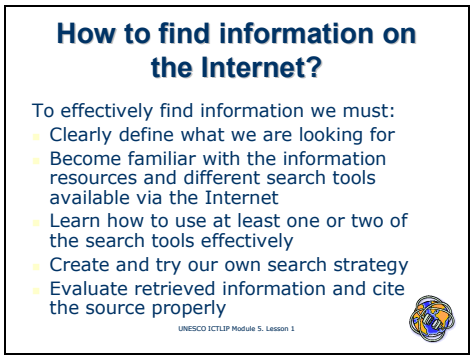
Pitfalls
endless links that lead to getting lost
data traffic takes eternity to download
too many; too few; many irrelevant sites
information overload

Solutions
stop / try another search
try it another time /site; change ISP
refine or vary your search
search with a more specific question in mind

Tip
Read this article:
Conducting Research on the Internet
http://library.albany.edu/internet/research.html

Activity 2-7
Read these articles:
1. Searching techniques
   http://www.lib.flinders.edu.au/services/infolit/web/stech.html
2. Bare Bones 101 (Lesson 6-10)
   http://www.sc.edu/beaufort/library/lesson1.html

Slide 32



Summary

To effectively find information we must:
- Clearly define what we are looking for

- Become familiar with the information resources and different search tools available via the Internet
- Learn how to use at least one or two of the search tools effectively
- Create and try our own search strategy
- Evaluate retrieved information and cite the source properly

Activity 2-8

1. Use the different Internet search tools to locate tutorials and other Web based training materials on how to use the Internet as an information resource.
2. List the materials you have found and their corresponding URL's.

Note

Walk around to check on the students' progress and provide assistance and guidance if they are having difficulties with their search.

References

Miller, Michael. (1995) Easy Internet. Que; Indianapolis, IN.

Sawyer, Stacey C. (1997) Using Information technology: A practical introduction to computers & communications. (2nd ed.) Boston, Massachusetts: Irwin McGraw-Hill.

Steele, Heidi. (1996) How to use the Internet. Ziff-Davis; Emeryville, California.

Electronic Resources

Abilock, Debbie. *Choose the best search for your information need*. Nueva School Library Help Page. [Online] URL http://nuevaschool.org/~debbie/library/research/adviceengine.html

Banbury, John. *Searching techniques.* Flinders University of South Australia Library. [Online] URL http://www.lib.flinders.edu.au/services/infolit/web/stech.html

Barker, Joe. *Browser comparisons: Internet Explorer & Netscape.* University of California Berkeley Library: Teaching Library Internet Workshops. [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/Browsers.html

_____ *Invisible Web: What it is, Why it exists, How to find it, and Its inherent ambiguity*. University of California Berkeley Library: Teaching

Library Internet Workshops. [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/InvisibleWeb.html

_____ *Meta-Search Engines*. University of California Berkeley Library: Teaching Library Internet Workshops. [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/MetaSearch.html

_____ *Recommended Search Strategy: Analyze your topic & Search with peripheral vision.* [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/Strategies.html

_____ *Subject directories: the best and more.* University of California Berkeley Library: Teaching Library Internet Workshops. [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/SubjDirectories.html

_____ *The best search engines*. University of California Berkeley Library: Teaching Library Internet Workshops. [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/SearchEngines.html

Chamberlain, Ellen. *Bare Bones 101*. University of South Carolina Beaufort Library. [Online] URL http://www.sc.edu/beaufort/library/lesson1.html

Cohen, Laura. *Conducting Research on the Internet.* University at Albany Libraries: Internet Tutorials. [Online] URL http://library.albany.edu/internet/research.html

Gresham, Keith. *Surfing with a Purpose: Process and strategy put to the test on the Internet.* Educause: Educom Review. [Online] URL http://www.educause.edu/ir/library/html/erm9851.html

Library of Congress. *Internet Search Tools*. [Online] URL [Online] URL http://www.loc.gov/global/search.html

Learn the Net: *Web Browsers*. Michael Lerner Productions. [Online] URL http://www.learnthenet.com/english/html/12browser.htm

Webteacher.org. *Web browser primer*. National Cable Television Association (NCTA), Tech Corps, and Cable in the Classroom. [Online] URL http://www.webteacher.org/winexp/browser/browser.html

Lesson 3

Ethical, legal and other issues involved in using the Internet as an information resource

Teacher's Guide

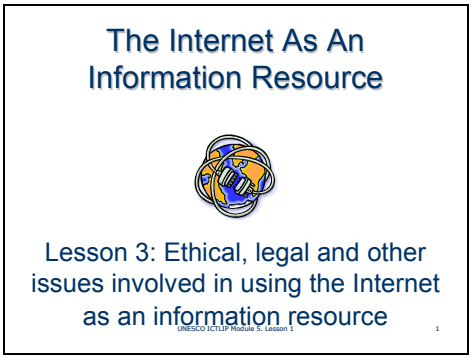
Module 5. The Internet as an Information Resource

Lesson 3. Ethical, legal and other issues involved in using the Internet as an information resource

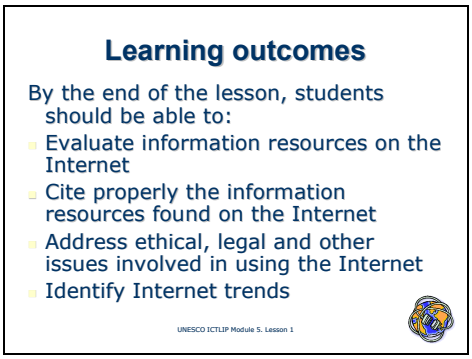
Note

The Teacher's Guide provides notes and tips for the PowerPoint presentation that you will use in conducting the course.

Slide 1



Slide 2

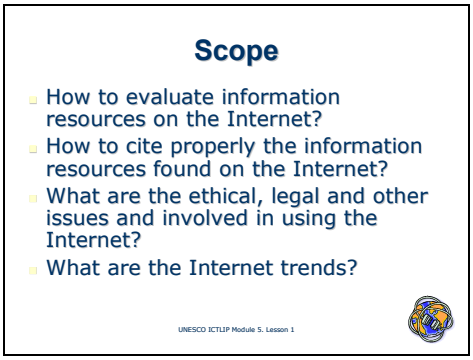


Learning outcomes

By the end of the lesson, students should be able to:

1. Evaluate information resources on the Internet
2. Cite properly the information resources found on the Internet
3. Address ethical, legal and other issues involved in using the Internet
4. Identify Internet trends

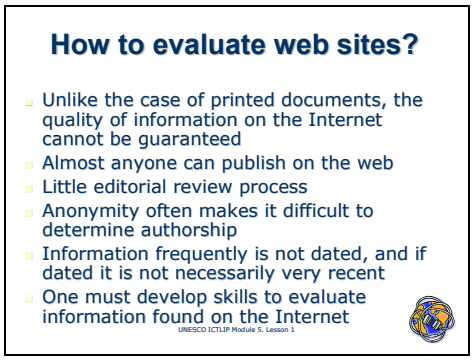
Slide 3



Scope

1. How to evaluate information resources on the Internet?
2. How to cite properly the information resources found on the Internet?
3. What are the ethical, legal and other issues involved in using the Internet?
4. What are the Internet trends?

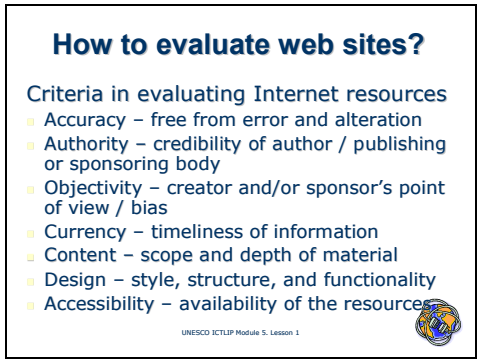
Slide 4



How to evaluate web sites?

Unlike the case of printed documents, the quality of information on the Internet cannot be guaranteed. With a little knowledge and use of the freely available resources, almost anyone can publish on the web. Materials found on the Internet rarely go to editorial review process, most are not refereed, and few even edited. Furthermore, anonymity on the Internet often makes it difficult to determine authorship. In addition, information frequently is not dated, and if dated it is not necessarily very recent . Thus, one must develop skills to evaluate information found on the Internet in order to effectively use it.

Slide 5



How to evaluate web sites?

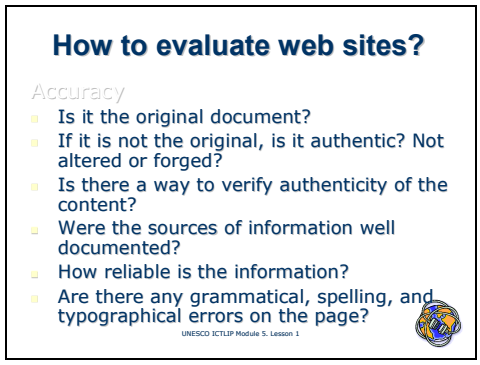
The following are criteria that can be used in evaluating Internet resources:

- Accuracy – free from error and alteration
- Authority – credibility of author / publishing or sponsoring body
- Objectivity – creator and/or sponsor's point of view / bias
- Currency – timeliness of information
- Content – scope and depth of material
- Design – style, structure, and functionality
- Accessibility – availability of the resources

Note

The following slides contain questions for each criteria that can be used to evaluate information on the Internet

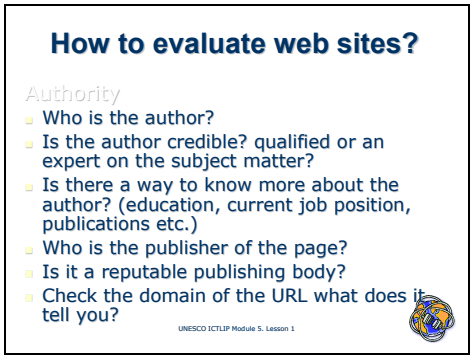
Slide 6



Accuracy

- Is it the original document?
- If it is not the original is it authentic? Not altered or forged?
- Is there a way to verify authenticity of the content?
- Were the sources of information well documented?
- How reliable is the information?
- Are there any grammatical, spelling, and typographical errors on the page?

Slide 7



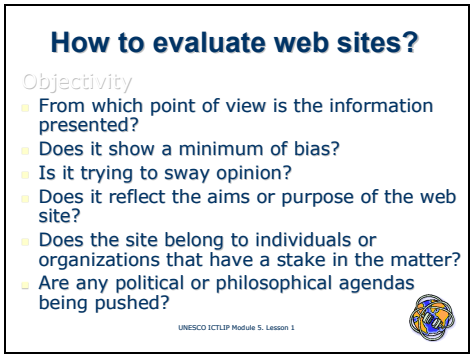
Authority

- Who is the author?
- Is the author credible? qualified or an expert on the subject matter?
- Is there a way to know more about the author? (education, current job position, publications etc.)
- Who is the publisher of the page?
- Is it a reputable publishing body?
- Check the domain of the URL, what does it tell you?

Note

Authorship of a document can be reflected oin the URL. Check the top level domain; .gov, .mil, .edu are more reliable than .org, .com, and .net. Check secondary level domain; known institutions are more reliable than little known companies or brand names. Files found in directories starting with a tilde ~ are usually personal files in an organization 's web site.

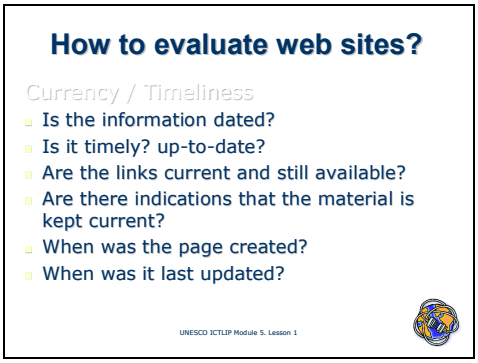
Slide 8



Objectivity

- From which point of view is the information presented?
- Does it show a minimum of bias?
- Is it trying to sway opinion?
- Does it reflect the aims or purpose of the web site?
- Does the site belong to individuals or organizations that have a stake in the matter?
- Are any political or philosophical agendas being pushed?

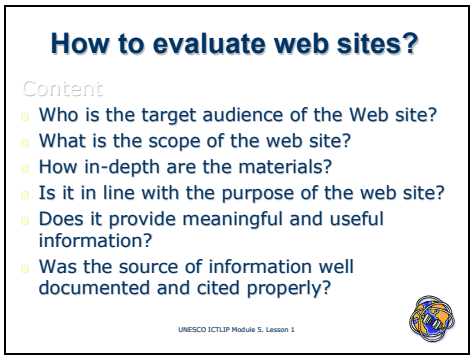
Slide 9



Currency /Timeliness

- Is the information dated?
- Is it timely? up-to-date?
- Are the links current and still available?
- Are there indications that the material is kept current?
- When was the page created?
- When was it last updated?

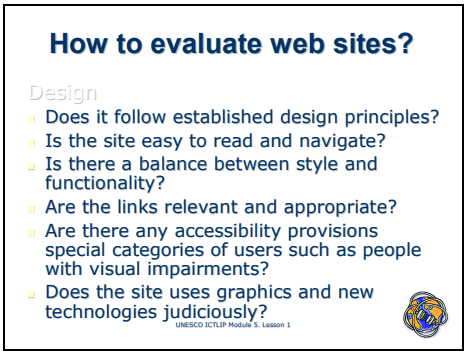
Slide 10



Content

- Who is the target audience of the Web site?
- What is the scope of the web site?
- How in-depth are the materials?
- Is it in line with the purpose of the web site?
- Does it provide meaningful and useful information?
- Was the source of information well documented and cited properly?

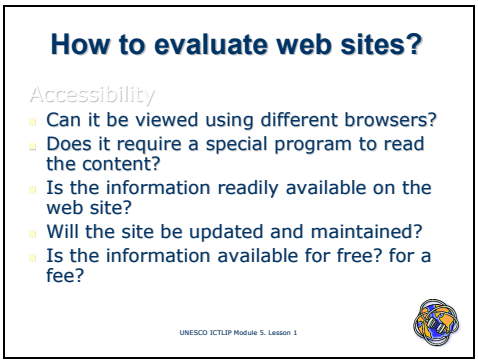
Slide 11



Design

- Does it follow established design principles?
- Is the site easy to read and navigate?
- Is there a balance between style and functionality?
- Are the links relevant and appropriate?
- Are there any accessibility provisions for special categories of users such as people with visual impairments?
- Does the site use graphics and new technologies judiciously?

Slide 12



Accessibility

- Can it be viewed using different browsers?
- Does it require a special program to read the content?
- Is the information readily available on the web site?
- Will the site be updated and maintained?
- Is the information available for free? for a fee?

Tip

1. Read these articles: Alexander, Jane and Marsha Tate. Teaching Critical Evaluation Skills for World Wide Web Resources. Wolfgram Memorial Library. Widener University http://www2.widener.edu/Wolfgram-Memorial-Library/webevaluation/webeval.htm
2. Ormondroyd, J., Engle, M., & Cosgrave, T. How to Critically Analyze Information Sources

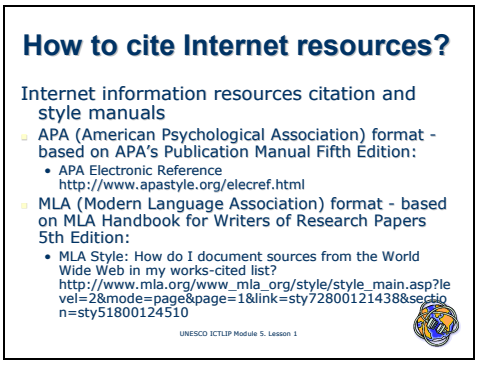
http://www.library.cornell.edu/okuref/research/skill26.htm

Activity 3-1

1. Read these articles:
- Lederer, Naomi. How to Evaluate A Web Page. Colorado State University Libraries http://manta.library.colostate.edu/howto/evalweb2.html
- Evaluating Web Information http://www.lib.vt.edu/research/evaluate/evaluating.html

2. Evaluate the web sites and articles you found in Lesson 2 using the criteria discussed.

Slide 13

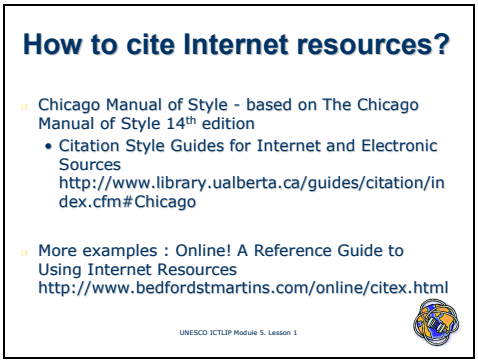


How to cite Internet resources?

Internet information resources citation and style manuals

1. APA (American Psychological Association) format - based on APA's Publication Manual Fifth Edition: APA Electronic Reference http://www.apastyle.org/elecref.html
2. MLA (Modern Language Association) format - based on MLA Handbook for Writers of Research Papers 5th Edition: MLA Style: How do I document sources from the World Wide Web in my works-cited list? http://www.mla.org/www_mla_org/style/style_main.asp?level=2&mode=page&page=1&link=sty72800121438&section=sty51800124510

Slide 14



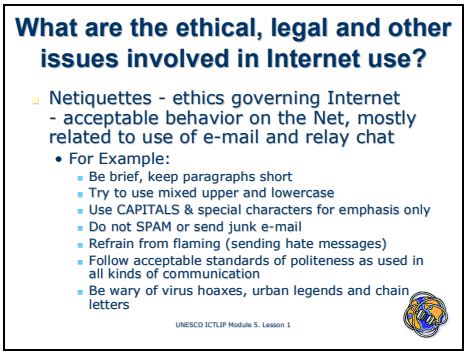
3. Chicago Manual of Style - based on The Chicago Manual of Style 14th edition: Citation Style Guides for Internet and Electronic Sources
   http://www.library.ualberta.ca/guides/citation/index.cfm#Chicago

More examples : Online! A Reference Guide to Using Internet Resources
http://www.bedfordstmartins.com/online/citex.html

Activity 3-2

1. Visit the sites discussed in the previous slides.
2. Cite the web sites and articles you found in Lesson 2 using one of the citation style manuals.

Slide 15

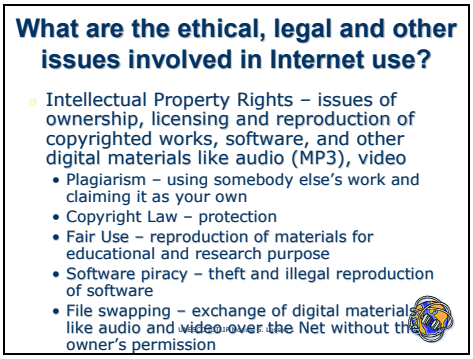


What are the ethical, legal and other issues involved in Internet use?

Netiquettes - ethics governing Internet - acceptable behavior on the Net, mostly related to use of e-mail and relay chat. For example:

- Be brief, keep paragraphs short
- Try to use mixed upper and lowercase
- Use CAPITALS & special characters for emphasis only
- Do not SPAM or send junk e-mail
- Refrain from flaming (sending hate messages)
- Follow acceptable standards of politeness as used in all kinds of communication
- Be wary of virus hoaxes, urban legends and chain letters

Slide 16

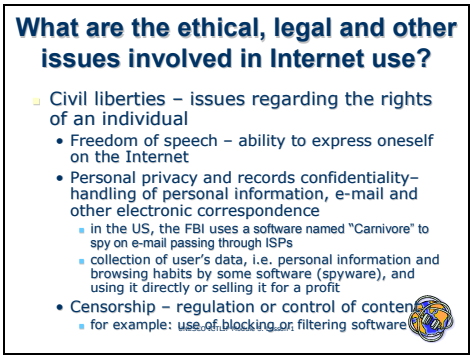


What are the ethical, legal and other issues involved in Internet use?

Intellectual Property Rights – issues of ownership, licensing and reproduction of copyrighted works, software, and other digital materials like audio (MP3), video

- Plagiarism – using somebody else's work and claiming it as your own
- Copyright Law – protection
- Fair Use – reproduction of materials for educational and research purpose
- Software piracy – theft and illegal reproduction of software
- File swapping – exchange of digital materials like audio and video over the Net without the owner's permission

Slide 17



What are the ethical, legal and other issues involved in Internet use?

Civil liberties – issues regarding the rights of an individual

- Freedom of speech – ability to express oneself on the Internet
- Personal privacy and records confidentiality– handling of personal information, e-mail and other electronic correspondence
  - o in the US, the FBI uses a software named "Carnivore" to spy on e-mail passing
  - o through ISPs
  - o collection of user's data, i.e. personal information and browsing habits by some software
  - o (spyware), and using it directly or selling it for a profit
- Censorship – regulation or control of content - for example: use of blocking or filtering software

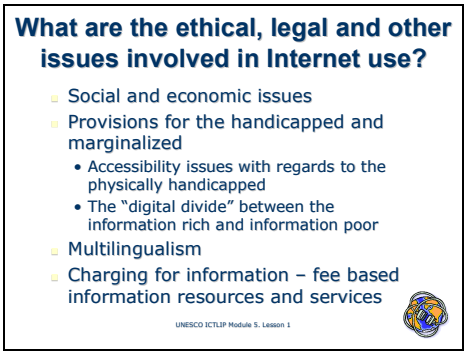
Slide 18

What are the ethical, legal and other issues involved in Internet use?

Cybercrimes (Computer- facilitated crimes)

- Hacking / Cracking – breaking-in to computer systems with or without malicious intent
- Dissemination of Viruses, Worms, Trojan Horses, and other similar destructive software
- Denial of service and other attacks
- Internet Fraud – false advertisement and malpractices of individuals and companies
- Spamming – sending unsolicited e-mail
- Flaming – sending of hate messages
- Pornography – proliferation of obscene and indecent materials

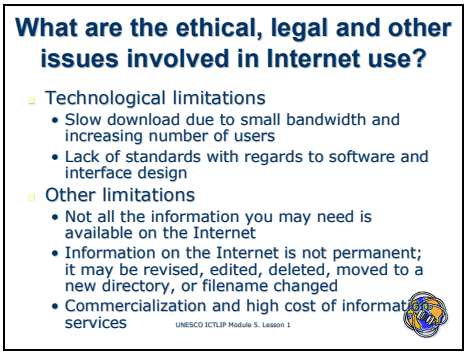
Slide 19



What are the ethical, legal and other issues involved in Internet use?

- Social and economic issues
  - Provisions for the handicapped and marginalized
  - Accessibility issues with regards to the physically handicapped
  - The "digital divide" between the information rich and information poor
- Multilingualism
- Charging for information – fee based information resources and services

Slide 20



What are the ethical, legal and other issues involved in Internet use?

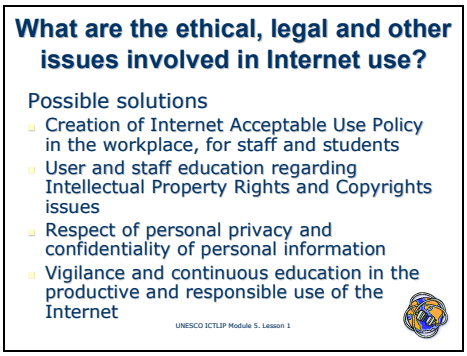
Technological limitations

- Slow download due to small bandwidth and increasing number of users
- Lack of standards with regards to software and interface design

Other limitations

- Not all the information you may need is available on the Internet
- Information on the Internet is not permanent; it may be revised, edited, deleted, moved to a new directory, or the filename changed
- Commercialization and high cost of information services

Slide 21

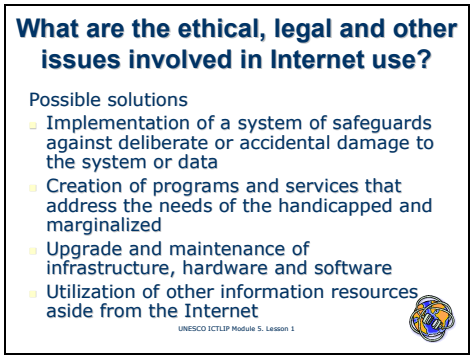


What are the ethical, legal and other issues involved in Internet use?

Possible solutions

- Creation of Internet- Acceptable Use Policy in the workplace, for staff and students
- User and staff education regarding Intellectual Property Rights and Copyrights issues
- Respect of personal privacy and confidentiality of personal information
- Vigilance and continuous education in the productive and responsible use of the Internet

Slide 22



What are the ethical, legal and other issues involved in Internet use?

Possible solutions

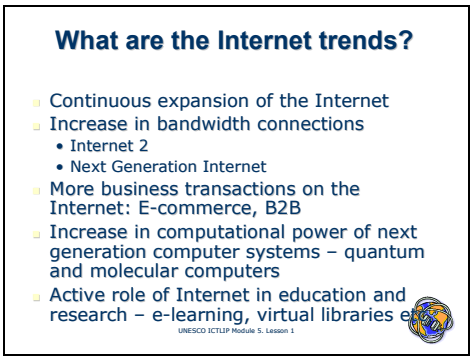
- Implementation of a system of safeguards against deliberate or accidental damage to the system or data
- Creation of programs and services that address the needs of the handicapped and marginalized
- Upgrade and maintenance of infrastructure, hardware and software
- Utilization of other information resources aside from the Internet

Activity 3-3

Read these articles:

1. Copyright and Fair Use in the Classroom, on the Internet, and the World Wide Web University of Maryland University College http://www.umuc.edu/library/copy.html
2. Copyright Laws http://www.intel.com/education/teachtech/classroom/using_internet/copyright.htm
3. Protecting Safety and Privacy http://www.intel.com/education/teachtech/classroom/using_internet/privacy.htm

Slide 23

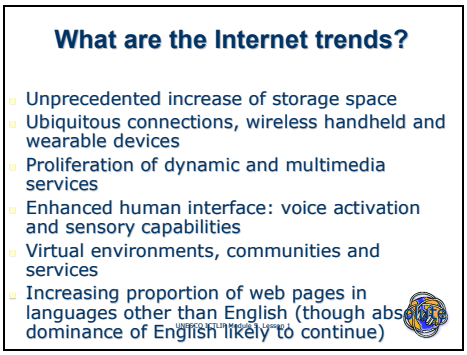


What are the Internet trends?

- Continuous expansion of the Internet both in number of hosts and users
- Increase in bandwidth connections
  - Internet 2

  - Next Generation Internet
- More business transactions on the Internet: E-commerce, B2B
- Increase in computational power of next generation computer systems – quantum and molecular computers
- Active role of Internet in education and research – e-learning, virtual libraries etc.

Slide 24



What are the Internet trends?

- Unprecedented increase of storage space
- Ubiquitous connections, wireless handheld and wearable devices
- Proliferation of dynamic and multimedia services
- Enhanced human interface: voice activation and sensory capabilities
- Virtual environments, communities and services
- Increasing proportion of web pages in languages other than English (though absolute dominance of English likely to continue)

Activity 3-4

1. Read this article: Cerf, Vinton. What Will Replace The Internet? Time.com Visions of the 21st Century http://www.time.com/time/reports/v21/tech/mag_web.html
2. Search the Internet to know more about these concepts and terms:

- Internet 2
- Next Generation Internet
- E-Commerce
- B2B
- Quantum computers
- Molecular computers
- E-learning
- Virtual Learning
- Ubiquitous mobile computing
- Virtual environments

References

Capron, H. L. (1996) Computers: Tools for an information age. (4th ed.) New York: The Benjamin/Cummings Publishing Company.

Hutchinson, S. E. & Sawyer, S. C. (2000). Computers, Communications & Information: A users introduction. (7th ed.) Boston: Irwin McGraw-Hill.

Sawyer, Stacey C. (1997) Using Information technology: A practical introduction to computers & communications. (2nd ed.) Boston, Massachusetts: Irwin McGraw-Hill

Electronic Resources

APA Electronic Reference. American Psychological Association. [Online] URL http://www.apastyle.org/elecref.html

Auer, Nicole J. *Evaluating Web Information*. Virginia Tech University Libraries. [Online] URL http://www.lib.vt.edu/research/evaluate/evaluating.html

Cerf, Vinton. *What Will Replace The Internet?* Time.com Visions of the 21st Century. [Online] URL http://www.time.com/time/reports/v21/tech/mag_web.html

Citation Style Guides for Internet and Electronic Sources. Chicago Manual of Style. [Online] URL http://www.library.ualberta.ca/guides/citation/index.cfm#Chicago

Copyright and Fair Use in the Classroom, on the Internet, and the World Wide Web. University of Maryland University College [Online] URL http://www.umuc.edu/library/copy.html

Copyright Laws. Intel Corporation. [Online] URL http://www.intel.com/education/teachtech/classroom/using_internet/copyright.htm

Harnack, Andrew. Kleppinger, Eugene. *Online! A Reference Guide to Using Internet Resources: Citation Styles.* [Online] URL http://www.bedfordstmartins.com/online/citex.html

Jane, Alexander and Tate, Marsha. *Teaching Critical Evaluation Skills for World Wide Web Resources.* Widener University Wolfgram Memorial Library. [Online] URL http://www2.widener.edu/Wolfgram-Memorial-Library/webevaluation/webeval.htm

Lederer, Naomi. *How to Evaluate A Web Page.* Colorado State University Libraries. [Online] URL http://manta.library.colostate.edu/howto/evalweb2.html

MLA Style: How do I document sources from the World Wide Web in my works-cited list? Modern Language Association. [Online] URL http://www.mla.org/www_mla_org/style/style_main.asp?level=2&mode=page&page=1&link=sty72800121438&section=sty51800124510

Ormondroyd, J., Engle, M., & Cosgrave, T. *How to Critically Analyze Information Sources.* Cornell University Olin Kroch Uris Libraries. Reference Services Division. [Online] URL http://www.library.cornell.edu/okuref/research/skill26.htm

Protecting Safety and Privacy. Intel Corporation. [Online] URL http://www.intel.com/education/teachtech/classroom/using_internet/privacy.htm

Rinaldi, Arlene H. The Net: User Guidelines and Netiquette. [Online] URL http://www.fau.edu/netiquette/net/

The Digital Dilemma: Intellectual Property in the Information Age. Committee on Intellectual Property Rights in the Emerging Information Infrastructure, National Research Council [Online] URL http://books.nap.edu/html/digital_dilemma/

Glossary of terms used in Module 5

- **Access.** Refers to the ability of the user to connect to a database, or Internet service.
- **Accessibility.** Guidelines for designing web contents accessible to people with disabilities and more available to all users whatever software, hardware and platform they are using to access the Web and for making it easier to find information on the Web.
- **Anchor.** Text and graphical elements embedded with hyperlinks and other objects users click on to jump to a web document pointed by the browser.
- **Applications software.** A program that is designed to perform a specific task.
- **ASCII.** The encoding system called American Standard Code for Information Interchange
- **Backbone.** On the Internet, packets of data are sent along transmission lines that are interconnected to a high-speed line or series of connection known as backbone, which forms a major pathway within a network.
- **Bandwidth.** A measure of the speed and amount of data in bits per second (bps) that can be sent over a particular transmission media: telephone lines, cable, microwave, etc., which determines how much data can flow through it.
- **Bit.** A shortened term used for binary digit, the smallest unit of data in a computer and has a single binary value, either 0 or 1.
- **Byte.** A series of bits of a particular length, usually 8, used to designate computer storage space. A Kilobyte (or 1 K) represents 1024 bytes and a Megabyte (1 Mb) represents one thousand Kilobytes, or one million bytes.
- **Browsers.** See Web browsers
- **Client.** Computer system or program that requests information or access to services via a network provided by another computer system or program called servers. A user at a client may request file access, remote log-in, file transfer, printing or other available services from servers.
- **Client / server.** The computing architecture designates computer system and programs as servers or clients that delegates tasks and divides the workload.
- **Copyright.** The legal right granted to an author to publish, produce, sell, or distribute an original work within certain limitations. Restrictions may apply to the use of copyrighted material by persons other than the author or creator of the work.
- **Domain name.** The easy to remember name of a web site of an individual or organization that corresponds to a series of unique numbers (IP address) that serve as routing addresses on the Internet.
- **Domain Name System (DNS).** An Internet service that translates domain names into IP addresses.
- **DNS Servers.** Servers on the Internet that acts as Internet Directory transforming domain names into IP addresses. Points to the location of a web host by providing their IP address transformed from their domain names.
- **Domain Name Registrars.** Companies accredited by ICANN (The Internet Corporation for Assigned Names and Numbers) that offers registration services for the domain names of organizations and individuals.

- **Electronic mail.** A communications tool used to send messages to and from computers. Also called e-mail.
- **End user.** Same as user. The individual providing input or using output from the computer.
- **FTP.** File Transfer protocol. Refers to the protocol and the program used to transfer files from one computer to another.
- **Graphics.** Images, Icons, and other graphical elements found on a web page.
- **Home page.** The main page of a Web site that typically serve as an index or table of contents to other web pages.
- **Hyperlinks.** The embedded hypertext links that points to other web pages and other related resources.
- **Hypertext.** Presents and relates information in a non-linear and non-hierarchical organization allowing the user to view related information through a system of hypertext links (hyperlinks).
- **HyperText Markup Language (HTML).** The standard language used to create web pages. Markup language that uses tags and attributes that web browsers interpret to display web pages on the screen.
- **HyperText Transfer Protocol (HTTP).** The underlying protocol behind the World Wide Web.
- **ICANN.** The Internet Corporation for Assigned Names and Numbers (ICANN) is the non-profit corporation that was formed to assume responsibility for the IP address space allocation, protocol parameter assignment, domain name system management, and root server system management functions previously performed under U.S. Government contract by IANA and other entities
- **Icons.** Pictographs that are used in a Windows environment to indicate operations such as copy, save, delete, etc.
- **Information.** The output of information processing. Useful data
- **Information system.** Generally a computer based system for storing and retrieving data and information.
- **Intellectual property rights.** Recognized legal claim to ownership of recorded or manifested ideas.
- **Interactive.** Pertaining to online where there is immediate interaction between user and the computer.
- **InterNIC.** The Internet's Network Information Center has been established to provide the public information regarding Internet domain name registration services.
- **Internet.** A global network of computers communicating under one set of guidelines formally called the TCP/IP.
- **Intranet.** An internal network belonging to an organization that uses TCP/IP with access limited only to members of the organization.
- **IP address.** A series of numbers called Internet Protocol numbers that serve as routing addresses on the Internet used to locate and communicate information on the Internet.
- **Local Area Network (LAN).** A group of connected computers within a small area such as a single building or section of a building that communicates and share resources.

- **Mailing list.** A group of e-mail addresses that belongs to a group of users that shares common interests, allowing them to send a single e-mail that will automatically be sent to all the addresses within the mailing list.
- **Meta-search engine.** Search engine that send your search query to several search engines simultaneously and give you a consolidated report of their findings.
- **Navigation.** The system used to explore and view the set of information and related information on a web site.
- **Netiquette.** The acceptable behavior on the Internet.
- **Newsgroups.** On-line discussion groups covering every conceivable topic or interest.
- **Packet.** A unit of information that has been formatted for transmission on a network.
- **Program.** A set of instructions for the computer to perform a particular function. Also called software.
- **Protocols.** The set of rules and standards computers used to communicate with each other.
- **Search engine.** An Internet service that searches web pages for specified keywords and returns a list of the documents where the keywords were found. Web sites that primarily function as search engines periodically search and index information on the Web and store them in their database.
- **Servers.** A computer system or program that provides service across a network. The service may be file access, login access, file transfer, printing and so on.
- **Subject directory.** Organizes Internet resources by subject headings and subheadings usually compiled by human beings who apply some selection criteria to resources included in the directory**.**
- **Site structure.** The overall layout of the web site, the connection and relationship of web documents on a web site.
- **Simple Mail Transfer Protocol (SMTP).** The protocol used for sending and receiving electronic mail.
- **TCP/IP (Transmission Control Protocol/Internet Protocol).** Suite of communications protocols used to connect computers on the Internet
- **Telnet.** Refers to the protocol and program that allows users to log on to remote hosts and use its resources.
- **Text editor.** Applications programs used to edit ASCII files like Notepad.
- **Top-level domains.** Limited number of predefined suffixes attached to Internet domain names. Some of these are: .com, .net, .org, .edu, and .mil.
- **Uniform Resource Locator (URL).** Is the uniform naming scheme that specifies unique addresses for web servers, documents and other resources, no matter what its access protocol.
- **Upload.** The process of transferring files from a client computer to a server through the Internet.
- **User friendly.** Used to describe a user interface that enables the inexperienced user to interact successfully with the computer
- **Web browser.** Application software used to search and display web pages. The client software used to access the Web.
- **Web host.** The machine that hosts web sites and applications programs needed to serve documents on the Internet. See web server

- **Web page.** An electronic document on the World Wide Web formatted using HTML and displayed using a web browser.
- **Web server.** The computer running application software that listens and respond to a client computer's request made through a web browser.
- **Web site.** A collection of related web pages of a certain individual, group, or organization connected through a system of hyperlinks, hosted in a particular domain.
- **Wide Area Network.** A network of computer systems that is not confined to a single location and covers a large area.
- **World Wide Web.** A global hypertext information system that serve as a way to access and provide information in various media via the Internet.

Evaluation Form

To help us enhance the quality and effectiveness of this module, complete and return this evaluation form.

Module: _____
Date: _____
Teacher: _____

Please rate the module on the following categories using the scales below by drawing a circle around the appropriate number.

5=Strongly Agree [SA] 4=Agree [A] 3=Neutral [N] 4=Disagree [D] 1=Strongly Disagree [SD]

Objectives and Content	SA	A	N	D	SD
Were the course objectives clearly stated?	5	4	3	2	1
Were the objectives achieved?	5	4	3	2	1
Were the topics presented relevant to your work?	5	4	3	2	1
Was the course structured in a logical way?	5	4	3	2	1
Were the activities appropriate to the content of this course?	5	4	3	2	1
Was the course easy to follow?	5	4	3	2	1
Was the course interesting and enjoyable?	5	4	3	2	1
Were your expectations met?	5	4	3	2	1

Presentation	SA	A	N	D	SD
Were the concepts and techniques explained clearly?	5	4	3	2	1
Were you encouraged to actively participate during the course?	5	4	3	2	1
Were your individual questions/problems discussed to your satisfaction?	5	4	3	2	1
Was the course well paced?	5	4	3	2	1
Were the lessons presented in a clear and well organized manner?	5	4	3	2	1

Teacher	SA	A	N	D	SD
Was the teacher knowledgeable in the subject matter?	5	4	3	2	1
Did the teacher present the material effectively?	5	4	3	2	1
Did the teacher show interest in and enthusiasm for the subject?	5	4	3	2	1
Was the teacher effective in answering questions clearly and constructively?	5	4	3	2	1

Learning Environment	SA	A	N	D	SD
Are the course materials easy to read?	5	4	3	2	1
Were the manual and the other handouts useful?	5	4	3	2	1
Were the visual aids useful?	5	4	3	2	1
Was the venue suitable for the course?	5	4	3	2	1
Was the time frame appropriate for the course?	5	4	3	2	1

The Training in General

Before the training began, how experienced were you with the subject of training?
1 (Novice) 2 (Intermediate) 3 (Advanced) 4 (Expert)

How useful was the training for your level of experience?
1 (Not Useful) 2 (Fairly Useful) 3 (Useful) 4 (Very Useful)

Do you feel you have gained new skills and knowledge? Yes No

What is the most important concept or skill conveyed in this training?

_____

_____

What is the least important concept or skill conveyed in this training?

_____

_____

What additional information should be included in the training?

_____

_____

What did you like most about the training materials?

_____

_____

What did you like least about the training materials?

_____

_____

Other comments or suggestions:

_____

_____

_____

THANK YOU!

Student's Guide

Module 5. The Internet as an Information Resource

Introductory note

This is Module 5 of the *ICT for Library and Information Professionals (ICTLIP) Training Package for Developing Countries*. This Package is intended to provide the knowledge and skills required to deal with the application of ICT to library and information services. It is meant for library and information personnel who may become trainers in the area. The Package has been developed by the UNESCO Asia & Pacific Regional Office with funding from the Japanese Fund in Trust for Communication and Information. It contains six modules:

Module 1 - Introduction to Information and Communication Technologies
Module 2 - Introduction to Integrated Library Systems
Module 3 - Information Seeking in an Electronic Environment
Module 4 - Database Design, and Information Storage and Retrieval
Module 5 - The Internet as an Information Resource
Module 6 - Web Page Concept and Design: Getting a Web Page Up and Running

All the Modules have a Teacher's Guide and a Student's Guide. The Student's Guide may be copied by the students in electronic format. The Teacher's Guide should not be distributed to the students.

The Student's Guide contains the following:

- Module Introduction
  - Introductory note
  - Learning outcomes
  - Course outline
  - Learning environment
  - Duration
  - Course content and schedule
  - Typographical conventions
- Handouts: Lessons 1-7
- Glossary
- Activities
- List of references

Learning outcomes

Module 5 is designed to enable participants to acquire knowledge and skills that will help them train other information professionals to use the Internet.

By the end of the course, students should be able to:

1. Identify Internet tools and resources
2. Utilize Internet search tools and services
3. Evaluate Internet tools and resources
4. Cite properly the information found on the Internet
5. Address the trends and issues concerning the Internet
6. Use the Internet as an information resource

Note: The content of Module 1 must be understood by all students (either by students first completing Module 1, or as a result of prior knowledge of ICT) before they proceed with the remaining five modules in the *ICTLIP Training Package*.

Course Outline

Lesson 1. How the Internet works

Scope

1. What is the Internet?
2. What are the major Internet Tools and services?
3. What is the Internet's history?
4. What are the basic Internet concepts, terms and technologies?
5. How does the Internet work?

Objectives

By the end of the lesson, students should be able to:
1. Define what is the Internet
2. Identify the major Internet tools and services
3. Discuss briefly the Internet's history
4. Understand basic Internet concepts, terms and technology
5. Describe how the Internet works

Lesson 2. How to search for information on the Internet

Scope

1. What are the ways to find information on the Internet?
2. What are the Internet search tools and services?
3. How to use the Internet tools and services?
4. How to find information on the Internet?

Objectives

By the end of the lesson, students should be able to:
1. Identify the Internet search tools and services
2. Understand how to utilize the Internet tools and services

3. Use the Internet search tools and services
4. Locate tutorials and other Web based training materials on how to use the Internet as an information resource

Lesson 3. Ethical, legal and other issues involved in using the Internet as an information resource

Scope

1. How to evaluate information resources on the Internet?
2. How to cite properly the information resources found on the Internet?
3. What are the ethical, legal and other issues involved in using the Internet?
4. What are the trends concerning the Internet?

Objectives

By the end of the lesson, students should be able to:
1. Evaluate information resources on the Internet
2. Cite properly the information resources found on the Internet
3. Address ethical, legal and other issues involved in using the Internet
4. Identify Internet trends

Learning Environment

The training room must have the facilities and technical support required to carry out the course. It should have computers with CD-ROM drives and online access to the Internet and other resources such as OPACs and CD-ROM databases. The Module should be conducted by a teacher who is knowledgeable and skilled in using computers, the Internet, CD-ROMs and a variety of electronic resources, and who is skilled in teaching courses of this nature.

Duration

The Module is designed for a one-week course of 40 hours: eight hours per day for five days.

Course content and schedule.

Day	Lessons
Day 1	Lesson 1. How the Internet works
Day 2 - 4	Lesson 2. How to search for information on the Internet
Day 5	Lesson 3. Ethical, legal and other issues involved in using the Internet as an information resource

Typographical conventions

Activity

Activity for the students

Reference

Reference and further reading materials

Glossary

Glossary of terms used in the module

Lesson 1

How the Internet works

The Internet As An Information Resource

Lesson 1: How the Internet Works

RATIONALE

In conjunction with the shift from print to digital information, the Internet is fast becoming the primary source of information, requiring librarians and information personnel to gain new skills and knowledge in using the Internet as an information resource.

Learning outcomes

By the end of the lesson, students should be able to:

- Define what is the Internet
- Identify the major Internet tools and services
- Discuss briefly the Internet's history
- Understand basic Internet concepts, terms and technology
- Describe how the Internet works

Scope

- What is the Internet?
- What are the major Internet tools and services?
- What is the Internet's history?
- What are the basic Internet concepts, terms and technologies?
- How does the Internet work?

What is the Internet?

The Internet is a global network of computer networks utilizing a suite of protocols called TCP/IP (Transmission Control Protocol/Internet Protocol) that supports interconnection of a number of different computer networks

What is the Internet?

The Internet covers large, international Wide Area Networks (WAN's) as well as smaller Local Area Networks (LAN's) and individual computers connected to the Internet worldwide

What is the Internet?

The Internet supports communication and sharing of data, and offers vast amount of information through a variety of services and tools

What are the major Internet tools and services?

- Electronic mail (email)
- Newsgroups
- Internet Relay Chat (IRC)
- Telnet
- File Transfer Protocol (FTP)
- World Wide Web (www)

What are the major Internet tools and services?

E-mail

- The most popular use of the Internet
- Available for free on the Web
  - Yahoo Mail, Hotmail, Eudoramail
- Valid e-mail address consists of a username and a domain name separated by the @ sign
  - ex. juandelacruz@mail.com

What are the major Internet tools and services?

Newsgroups

- Service dedicated to discussions on a particular topic through posted articles
- Accessible through newsreaders
- Names signify to users the topic of discussion
  - ex. alt.library.automation

What are the major Internet tools and services?

IRC (Internet Relay Chat)

- Allows real-time text based communication through the Internet
- Organized by topic of interest into "channels"
- Discussion occurs in "chatrooms"
- Some Websites have built-in chatrooms

What are the major Internet tools and services?

Telnet

- Service that allows one computer to access another computer
- Enables the user to exchange data and issue commands on the other computer, the Telnet host
- Mainly used by libraries to allow access to information stored in their computers

What are the major Internet tools and services?

FTP (File Transfer Protocol)

- Allows the transfer or copying of files from one computer to another
- Ideal for procuring or sending files to a remote computer
- FTP Programs available freely
- Modern browsers have built in FTP capabilities

What are the major Internet tools and services?

World Wide Web (www)

- Invented in 1991 by Tim Berners-Lee, the web is the fastest-growing Internet service.
- Based on HTML (Hyper Text Markup Language) allowing users to access data in multimedia format
- Simplest unit is the Webpage, primarily a document encoded in HTML format that can be accessed by using a browser
- HTML links contents of a Webpage to each other as well as to other Web pages through a hyperlink
- Each page has an address, a Uniform Resource Locator (URL)

What is the Internet's history?

- The Internet grew from ARPANET the first computer network designed for the Advanced Research Projects Agency (ARPA) of the U.S Department of Defense
- ARPA sponsored research on interconnecting geographically remote computers to allow communication and sharing of data and resources
- The goal was to create a communications network that could exist even if parts of it was incapacitated

What is the Internet's history?

- One of the early developments that proved significant to the success of ARPANET (which later on becomes the Internet) were "packet switching" and "TCP/IP"
- Packet switching involves digital systems that transmit data in small packets that use the best current path to their destination
- TCP/IP is the core Internet protocol that allows computers to communicate with each other

What is the Internet's history?

- Realizing the value of interconnected computers the academic community started with its own research network
- The NSFNet, created and named for the National Science Foundation, linked academic networks that connected universities and research organizations around North America.
- Networks from Europe and other countries were connected to NSFNet making it the backbone of the Internet.

What is the Internet's history?

- ARPANET was decommissioned and the management of the Internet was passed on to the NSFNET
- Restriction on commercial use was lifted
- The emergence of World Wide Web, and Mosaic brought an unprecedented growth to the Internet
- NSFNET reverts back to a research project, leaving the Internet in commercial hands and its management to independent organizations

What is the Internet's history?

Summary

- The Internet started as a military network called ARPANET, which was involved in networking research
- The Internet later expanded to include universities, businesses and individuals
- Today, the Internet is also referred to as the Net, Information Superhighway, and Cyberspace

How does the Internet work?

- Protocols – standardized rules that define how computers communicate and exchange data
- IP address – unique number used to identify computers on the Internet
- Domain name – structured naming system to locate computers on the Internet
- URL – uniform naming scheme that specifies unique addresses of Internet resources
- Client and server – computing architecture used by most Internet services

How does the Internet work?

TCP/IP (Transmission Control Protocol / Internet Protocol)

- The Internet is a packet-switching network that uses TCP/IP as its core protocol
- TCP/IP is a suite of protocols that govern network addresses and the organization and packaging of the information to be sent over the Internet
  - TCP – flow control and recovery of packets
  - IP – addressing and forwarding of individual packets

How does the Internet work?

Internet Protocols

- HTTP (Hypertext Transfer Protocol Protocol) - for accessing and transmitting World Wide Web documents
- FTP (File Transfer Protocol Protocol) - for transferring files from one computer to another
- Gopher Protocol - for accessing documents via Gopher menus (no longer widely used)
- Telnet Protocol - allows users to logon to a remote computer
- SMTP (Simple Mail Transfer Protocol) for sending and managing electronic mails (e-mail)

How does the Internet work?

IP address

- IP address is a unique address assigned to each computer connected to the Internet
- It is used by TCP/IP to route packets of information from a sender to a location on the Internet
- IP address consist of four sets of numbers ranging from 0 to 255 Ex. 249.7.13.53

How does the Internet work?

IP address

- 249.7.13.53
- The first two number sets designate the network
- The third number set identifies the local network
- The fourth number set identifies the particular machine

How does the Internet work?

Domain names

- Domain names are the alias or English language equivalent of a computer's IP addresses
- Domain Name System (DNS) allows the use of easier to remember domain names instead of IP addresses to locate computers on the Internet
- Domain Name Resolvers scattered across the Internet translate domain names into IP addresses

How does the Internet work?

Domain names

- Domain names have two parts:
  - First part names the host computer
  - Second part identifies the top level domain
- Top level domains (TLD) – identifies the type of host
  - Generic Top Level Domains
  - Country Code Top Level Domains
- Domain names are used in URLs and e-mail addresses

How does the Internet work?

Top Level Domains

- **.com** – commercial/company site
- **.edu/ac** - educational/academic
- **.gov** – government site
- **.org** – non-profit organization
- **.mil** – military sites
- **.int** – international organizations
- **.net** – network providers

How does the Internet work?

Additional Top Level Domains

- **.aero** - restricted use by the air transportation industry
- **.biz** - general use by businesses
- **.coop** - restricted use by cooperatives
- **.info** - general use by both commercial and non-commercial sites
- **.museum** - restricted use by museums
- **.name** - general use by individuals
- **.pro** - restricted use by certified professionals and professional entities

How does the Internet work?

Country Code Top Level Domains

- **.au** – Australia
- **.cn** – China
- **.fj** – Fiji
- **.id** – Indonesia
- **.jp** – Japan
- **.mn** – Mongolia
- **.ph** – Philippines
- **.sg** – Singapore
- **.uk** – United Kingdom
- **.us** – United States
- **.tw** - Taiwan
- **.vn** - Vietnam
- The complete list can be accessed at http://www.iana.org/cctld/cctld-whois.htm

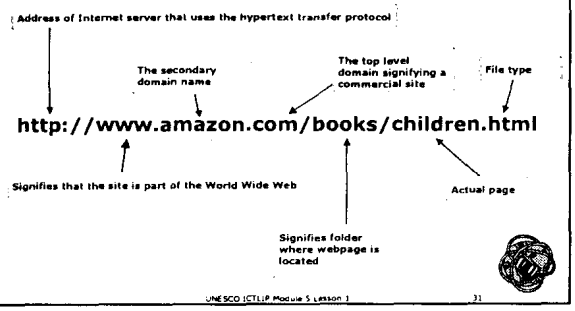
How does the Internet work?

Uniform Resource Locator (URL)

- Each Internet document or file has a unique address called a URL
- The URL comprises of three parts:
  - Protocol – lets the computer know how to process the information it receives
  - Domain name – Internet address of the computer hosting the site and storing the documents
  - Path – lets the computer which directory and file to access

What is URL?

UNIFORM RESOURCE LOCATOR



How does the Internet work?

http://www.amazon.com/books/children.html

- **"http"**
  - transfer protocol
- **"www"**
  - server name
- **"amazon"**
  - second-level domain name
- **"com"**
  - top-level domain name
- **"books"**
  - directory name
- **"children"**
  - file name
- **"html"**
  - file type

How does the Internet work?

Client Server

- The client server model is the distributed computing architecture used by most Internet services, generally classifying hosts on the Internet as clients and servers
- Client programs are used to access Internet services provided by host computers running server programs that provide the information or service needed
- For example web browsers are client programs used to access information hosted by web servers

Lesson 2

How to search for information on the Internet

The Internet As An Information Resource

Lesson 2: How to search for information on the Internet

Learning outcomes

By the end of the lesson, students should be able to:

- Identify the Internet search tools and services
- Understand how to utilize the Internet tools and services
- Use the Internet search tools and services
- Locate tutorials and other Web based training materials on how to use the Internet as an information resource

Scope

- What are the ways to find information on the Internet?
- What are the Internet search tools and services?
- How to use the Internet tools and services?
- How to find information on the Internet?

What are the ways to find information on the Internet?

- Net surfing –involves scanning pages and clicking on links randomly
- Using an URL – quickest way to find information on the Internet but you must know where it is located
- Use search tools and services – can assist you in locating the information you need among the vast amount of information available on the Net

What are the Internet search tools and services?

- Search engines
- Subject directories
- Invisible Web
- Meta-search engines
- Specialized search engines
- Other search tools

What are the Internet search tools and services?

Search engines

- Websites that uses "bots" or "spiders" that periodically search the World Wide Web and automatically index and store the information in their database
- Examples
  - Google - http://www.google.com
  - Alltheweb - http://www.alltheweb.com
  - Altavista - http://www.altavista.com

What are the Internet search tools and services?

Subject directories

- Listings and directories of web page files that have been assembled manually, selected and evaluated by humans
- Examples
  - Yahoo - http://www.yahoo.com
  - Librarian's Index – http://www.lii.org
  - LookSmart - http://www.looksmart.com

What are the Internet search tools and services?

Invisible Web

- Web pages that cannot be ordinarily reached through search engines or subject directories
- Examples
  - Langenberg – http://www.langenberg.com
  - Complete Planet - http://www.completeplanet.com
  - Direct Search - http://gwis2.circ.gwu.edu/~gprice/direct.htm

What are the Internet search tools and services?

Meta-search engines

- Send your search query to several search engines simultaneously and give you a consolidated report of their findings
- Examples
  - Metacrawler – http://www.metacrawler.com
  - Dogpile – http://www.dogpile.com
  - ProFusion – http://www.profusion.com

What are the Internet search tools and services?

Specialized search engines

- Search engines dedicated to indexing web pages on specific topics
- Examples
  - Locate mailing lists and newsgroups
    - The Lizt – http://www.liszt.com
    - Mailbase – http://www.mailbase.ac.uk
    - Dejanews – http://www.dejanews.com
    - Google groups - http://groups.google.com/

What are the Internet search tools and services?

- Other search tools and services
- FTP archives - locate files on anonymous FTP sites
  - Ex. - ArchiePlex -http://archie.emnet.co.uk/form.html
- Web and e-mail people finder
  - Ex. - Four11 - http://people.yahoo.com
- Multimedia search
  - Ex. - Webseek - http://www.ctr.columbia.edu/webseek/

What are the Internet search tools and services?

Other search tools and services

- Virtual Reference Libraries – online dictionaries, indexes, etc.
  - Ex. Research-it - http://www.iTools.com/research-it
- Virtual Reference Desks – online reference services
  - Ex – AskA+Locator - http://www.vrd.org/locator/subject.shtml
- Z39.50 Gateways – gateways to library catalogs
  - Ex – LC Online Catalog - http://lcweb.loc.gov/z3950/gateway.html

How to use the Internet tools and services?

- Most if not all of the Internet tools and services can be used through the World Wide Web
- To be able to use the search tools on the Web to find information resources on the Net one must first know how to use a browser
- Features and functions of available search tools and services vary accordingly, one must be familiar with at least two or more search tools to become effective in finding information

How to use the Internet tools and services?

Browsers

- Programs used to access the World Wide Web
- Allows a user to access resources on a server
- Displays the contents of the web in multimedia format
- Examples of browsers
  - Netscape Navigator, Internet Explorer, America Online, Opera

How to use the Internet tools and services?

Using a Browser

- You need to be familiar with the features of your web browser and know how to use it
  - enter a URL in the location or address bar to visit a particular web site
  - open, resize, close a browser window
  - locate and use the navigation tools on your browser ie., back, reload/refresh, home, print
  - identify and use hyperlinks to get around the web
  - download documents and files
  - use plug-ins like Adobe Acrobat or Macromedia Shockwave

How to use the Internet tools and services?

- **Generally there are two ways of using search tools and services**
  - **Browsing – usually applied to directories where subjects are arranged hierarchically**
  - **Keywords search – search box is provided for entering keywords to search the database**
    - **Simple search – search on the keywords**
    - **Advanced search – search can be refined using various techniques**

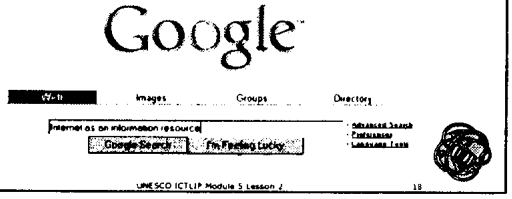
How to use the Internet tools and services?

- **Browsing subject directories**
- **From the home page you start with a broad subject area and follow the links to more specific areas until you reach the subject you wish to explore, then you click on one of the displayed results to go to the selected page (document)**

Home > Computers and Internet > Internet > World Wide Web > **Beginner's Guides**

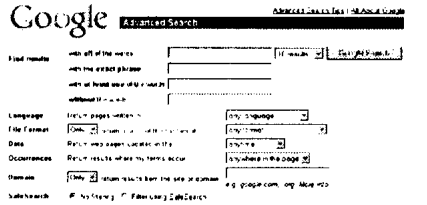
How to use the Internet tools and services?

- Simple keywords search
- Type keywords on the search box , press Enter on the keyboard and then select from the results



How to use the Internet tools and services?

- Advanced search
- Most search engines allow you to refine your search

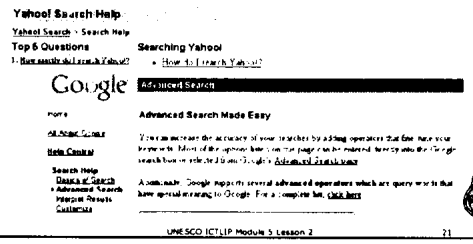


How to use the Internet tools and services?

- Meta-search engines, invisible web, specialized search engines and other search tools and services use the same basic principles in locating your information need
- Ideally combinations of both browsing and keyword searching (simple and advanced) will yield more accurate results

How to use the Internet tools and services?

- Each Internet tool and service provides help files that can guide you in utilizing it more effectively



How to find information on the Internet?

- **Analyze your topic**
- **Choose the search tool you need**
- **Learn how to use the search tools**
- **Formulate your search strategy**
- **Search with a question in mind**

How to find information on the Internet?

- **Analyze your topic**
- What are you searching? for what purpose?
- What type of information do you want?
- The purpose is to determine what terms to use in your search and what search tool features you need to search successfully

How to find information on the Internet?

- **Choose the search tool you need**
- Search tools find documents matching your information need
- Every search tool is different. They vary in features and size/comprehensiveness
- The most important features in selecting a search tool are those which allow you to refine or focus your search when you need to

How to find information on the Internet?

- **Learn how to use the search tools**
- Being familiar with most of the major search tools and their capabilities allows you to zero in on your search
- Learn how to use Boolean logic, phrase searching, truncation, field searching, etc.
- Spend time reading the Help files to know its features and capabilities

How to find information on the Internet?

- **Formulate your search strategy**
- Formulating your search strategy beforehand allows you to search for information systematically
- It also saves you a lot of time and money if you are paying for Internet access by the minute
- Your search strategy should be based on your information need

How to find information on the Internet?

- **Search with a question in mind**
- How am I going to use this?
- Do I have enough or too much information?
- Scan the content of the material to find out if it has anything of value
- Evaluate the website for accuracy and authority

How to find information on the Internet?

Simple search strategy

- pick your site
- learn to use the search tools
- choose your words carefully
- vary your spelling
- know how to widen your search
- know how to use the refining techniques
- use multiple search engines
- use meta-search engines
- use specialized search engines
- reuse your search

How to find information on the Internet?

Tips in finding information on the Internet

- Learn the features and functions of your browser
- If you know the URL go directly to it
- Always check for typing errors
- Define the topic in terms of concepts
- Express each concept using keywords multiple keywords or phrases
- Search multiple terms or exact phrase and not single words

How to find information on the Internet?

Tips in finding information on the Internet

- Read the help screens and search tips
- Utilize two or more search tools
- Use any advanced features of the search engine
- Use services which index quality sites
- Evaluate the results
- Download the information
- Cite your source properly

How to find information on the Internet?

Pitfalls

- endless links that leads to getting lost
- data traffic takes eternity to download
- too many; too few; many irrelevant sites
- information overload

Solutions

- stop / try another search
- try it another time /site; change ISP
- refine or vary your search
- search with a more specific question in mind

How to find information on the Internet?

To effectively find information we must:

- Clearly define what we are looking for
- Become familiar with the information resources and different search tools available via the Internet
- Learn how to use at least one or two of the search tools effectively
- Create and try our own search strategy
- Evaluate retrieved information and cite the source properly

Lesson 3

Ethical, legal and other issues involved in using the Internet as an information resource

The Internet As An Information Resource

Lesson 3: Ethical, legal and other issues using the Internet as an information resource

Learning outcomes

By the end of the lesson, students should be able to:

- Evaluate information resources on the Internet
- Cite properly the information resources found on the Internet
- Address ethical, legal and other issues involved in using the Internet
- Identify Internet trends

Scope

- What are the issues and concerns in using the Internet as an information resource?
- How to evaluate information resources on the Internet?
- How to cite properly the information resources found on the Internet?
- What are the ethical, legal and other issues involved in using the Internet?
- What are the Internet trends?

How to evaluate web sites?

- Unlike the case of printed douments quality of information on the Internet cannot be guaranteed
- Almost anyone can publish on the web
- Little editorial review process
- Anonymity often makes it difficult to determine authorship
- Information frequently is not dated, and if dated it is not necessarily very recent
- One must develop skills to evaluate information found on the Internet

How to evaluate web sites?

Criteria in evaluating Internet resources

- Accuracy – free from error and alteration
- Authority – credibility of author / publishing or sponsoring body
- Objectivity – creator and/or sponsor's point of view / bias
- Currency – timeliness of information
- Content – scope and depth of material
- Design – style, structure, and functionality
- Accessibility – availability of the resource

How to evaluate web sites?

Accuracy

- Is it the original document?
- If it is not the original, is it authentic? Not altered or forged?
- Is there a way to verify authenticity of the content?
- Were the sources of information well documented?
- How reliable is the information?
- Are there any grammatical, spelling, and typographical errors on the page?

How to evaluate web sites?

Authority

- Who is the author?
- Is the author credible? qualified or an expert on the subject matter?
- Is there a way to know more about the author? (education, current job position, publications etc.)
- Who is the publisher of the page?
- Is it a reputable publishing body?
- Check the domain of the URL what does it tell you?

How to evaluate web sites?

Objectivity

- From which point of view is the information presented?
- Does it show a minimum of bias?
- Is it trying to sway opinion?
- Does it reflect the aims or purpose of the web site?
- Does the site belong to individuals or organizations that have a stake on the matter?
- Are any political or philosophical agendas being pushed?

How to evaluate web sites?

Currency / Timeliness

- Is the information dated?
- Is it timely? up-to-date?
- Are the links current and still available?
- Are there indications that the material is kept current?
- When was the page created?
- When was it last updated?

How to evaluate web sites?

Content

- Who is the target audience of the Web site?
- What is the scope of the web site?
- How in-depth are the materials?
- Is it in line with the purpose of the web site?
- Does it provide meaningful and useful information?
- Was the source of information well documented and cited properly?

How to evaluate web sites?

Design

- Does it follow established design principles?
- Is the site easy to read and navigate?
- Is there a balance between style and functionality?
- Are the links relevant and appropriate?
- Are there any accessibility provisions for special categories of users such as people with visual impairments?
- Does the site use graphics and new technologies judiciously?

How to evaluate web sites?

Accessibility

- Can it be viewed using different browsers?
- Does it require a special program to read the content?
- Is the information readily available on the web site?
- Will the site be updated and maintained?
- Is the information available for free? for a fee?

How to cite Internet resources?

Internet information resources citation and style manuals

- APA (American Psychological Association) format - based on APA's Publication Manual Fifth Edition:
  - APA Electronic Reference http://www.apastyle.org/elecref.html
- MLA (Modern Language Association) format - based on MLA Handbook for Writers of Research Papers 5th Edition:
  - MLA Style: How do I document sources from the World Wide Web in my works-cited list? http://www.mla.org/www_mla_org/style/style_main.asp?level=2&mode=page&page=1&link=sty72800121438&section=sty51800124510

How to cite Internet resources?

- Chicago Manual of Style - based on The Chicago Manual of Style 14th edition
  - Citation Style Guides for Internet and Electronic Sources http://www.library.ualberta.ca/guides/citation/index.cfm#Chicago
- More examples : Online! A Reference Guide to Using Internet Resources http://www.bedfordstmartins.com/online/citex.html

What are the ethical, legal and other issues involved in Internet use?

- Netiquettes - ethics governing Internet - acceptable behavior on the Net, mostly related to use of e-mail and relay chat
  - For Example:
    - Be brief, keep paragraphs short
    - Try to use mixed upper and lowercase
    - Use CAPITALS & special characters for emphasis only
    - Do not SPAM or send junk e-mail
    - Refrain from flaming (sending hate messages)
    - Follow acceptable standards of politeness as used in all kinds of communication
    - Be wary of virus hoaxes, urban legends and chain letters

What are the ethical, legal and other issues involved in Internet use?

- Intellectual Property Rights
  - Plagiarism – using somebody else's work and claiming it as your own
  - Copyright Law – protection of the author's original work
  - Fair Use – reproduction of materials for educational and research purpose
  - Software piracy – theft and illegal reproduction of software
  - File swapping – exchange of digital materials like audio and video over the Net without the owner's permission

What are the ethical, legal and other issues involved in Internet use?

- Civil liberties – issues regarding the rights of an individual
  - Freedom of speech – ability to express oneself on the Internet
  - Personal privacy and records confidentiality– handling of personal information, e-mail and other electronic correspondence
    - in the USA the FBI uses a software named "Carnivore" to spy on e-mail passing through ISPs
    - collection of user's data i.e. personal information and browsing habits by some software (spyware), and using it directly or selling it for a profit
  - Censorship – regulation or control of content
    - for example: use of blocking or filtering software

What are the ethical, legal and other issues involved in Internet use?

- Cybercrimes (Computer facilitated crimes)
  - Hacking / Cracking – breaking-in to computer systems with or without malicious intent
  - Dissemination of Viruses, Worms, Trojan Horses, and other similar destructive software
  - Denial of service and other attacks
  - Internet Fraud – false advertisement and malpractices of individuals and companies
  - Spamming – sending unsolicited e-mail
  - Flaming – sending of hate messages
  - Pornography – proliferation of obscene and indecent materials

What are the ethical, legal and other issues involved in Internet use?

- Social and economic issues
- Provisions for the handicapped and marginalized
  - Accessibility issues with regards to the physically handicapped
  - The widening "digital divide" between the information rich and information poor
- Multilingualism
- Charging for information – fee based information resources and services

What are the ethical, legal and other issues involved in Internet use?

- Technological limitations
  - Slow download due to small bandwidth and increasing number of users
  - Lack of standards with regards to software and interface design
- Other limitations
  - Not all the information you may need is available on the Internet
  - Information on the Internet is not permanent; it may be revised, edited, deleted, moved to a new directory, or filename changed
  - Commercialization and high cost of information services

What are the ethical, legal and other issues involved in Internet use?

Possible solutions

- Creation of Internet Acceptable Use Policy in the workplace, for staff and students
- User and staff education regarding Intellectual Property Rights and Copyrights issues
- Respect of personal privacy and confidentiality of personal information
- Vigilance and continuous education in the productive and responsible use of the Internet

What are the ethical, legal and other issues involved in Internet use?

Possible solutions

- Implementation of a system of safeguards against deliberate or accidental damage to the system or data
- Creation of programs and services that address the needs of the handicapped and marginalized
- Upgrade and maintenance of infrastructure, hardware and software
- Utilization of other information resources aside from the Internet

What are the Internet trends?

- Continuous expansion of the Internet
- Increase in bandwidth connections
  - Internet 2
  - Next Generation Internet
- More business transactions on the Internet: E-commerce, B2B
- Increase in computational power of next generation computer systems – quantum and molecular computers
- Active role of Internet in education and research – e-learning, virtual libraries etc

What are the Internet trends?

- Unprecedented increase of storage space
- Ubiquitous connections, wireless handheld and wearable devices, Internet appliance etc.
- Proliferation of dynamic and multimedia services
- Enhanced human interface: voice activation and sensory capabilities
- Virtual environments, communities and services
- Increasing proportion of web pages in languages other than English (though absolute dominance of English likely to continue)

Glossary of terms used in Module 5

- **Access.** Refers to the ability of the user to connect to a database, or Internet service.
- **Accessibility.** Guidelines for designing web contents accessible to people with disabilities and more available to all users whatever software, hardware and platform they are using to access the Web and for making it easier to find information on the Web.
- **Anchor.** Text and graphical elements embedded with hyperlinks and other objects users click on to jump to a web document pointed by the browser.
- **Applications software.** A program that is designed to perform a specific task.
- **ASCII.** The encoding system called American Standard Code for Information Interchange
- **Backbone.** On the Internet, packets of data are sent along transmission lines that are interconnected to a high-speed line or series of connection known as backbone, which forms a major pathway within a network.
- **Bandwidth.** A measure of the speed and amount of data in bits per second (bps) that can be sent over a particular transmission media: telephone lines, cable, microwave, etc., which determines how much data can flow through it.
- **Bit.** A shortened term used for binary digit, the smallest unit of data in a computer and has a single binary value, either 0 or 1.
- **Byte.** A series of bits of a particular length, usually 8, used to designate computer storage space. A Kilobyte (or 1 K) represents 1024 bytes and a Megabyte (1 Mb) represents one thousand Kilobytes, or one million bytes.
- **Browsers.** See Web browsers
- **Client.** Computer system or program that requests information or access to services via a network provided by another computer system or program called servers. A user at a client may request file access, remote log-in, file transfer, printing or other available services from servers.
- **Client / server.** The computing architecture designates computer system and programs as servers or clients that delegates tasks and divides the workload.
- **Copyright.** The legal right granted to an author to publish, produce, sell, or distribute an original work within certain limitations. Restrictions may apply to the use of copyrighted material by persons other than the author or creator of the work.
- **Domain name.** The easy to remember name of a web site of an individual or organization that corresponds to a series of unique numbers (IP address) that serve as routing addresses on the Internet.
- **Domain Name System (DNS).** An Internet service that translates domain names into IP addresses.
- **DNS Servers.** Servers on the Internet that acts as Internet Directory transforming domain names into IP addresses. Points to the location of a web host by providing their IP address transformed from their domain names.
- **Domain Name Registrars.** Companies accredited by ICANN (The Internet Corporation for Assigned Names and Numbers) that offers registration services for the domain names of organizations and individuals.

- **Electronic mail.** A communications tool used to send messages to and from computers. Also called e-mail.
- **End user.** Same as user. The individual providing input or using output from the computer.
- **FTP.** File Transfer protocol. Refers to the protocol and the program used to transfer files from one computer to another.
- **Graphics.** Images, Icons, and other graphical elements found on a web page.
- **Home page.** The main page of a Web site that typically serve as an index or table of contents to other web pages.
- **Hyperlinks.** The embedded hypertext links that points to other web pages and other related resources.
- **Hypertext.** Presents and relates information in a non-linear and non-hierarchical organization allowing the user to view related information through a system of hypertext links (hyperlinks).
- **HyperText Markup Language (HTML).** The standard language used to create web pages. Markup language that uses tags and attributes that web browsers interpret to display web pages on the screen.
- **HyperText Transfer Protocol (HTTP).** The underlying protocol behind the World Wide Web.
- **ICANN.** The Internet Corporation for Assigned Names and Numbers (ICANN) is the non-profit corporation that was formed to assume responsibility for the IP address space allocation, protocol parameter assignment, domain name system management, and root server system management functions previously performed under U.S. Government contract by IANA and other entities
- **Icons.** Pictographs that are used in a Windows environment to indicate operations such as copy, save, delete, etc.
- **Information.** The output of information processing. Useful data
- **Information system.** Generally a computer based system for storing and retrieving data and information.
- **Intellectual property rights.** Recognized legal claim to ownership of recorded or manifested ideas.
- **Interactive.** Pertaining to online where there is immediate interaction between user and the computer.
- **InterNIC.** The Internet's Network Information Center has been established to provide the public information regarding Internet domain name registration services.
- **Internet.** A global network of computers communicating under one set of guidelines formally called the TCP/IP.
- **Intranet.** An internal network belonging to an organization that uses TCP/IP with access limited only to members of the organization.
- **IP address.** A series of numbers called Internet Protocol numbers that serve as routing addresses on the Internet used to locate and communicate information on the Internet.
- **Local Area Network (LAN).** A group of connected computers within a small area such as a single building or section of a building that communicates and share resources.

- **Mailing list.** A group of e-mail addresses that belongs to a group of users that shares common interests, allowing them to send a single e-mail that will automatically be sent to all the addresses within the mailing list.
- **Meta-search engine.** Search engine that send your search query to several search engines simultaneously and give you a consolidated report of their findings.
- **Navigation.** The system used to explore and view the set of information and related information on a web site.
- **Netiquette.** The acceptable behavior on the Internet.
- **Newsgroups.** On-line discussion groups covering every conceivable topic or interest.
- **Packet.** A unit of information that has been formatted for transmission on a network.
- **Program.** A set of instructions for the computer to perform a particular function. Also called software.
- **Protocols.** The set of rules and standards computers used to communicate with each other.
- **Search engine.** An Internet service that searches web pages for specified keywords and returns a list of the documents where the keywords were found. Web sites that primarily function as search engines periodically search and index information on the Web and store them in their database.
- **Servers.** A computer system or program that provides service across a network. The service may be file access, login access, file transfer, printing and so on.
- **Subject directory.** Organizes Internet resources by subject headings and subheadings usually compiled by human beings who apply some selection criteria to resources included in the directory**.**
- **Site structure.** The overall layout of the web site, the connection and relationship of web documents on a web site.
- **Simple Mail Transfer Protocol (SMTP).** The protocol used for sending and receiving electronic mail.
- **TCP/IP (Transmission Control Protocol/Internet Protocol).** Suite of communications protocols used to connect computers on the Internet
- **Telnet.** Refers to the protocol and program that allows users to log on to remote hosts and use its resources.
- **Text editor.** Applications programs used to edit ASCII files like Notepad.
- **Top-level domains.** Limited number of predefined suffixes attached to Internet domain names. Some of these are: .com, .net, .org, .edu, and .mil.
- **Uniform Resource Locator (URL).** Is the uniform naming scheme that specifies unique addresses for web servers, documents and other resources, no matter what its access protocol.
- **Upload.** The process of transferring files from a client computer to a server through the Internet.
- **User friendly.** Used to describe a user interface that enables the inexperienced user to interact successfully with the computer
- **Web browser.** Application software used to search and display web pages. The client software used to access the Web.
- **Web host.** The machine that hosts web sites and applications programs needed to serve documents on the Internet. See web server

- **Web page.** An electronic document on the World Wide Web formatted using HTML and displayed using a web browser.
- **Web server.** The computer running application software that listens and respond to a client computer's request made through a web browser.
- **Web site.** A collection of related web pages of a certain individual, group, or organization connected through a system of hyperlinks, hosted in a particular domain.
- **Wide Area Network.** A network of computer systems that is not confined to a single location and covers a large area.
- **World Wide Web.** A global hypertext information system that serve as a way to access and provide information in various media via the Internet.

Lesson 1

Activity 1-1

Visit the following sites:

1. Learn the Net: The Animated Internet
   http://www.learnthenet.com/english/animate/animate.htm
2. A Basic Guide to the Internet
   http://library.albany.edu/internet/internet.html

Lesson 1

Activity 1-2

Visit the following sites to know more about the Internet's history:

1. A Brief History of the Internet and Related Networks. Vint Cerf. http://www.isoc.org/internet/history/cerf.shtml
2. The History of the Internet. Dave Kristula. http://www.davesite.com/webstation/net-history.shtml

Lesson 1

Activity 1-3

Read the following articles:

1. TCP/IP Networking - What is TCP/IP? http://tutorials.beginners.co.uk/read/category/90/id/282
2. Internet Protocols. http://www.rad.com/networks/1997/nettut/protocols.html
3. Internet protocol and addressing. http://supportnet.merit.edu/m-intint/t-netbas/text/intpro.html
4. Understanding IP Addressing. Webopedia. http://www.webopedia.com/DidYouKnow/2002/March/IPaddressing.html

Lesson 1

Activity 1-4

Read the following articles:

1. Introduction to Domain Name Service. http://supportnet.merit.edu/m-intint/t-domnam/text/intro1.html.
2. IANA Domain Name Services. http://www.iana.org/domain-names.htm
3. The Domain Name System: A Non-Technical Explanation – Why Universal Resolvability Is Important? InterNIC FAQ. http://www.internic.net/faqs/authoritative-dns.html

Lesson 1

Activity 1-5

Visit these sites:

1. Learn the NET: Anatomy of a URL.
   http://www.learnthenet.com/english/web/110www.htm
2. The Anatomy of a URL (Uniform Resource Locator).
   http://www2.widener.edu/Wolfgram-Memorial-Library/pyramid/wwwanato.htm

Lesson 1

Activity 1-6

Read these articles:

1. Introduction to Client/Server Networking: A proven approach to distributed computing
   http://compnetworking.about.com/library/weekly/aa050201a.htm
2. Client/Server Software Architectures-An Overview.
   http://www.sei.cmu.edu/str/descriptions/clientserver_body.html
3. What is client/server computing?
   http://www.apinforma.com/biblio/online/internic/cliensrv/sld01.html

Lesson 2

Activity 2-1

1. Read this article (Lesson 1-4):
Bare Bones 101: http://www.sc.edu/beaufort/library/lesson1.html
2. Visit this site:
Internet Search Tools (Library of Congress Explore the Internet)
http://www.loc.gov/global/search.html

Lesson 2

Activity 2-2

Read these articles:

1. Web Browsers - http://www.learnthenet.com/english/html/12browser.htm
2. Web browser primer - http://www.webteacher.org/winexp/browser/browser.html

Lesson 2

Activity 2-3

1. Go to Yahoo.com and search for a specific topic.
2. Write down the topic you searched for and the number of results (hits).

Lesson 2

Activity 2-4

1. Go to Google advanced search page and refine your search for the same topic you searched earlier.
2. Write down the advance features you used, and then compare the number of results with the simple search you did earlier.

Lesson 2

Activity 2-5

Visit the sites of the search tools and services discussed in the earlier slides and use them to search for information.

Lesson 2

Activity 2-6

Read this article:
Surfing with a Purpose: Process and strategy put to the test on the Internet
http://www.educause.edu/ir/library/html/erm9851.html

Lesson 2

Activity 2-7

Read these articles:

1. Searching techniques
   http://www.lib.flinders.edu.au/services/infolit/web/stech.html
2. Bare Bones 101 (Lesson 6-10)
   http://www.sc.edu/beaufort/library/lesson1.html

Lesson 2

Activity 2-8

1. Use the different Internet search tools to locate tutorials and other Web based training materials on how to use the Internet as an information resource.
2. List the materials you have found and their corresponding URL's

Lesson 3

Activity 3-1

1. Read these articles:
- Lederer, Naomi. How to Evaluate A Web Page. Colorado State University Libraries http://manta.library.colostate.edu/howto/evalweb2.html
- Evaluating Web Information http://www.lib.vt.edu/research/evaluate/evaluating.html

2. Evaluate the web sites and articles you found in Lesson 2 using the criteria discussed.

Lesson 3

Activity 3-2

1. Visit the sites discussed in the previous slides.
2. Cite the web sites and articles you found in Lesson 2 using one of the citation style manuals.

Lesson 3

Activity 3-3

1. Copyright and Fair Use in the Classroom, on the Internet, and the World Wide Web University of Maryland University College http://www.umuc.edu/library/copy.html
2. Copyright Laws http://www.intel.com/education/teachtech/classroom/using_internet/copyright.htm
3. Protecting Safety and Privacy http://www.intel.com/education/teachtech/classroom/using_internet/privacy.htm

Lesson 3

Activity 3-4

1. Read this article: Cerf, Vinton. What Will Replace The Internet? Time.com Visions of the 21st Century http://www.time.com/time/reports/v21/tech/mag_web.html
2. Search the Internet to know more about these concepts and terms:

- Internet 2
- Next Generation Internet
- E-Commerce
- B2B
- Quantum computers
- Molecular computers
- E-learning
- Virtual Learning
- Ubiquitous mobile computing
- Virtual environments

Lesson 1

References

_____ (1995) Internet and World Wide Web simplified. IDG Books Worldwide; Foster City; California.

Capron, H. L. (1996) Computers: Tools for an information age. (4th ed.) New York: The Benjamin/Cummings Publishing Company.

Franks, Mike. (1995) The Internet publishing handbook: for World Wide Web, Gopher and WAIS. Addison-Wesley; Reading Massachusetts.

Hutchinson, S. E. & Sawyer, S. C. (2000). Computers, Communications & Information: A users introduction. (7th ed.) Boston: Irwin McGraw-Hill.

Electronic Resources

BBC Becoming WebWise: Online Course for Beginners. British Broadcasting Corporation. [Online] URL http://www.bbc.co.uk/webwise/learn/menu.shtml

Beginners.co.uk. *TCP/IP Networking - What is TCP/IP?* Visualsoft UK Ltd. [Online] URL http://tutorials.beginners.co.uk/read/category/90/id/282

Behar, Gil, Loewy, Guy and Solomonovich, Oz. *Networks for Beginners: Internet Protocols*. [Online] URL http://www.rad.com/networks/1997/nettut/protocols.html

Brain, Marshall. HowStuffWorks: *How Web servers and the Internet Work.* [Online] URL http://www.howstuffworks.com/web-server.htm

Cerf, Vint. *A Brief History of the Internet and Related Networks*. Internet Society (ISOC). [Online] URL http://www.isoc.org/internet/history/cerf.shtml

Client-server architecture: bringing order to the bramble bush. Steele Scharbach Associates L.L.C. [Online] URL http://www.ssa-lawtech.com/wp/wp3-5.htm

Client/Server Software Architectures-An Overview. Carnegie Mellon University: Software Engineering Institute. [Online] URL http://www.sei.cmu.edu/str/descriptions/clientserver_body.html

Cohen, Laura. *A Basic Guide to the Internet*. University at Albany Libraries: Internet Tutorials. [Online] URL http://library.albany.edu/internet/internet.html

Cottingham, Scott. *Internet 101*. [Online] URL http://www.internet101.org/

Davila, Rhonda. *History and Development of the Internet: a Timeline*. [Online] URL http://www.sat.lib.tx.us/Displays/itintro.htm

Dockter, M.A. *The D-N-What: A Layman's Guide to the Domain Naming System.* WebServer Compare. INT Media Group. [Online] URL http://webservercompare.internet.com/dns/

Gulati, Shvetima. *The Internet Protocol Part One : The Foundations*. Association for Computing Machinery, Inc. [Online] URL http://www.acm.org/crossroads/columns/connector/july2000.html

IANA Domain Name Services. [Online] URL http://www.iana.org/domain-names.htm

Kristula, Dave. *The History of the Internet*. [Online] URL http://www.davesite.com/webstation/net-history.shtml

Learn the NET: Anatomy of a URL. Michael Lerner Productions. [Online] URL http://www.learnthenet.com/english/web/110www.htm

Learn the Net: *The Animated Internet*. Michael Lerner Productions. [Online] URL http://www.learnthenet.com/english/animate/animate.htm

Leiner, Barry M., Cerf, Vinton G., Clark, David D.,
Kahn, Robert E., Kleinrock, Leonard, Lynch, Daniel C.,
Postel, Jon, Roberts, Larry G., and Wolff, Stephen. *All About The Internet: History of the Internet*. Internet Society (ISOC). [Online] URL http://www.isoc.org/internet/history/brief.shtml

Mitchell, Bradley. *Introduction to Client/Server Networking: A proven approach to distributed computing*. [Online] URL http://compnetworking.about.com/library/weekly/aa050201a.htm

Network Computing.*Client/Server Fundamentals*. CMP Media LLC. [Online] URL http://www.networkcomputing.com/netdesign/1005part1a.html

Network Solutions 15 Minute series. [Online] URL http://www.apinforma.com/biblio/online/internic/

Newton, Steven E. *Introduction to the Internet Protocols*. [Online] URL http://oac3.hsc.uth.tmc.edu/staff/snewton/tcp-tutorial/index.html

Stewart, William. *The Living Internet*. [Online] URL http://livinginternet.com/

SupportNet Online. *Internet protocol and addressing.* Eastern Upper Peninsula

ISD and Merit Network, Inc. [Online] URL http://supportnet.merit.edu/m-intint/t-netbas/text/intpro.html

SupportNet Online. *Introduction to Domain Name Service*. Eastern Upper Peninsula ISD and Merit Network, Inc. [Online] URL http://supportnet.merit.edu/m-intint/t-domnam/text/intro1.html.

SupportNet Online. *Networking Background*. Eastern Upper Peninsula ISD and Merit Network, Inc. [Online] URL http://supportnet.merit.edu/m-intint/t-netbas/text/netbac.html

The Domain Name System: A Non-Technical Explanation – Why Universal Resolvability Is Important? InterNIC FAQ. [Online] URL http://www.internic.net/faqs/authoritative-dns.html

The Anatomy of a URL (Uniform Resource Locator). Wofgram Memorial Library. Widener University. [Online] URL http://www2.widener.edu/Wolfgram-Memorial-Library/pyramid/wwwanato.htm

Webopedia. *Understanding IP Addressing*. INT Media Group. [Online] URL http://www.webopedia.com/DidYouKnow/2002/March/IPaddressing.html

What is client/server computing? Network Solutions 15 Minute series (Mirrored). [Online] URL http://www.apinforma.com/biblio/online/internic/cliensrv/sld01.html

Lesson 2

References

Miller, Michael. (1995) Easy Internet. Que; Indianapolis, IN.

Sawyer, Stacey C. (1997) Using Information technology: A practical introduction to computers & communications. (2nd ed.) Boston, Massachusetts: Irwin McGraw-Hill.

Steele, Heidi. (1996) How to use the Internet. Ziff-Davis; Emeryville, California.

Electronic Resources

Abilock, Debbie. *Choose the best search for your information need*. Nueva School Library Help Page. [Online] URL http://nuevaschool.org/~debbie/library/research/adviceengine.html

Banbury, John. *Searching techniques.* Flinders University of South Australia Library. [Online] URL http://www.lib.flinders.edu.au/services/infolit/web/stech.html

Barker, Joe. *Browser comparisons: Internet Explorer & Netscape.* University of California Berkeley Library: Teaching Library Internet Workshops. [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/Browsers.html

_____ *Invisible Web: What it is, Why it exists, How to find it, and Its inherent ambiguity*. University of California Berkeley Library: Teaching Library Internet Workshops. [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/InvisibleWeb.html

_____ *Meta-Search Engines*. University of California Berkeley Library: Teaching Library Internet Workshops. [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/MetaSearch.html

_____ *Recommended Search Strategy: Analyze your topic & Search with peripheral vision.* [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/Strategies.html

_____ *Subject directories: the best and more.* University of California Berkeley Library: Teaching Library Internet Workshops. [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/SubjDirectories.html

_____ *The best search engines*. University of California Berkeley Library: Teaching Library Internet Workshops. [Online] URL http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/SearchEngines.html

Chamberlain, Ellen. *Bare Bones 101*. University of South Carolina Beaufort Library. [Online] URL http://www.sc.edu/beaufort/library/lesson1.html

Cohen, Laura. *Conducting Research on the Internet.* University at Albany Libraries: Internet Tutorials. [Online] URL http://library.albany.edu/internet/research.html

Gresham, Keith. *Surfing with a Purpose: Process and strategy put to the test on the Internet.* Educause: Educom Review. [Online] URL http://www.educause.edu/ir/library/html/erm9851.html

Library of Congress. *Internet Search Tools*. [Online] URL [Online] URL http://www.loc.gov/global/search.html

Learn the Net: *Web Browsers*. Michael Lerner Productions. [Online] URL http://www.learnthenet.com/english/html/12browser.htm

Webteacher.org. *Web browser primer*. National Cable Television Association (NCTA), Tech Corps, and Cable in the Classroom. [Online] URL http://www.webteacher.org/winexp/browser/browser.html

Lesson 3

References

Capron, H. L. (1996) Computers: Tools for an information age. (4th ed.) New York: The Benjamin/Cummings Publishing Company.

Hutchinson, S. E. & Sawyer, S. C. (2000). Computers, Communications & Information: A users introduction. (7th ed.) Boston: Irwin McGraw-Hill.

Sawyer, Stacey C. (1997) Using Information technology: A practical introduction to computers & communications. (2nd ed.) Boston, Massachusetts: Irwin McGraw-Hill

Electronic Resources

APA Electronic Reference. American Psychological Association. [Online] URL http://www.apastyle.org/elecref.html

Auer, Nicole J. *Evaluating Web Information*. Virginia Tech University Libraries. [Online] URL http://www.lib.vt.edu/research/evaluate/evaluating.html

Cerf, Vinton. *What Will Replace The Internet?* Time.com Visions of the 21st Century. [Online] URL http://www.time.com/time/reports/v21/tech/mag_web.html

Citation Style Guides for Internet and Electronic Sources. Chicago Manual of Style. [Online] URL http://www.library.ualberta.ca/guides/citation/index.cfm#Chicago

Copyright and Fair Use in the Classroom, on the Internet, and the World Wide Web. University of Maryland University College [Online] URL http://www.umuc.edu/library/copy.html

Copyright Laws. Intel Corporation. [Online] URL http://www.intel.com/education/teachtech/classroom/using_internet/copyright.htm

Harnack, Andrew. Kleppinger, Eugene. *Online! A Reference Guide to Using Internet Resources: Citation Styles.* [Online] URL http://www.bedfordstmartins.com/online/citex.html

Jane, Alexander and Tate, Marsha. *Teaching Critical Evaluation Skills for World*

Wide Web Resources. Widener University Wolfgram Memorial Library. [Online] URL
http://www2.widener.edu/Wolfgram-Memorial-Library/webevaluation/webeval.htm
Lederer, Naomi. *How to Evaluate A Web Page.* Colorado State University Libraries. [Online] URL http://manta.library.colostate.edu/howto/evalweb2.html

MLA Style: How do I document sources from the World Wide Web in my works-cited list? Modern Language Association. [Online] URL
http://www.mla.org/www_mla_org/style/style_main.asp?level=2&mode=page&page=1&link=sty72800121438&section=sty51800124510

Ormondroyd, J., Engle, M., & Cosgrave, T. *How to Critically Analyze Information Sources.* Cornell University Olin Kroch Uris Libraries. Reference Services Division. [Online] URL
http://www.library.cornell.edu/okuref/research/skill26.htm

Protecting Safety and Privacy. Intel Corporation. [Online] URL
http://www.intel.com/education/teachtech/classroom/using_internet/privacy.htm

Rinaldi, Arlene H. The Net: User Guidelines and Netiquette. [Online] URL
http://www.fau.edu/netiquette/net/

The Digital Dilemma: Intellectual Property in the Information Age. Committee on Intellectual Property Rights in the Emerging Information Infrastructure, National Research Council [Online] URL http://books.nap.edu/html/digital_dilemma/