Computing Fundamentals

Book 4 of 4
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Chapter 4

The World of the Internet

Chapter Preview

Objectives

At the end of this chapter, students should be able to:

- tell what the Internet is;
- identify the different Internet services;
- recognize how the Internet works; and
- use the Internet appropriately.
Lesson 1
Introducing the Internet

Can you travel around the world even if you are in school? Yes, you can by using the Internet. With the Internet, the whole world is at your fingertips. You can go to other places without using planes, cars, and trains. On the Internet, you are the driver, conductor, and the passenger. You will determine and decide where to go, when to go, and what to see. But how can you do this? What does the Internet really mean? How does it work? How did it start? These questions and more will be answered on the following pages.

What is the Internet?

The Internet, or the Net, is a collection of millions of computer networks that link to different computers around the world.

A computer network is a group of connected computers that exchange information. If your computer is connected to a network, you can easily share files, programs, or documents with others. An Internet user in Manila can also get the information he needs in another computer that is located in Tokyo. A person in London can send e-mails to his relatives and be confident that they will reach Canada in a few minutes or even less. A child in Singapore can talk to his Mom who is working in New York at real time without paying long-distance charges.

Amazing, isn’t it? But how does the Internet work? What are the other uses of the Internet?
Uses of the Internet

At this moment, millions of people all over the world are using their computers for the same reason – the Internet. Different users have different reasons for using the Internet. Below are some uses of the Internet:

The Internet is used to communicate with family and friends in different places in the world.

It is used for conducting business.

It is used for doing research.

It is used for reading the news.

It is used for downloading software and files.

It can also be used for shopping online.

It is also used for playing computer games.

Still others use the Internet out of curiosity. The number of Internet users has been continuously increasing to tens of millions these past few years!
How does the Internet work?

The Internet is truly an amazing tool that allows communication and data sharing throughout the world. Have you ever wondered how the Internet works? Not many Internet users do, but for those with inquiring minds, read on.

What is a Server/Client?
In order to connect to an Internet Web site, you have to connect to something that is called a "server." These servers work all night and all day, unless there is a problem. Servers send information and data back and forth.

Internet users who request information from these servers are called "clients." The computer that somebody is using right now is a client that has requested information from the server.

Computers talk to one another.

All or the servers and clients communicate with one another through a language called protocol. When you are surfing the Internet from one Web site to another site, you will notice that every single Web site address starts with "http://". This stands for "hypertext transfer protocol" which is how the World Wide Web works. There are several other protocols for electronic mail, computer file transfers, and much, much more.
Each computer has an IP address.

On the internet, computer information is sent from computer to computer by using numerical addresses called IP addresses. (It’s like a computer having its own P.O. Box number.) The IP address tells each computer where the information came from or where it needs to go. An IP address is a series of four numbers connected by dots. For example, a server could read something like this: “123.345.666.1”.

Finally, The Internet browser enables you to see/read this information.

In order for a client to see and view the information/data that a server sends, an Internet browser is needed. The leading Internet browsers such as Internet Explorer, Netscape, Opera, and others translate and display the information sent by a server. It’s all done nicely, neatly, and easily at the convenience of the Internet user.

Figure 4.1
Once the computer is connected to the internet, one can use it for his or her own purpose.
How did it all start?

Have you ever wondered how the Internet came about? The start of the Internet resulted in some imaginative thinking by people in the early 1960s that saw possibilities in allowing computers to share information with other computers in scientific and military fields. For this reason, the US Defense Department made an experiment that led them to the creation of a collection of connected computer networks that worked as a coordinated whole.

Unfortunately, at that time the Cold War still existed, and networks were vulnerable to enemy attack. Whenever a server failed, the entire network failed. Consequently, someone realized that a “bombproof” network was needed, one that can still operate even if one part of the network shuts down. To solve this problem, the Defense Department created ARPANET (Advanced Research Projects Agency Network) in 1969. It was an experimental network based on packet-switching techniques. The resulting Internet has the ability to “heal step” When part of it fails, information finds a new route with help from the surviving parts.

The success of ARPANET led to its widespread growth as more government agencies, universities, and research institutions joined the network. It was the forerunner of today’s Internet.

In the following years, while some of the early networks eventually shut down, newer and larger networks came into existence, and as they were connected to one another, they created the largest network of computers in the world that is now known as the Internet. Today, over 1 billion people use the Internet, with Asia having the largest number of users followed by Europe and the U>S>A and Canada.

**Whiz Words**

- Internet
- computer network
- server
- client
- protocol
- HTTP
- Internet Browser
Lesson Summary

The Internet is a collection of computer networks that link millions of different computers around the world. The Internet is used by many people for different purposes. They use it for conducting business, researching, reading the news, shopping online or for playing games. You can use the Internet if your computer is connected to a server. Once the computer is connected to the Internet, you can use it according to your purpose.

Study Help

Write True if the statement is correct or False if it is wrong.

1. The Internet is a collection of millions of computer networks linked to different computers around the world.
2. A computer network is a group of connected computers that do not exchange information.
3. People use the Internet for different purposes.
4. You can even play online games on the Internet.
5. A computer should have a server before it can be connected to the Internet.
6. Internet was first used by the Russian Defense Department.
7. ARPANET led in the growing use of Internet in business, research, and universities.
8. Computers talk to one another using the language called CLIENT.
9. The computer also has an address called ISP.
10. Server is the one that provides connection for the Internet.
Lesson 2
Internet Services

Today the Internet has, directly or indirectly, affected the lives of many people. There are many reasons why people now use the Internet. The Internet provides many services that are extremely helpful to users.

“But who owns the Internet?” one may ask. Actually, no person or organization owns the Internet. It consists of many networks that are independently administered. No one person or organization directly pays for the Internet. The Internet access providers exist because they can charge customers who access the Net.

Internet Services

The Internet offers so much fun and provides exciting features and services, namely: Electronic mail, World Wide Web, Internet Relay Chat, and more.

Electronic Mail

Electronic mail or e-mail is one of the most popular Internet services. Electronic Mail is the worldwide system of sending and receiving mails in an electronic format. Its speed in sending or receiving e-mail even if both parties are far from each other is one of the reasons why it is one of the most popular among the Internet services.

Figure 4.4.2
A sample site where one can compose, read, and receive e-mail.
Internet Relay Chat

The Internet Relay Chat (IRC) or Chat allows a person or a group of people usually using “screen names” to send typed messages, and even allow spoken conversations to one another at real time across hundreds of miles. This service is especially popular among young people.

IRC has what is known as Chat Rooms. These are virtual “rooms” where people gather to discuss subjects of common interests. It is much like a party of people mingling and talking at the same time, except that they are typing short messages instead.

Instant Messaging

Instant Messaging allows you to store and maintain a list of contacts. You can send messages to these contacts as long as they are online. Though Instant Messaging is ordinarily used to interact with a single person in the contact list at a time, you can also use it in a conference by adding other contacts that are online in a conversation.

Other services available in Instant Messaging are sending files or photos, audio conversation, video conferencing, and application sharing.
World Wide Web

Another popular part of the Internet is the World Wide Web, or “the Web.” It is a system of linking documents that may be on a different computer or located in other countries. The Web is composed of a large collection of documents, called Web pages that are stored in computers around the world and made available, usually for free, to Internet users. The software used to surf the net is called a Browser.

The Web also supports access to photographs, videos, and even software.
How to stay safe online?

The Internet can be a useful tool because it provides unusual access to a wide variety of information. But just like any other tools, it can be abused. Some information in the Net may not be suitable for some viewers especially young people. There are immoral individuals who use the Internet to pursue their self-interests. For example, you might see information with violent content or encounter undesirable people online.

The box below enumerates some tips to stay safe online:

Some Tips to Stay Safe Online

Keep the computer in a room where the whole family can use it.

Discuss a set of reasonable rules and guidelines for computer use and post it near the computer as a reminder.

Never give out personal details (name, address, passwords or e-mail address) or photographs unless you know and trust the person to whom you give these.

Talk to someone if you are uncomfortable or worried about something you have seen or read in the Internet.

Learn as much as you can about the usefulness of the Internet and the services it provides.

Delete received e-mails, attachments or downloaded files from people or organizations you don't know or trust. These may contain virus or nasty messages.
**Whiz Words**

- e-mail
- Internet Relay Chat
- instant messaging
- world wide web

**Lesson Summary**

The Internet offers a lot of services useful to its users. Among the Internet services are e-mail, Chat, Web, and IM (Instant Messaging). Even though most of the information are available on the Net, people, especially the young, should be cautious and careful in using it.

**Study Help**

Identify the term/s being described in the following sentences.

1. It is a way of carrying on a conversation with another person at real time.

2. This is a system of sending and receiving mails in electronic format.

3. This is represented by www.

4. This service allows one to send messages to his/her added contacts as long as they are online.

5. This consists of large documents linked to one another.
Lesson 3
Using the Net

To be able to connect to the Internet and browse the Worldwide Web, you basically need a computer and the following: modem, telephone line, Internet account, and Web browser.

In choosing a modem, look for one that is most suited to your needs. Consider the cost, speed, and compatibility.

The primary way to get an Internet account is through an Internet Service Provider (ISP). An Internet service provider is a company that provides connectivity to the Internet. You can subscribe to the network and pay a monthly fee to use it. Another way to get an account is through prepaid Internet cards. You can buy the card and follow the instructions at the back of the card or through its manual.

There are varieties of communications or Internet software that can be used to connect to the Internet. These Internet navigational programs come either with the Operating System (such as Windows that includes Internet Explorer and Outlook Express) or from a service provider.

If everything has been set up, you can now connect to the access provider, which, in turn, will connect to the Internet. To do this, double-click the connection's shortcut icon and provide the correct user name and password. The combination of the user name and password is used to verify if you are authorized to use any particular resources on the Internet.
But how does the Internet connection really work? The illustration below shows how:

First, the dialer software calls an access number.

The modem converts the signals from the computer to signals that travel over wires to another modem on the network of the ISP (Internet Service Provider).

Then, the ISP connects to the Internet.
Browsing the Web with Internet Explorer

Among the Internet services, the Web is considered by many as the most exciting aspect of the Internet. Some users even use their Web browser for everything they do on the Internet. This is because the Web browser is capable of showing all kinds of information including sounds or video.

A Web browser is a program used to view and explore information on the Web. Some users even use their Web browser for everything they do on the Internet. That makes the process of “surfing” the Internet simple and fun. Tim Berners-Lee developed this computer programming language during the 1980s. The first graphical Web browser was NCSA’s Mosaic. It is based on Hypertext Mark-up Language (HTML).

Today, one of the most commonly used Web browsers is Microsoft Internet Explorer developed by Microsoft Corporation.

If Internet Explorer is installed in your computer and you have an Internet account, you are ready to connect to the Internet. To browse the Internet using the Microsoft Internet Explorer, follow these steps:

1. Click on the START button.
2. Move the mouse pointer over ALL PROGRAMS.
3. On the cascading menu, click on the INTERNET EXPLORER.
4. On the address bar, type the appropriate Internet address. Press the ENTER key.
Chapter Four - Working with Internet

The Internet Explorer Window

Clicking on the Internet Explorer from the Start menu, this displays the window as shown in Figure 4.5.

Address Bar

The address bar is a space to type and display the address for a web page. You do not need to type the entire website address to go to that page. Just start typing, and the AutoComplete feature (if it is turned on) of Internet Explorer will suggest a match based on Web sites visited previously.
The first web page that you see when connecting to a particular Web site is called the **Home Page**. The home page provides links to other documents, images, sound files, and more. Following this links can lead to sites around the world on thousands of topics. Once the mouse pointer is moved over a text or graphics, this changes to a pointing hand; it identifies it as an active link.

**Menu Bar**

Just like in other programs that you use; the menu bar provides items that contain commands.

**Toolbar**

You can use the toolbar below the menu bar for a quick access to basic functions. It contains commands that can be used repeatedly when browsing the web.

- **Back**  This returns to the previously opened page.
- **Forward**  This advances to the next page.
- **Stop**  This cancels downloading a page.
- **Refresh**  This refreshes the current page.
- **Home**  This returns to the home page.
- **Search**  This helps search for certain websites.
- **Favorites**  This creates and organizes a collection of favorite web pages.
Chapter Four - Working with Internet

This allows you to send and read e-mail messages and join newsgroups.

This prints the current page or active frame.

This toggles between reducing and enlarging the font size.

Search Engines and Directories

Search engines create catalogs of web pages. They constantly visit Web sites on the Internet. Because they run automatically and index many pages, search engines may often find information not listed in directories. Humans create directories. A site must be submitted to the administrator who then assigns it to a category or categories. Because of the human involvement, directories can often provide better results than search engines.

Figure 4.6.
One of the commonly used Web sites used for searching the Internet for Web sites that contain information related to your topic.
**Whiz Words**

- search engines
- home page
- Internet Explorer
- HTML
- address bar

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**Lesson Summary**

You can connect to the Internet by having an ISP or Internet Service Provider or a prepaid Internet card. Once the computer is connected, you can navigate to a different Web site using an Internet browser. Windows has Internet Explorer as its Internet browser. There are several sites available on the net. And you can easily find the information you need by using a search engine, like Google, for example.

---

**Study Help**

Fill in the blank with the answer to complete the sentence.

1. ________________________ is a company that provides connection to the Internet.

2. ________________________ is an Internet browser available in Windows used for browsing the net.

3. ________________________ a part of Internet browser window where one can type in the address to view a Web site.

4. ________________________ creates catalogs for a Web page.

5. ________________________ is the first Web page one can see when an internet browser is opened.
I. Write the meaning of the following acronyms:

1. HTML ____________________________________________________________.
2. ISP ____________________________________________________________.
3. IRC ____________________________________________________________.
4. www ____________________________________________________________.
5. http ____________________________________________________________.

II. Name the buttons below.

1. 

2. 

3. 

4. 

5. 
III. Explain the following terms in at least two sentences:

1. Internet
   ______________________________________________________
   ______________________________________________________

2. Network
   ______________________________________________________
   ______________________________________________________

3. Email
   ______________________________________________________
   ______________________________________________________

4. Web Browser
   ______________________________________________________
   ______________________________________________________

5. Home Page
   ______________________________________________________
Computing Fundamentals

Book 4 of 4

Teacher's Manual
CHAPTER FOUR - THE WORLD OF INTERNET
Lesson 1 - Introducing Internet

Duration: 120 minutes

I. TOPIC OUTLINE

1.1 What Is the Internet?
1.2 Uses of the Internet
1.3 How Does the Internet Work?
1.4 How Did it all Start?

II. MAIN GOAL

This lesson aims to introduce the pupils to the Internet and learn how it started.

III. OBJECTIVES

In this lesson the pupils will be able to:

- tell what Internet is
- identify the uses of the Internet
- determine how the Internet works
- discuss how the Internet started

IV. PREPARATION

1. Prepare cut letters of the word Internet.
2. Assign reading of the lesson. Ask the pupils to note important terms (Whizwords).
3. Give the pointers for discussion.
4. Prepare a short quiz to be given after the lecture.
V. TEACHING STRATEGIES

1. Show in big bold letters the word Internet and post it on the board.

2. Ask the students to give their idea what Internet is and its uses. (Most of the students nowadays, are very familiar and exposed to the use of the Internet, so the introduction of the topic is not that difficult).

3. Present a picture of a group of computers linked together and explain how the Internet works.

4. Explain the different purposes of the people who use the Internet. Show them examples.

5. Discuss briefly how the Internet started.

VI. EVALUATION

1. Ask the pupils to define the Whiz words they encountered in the lesson. (This can be administered as a seat work, quiz or recitation.)

2. Assign the Study Help at the end of the lesson. Refer to page 155.

3. Administer a short quiz or recitation.

VII. ANSWERS TO STUDY HELP (page 155)

1. True 6. False
2. False 7. True
3. True 8. False
4. True 9. True
5. True 10. True
CHAPTER FOUR - THE WORLD OF INTERNET
Lesson 2 - Internet Services

Duration: 240 minutes

I. OUTLINE

1.1. Internet Services

  1.1.1 Electronic Mail

  1.1.2 Internet Relay Chat

  1.1.3 Instant Messaging

  1.1.4 World Wide Web

1.2 How to Stay Safe Online

II. MAIN GOAL

This lesson aims to teach the pupils the different services offered by the Internet and how to they can safely use it.

III. OBJECTIVES

In this lesson the pupils will be able to:

• know the different Internet services

• be aware of the safety guidelines in using the Internet

• use the different Internet services appropriately and properly

IV. PREPARATION

1. Assign reading of the lesson. Ask the pupils to note new terms in the lesson (Whizwords).
2. Prepare the computer laboratory for the hands-on activity.

3. Prepare a short quiz to be given after the lecture.

V. TEACHING STRATEGIES

1. Conduct a review of the past lesson.

2. Introduce the different Internet Services.

3. Explain the uses of these services.

4. Present them example. For example in Email, you can ask them to create an email-add in any of the websites or in your website. In Instant Messaging, you can ask them to use the Windows Messenger to chat with their classmates.

5. Stress to the student the tips to stay safe online. Explain the guidelines in using the net safely and properly.

VI. EVALUATION

1. Conduct a recitation to establish mastery of the subject matter. Refer to Lesson Summary on page 160.

2. Ask the pupils to define the Whizwords they encountered in the lesson (which can be administered as a seat work or recitation).

3. Have the pupils answer the Study Help on page 160 (which can be assigned prior or after the discussion of the lesson).

4. Give a short quiz.
VIII. ANSWERS TO STUDY HELP (page 160)

1. Internet Relay Chat
2. Electronic Mail
3. World Wide Web
4. Instant Messaging
5. Internet
CHAPTER FOUR - THE WORLD OF INTERNET
Lesson 3 - Using the Net

Duration: 120 minutes

I. TOPIC OUTLINE

1.1 Browsing the Web with Internet Explorer

1.2 The Internet Explorer Window

1.3 Search Engines and Directories

II. MAIN GOAL

This lesson aims to teach the pupils how to use and browse on the Internet.

III. OBJECTIVES

In this lesson the pupils will be able to:

• be familiar with the Internet Explorer window

• identify the use of each part of the window

• use the search engine to find particular topic or site

• find useful website

IV. PREPARATION

1. Assign the reading of the lesson. Ask the pupils to prepare a list of important terms.

2. Give pointers for discussion.

3. Prepare the laboratory for a lecture demonstration activity and for actual hands-on exercises.

4. Browse for useful sites that the students may visit during their surfing time.
V. TEACHING STRATEGIES

1. Discuss how to connect to the Internet.

2. Present the Internet Explorer window.

3. Identify and discuss its parts.

4. Conduct a hands-on activity that will allow the students to use the different parts of the Internet Explorer window.

5. Discuss the importance of the Search Engines like Google in researches and studies. (Be sure your computer units have software installed to filter the site to be visited by the students.)

6. Let the students go to a website that will make them learn and enjoy (you can ask give them specific website address to visit)

IX. EVALUATION

1. Ask the pupils to define the Whizwords they encountered in the lesson (which can be administered as a seat work or recitation).

2. Ask the pupils to answer Study Help on page 167.

3. Give summative test or conduct recitation.

X. ANSWERS TO STUDY HELP (page 167)

1. Internet Service Provider (ISP)
2. Internet Explorer
3. Address Bar
4. Search Engines
5. Home Page
CHAPTER FOUR
Chapter Review

I.
1. HTML - Hypertext Mark-Up Language
2. ISP - Internet Service Provider
3. IRC - Internet Relay Chat
4. www - World Wide Web
5. http - hypertext transfer protocol

II.
1. Stop
2. Back
3. Mail
4. Home
5. Refresh

III.
1. Internet - also called Net. It is a collection of computer networks that link together to the different computers
2. Network - is a group of connected computers that exchange information. One can share files and programs easily if his/her computer is connected to a network.
3. Email - one of the most popular Internet services. It is the worldwide system of sending and receiving mails in electronic format.
4. Web browser - is a program used to view and explore information on the web. It is the software equipment that makes the process of “surfing” the Internet easy and simple.
5. Home Page - The first web page that one sees when connecting to a particular website. It provides links to other documents, images, sound files and more.