Word Watch

- computer application
- ICT
- internet
- TCP/IP
- online

- CAM
- DSL
- ISP
- Links
- HTML

- WWW
- Navigation System
- desktop computer
- Web
- browser

ICT and Society

Learning Objectives

After completing this lesson, you should be able to:

- discuss how society uses computers in education, finance, government, health care, science, publishing, travel, and manufacturing;

- explain what is Internet, World Wide Web and its related concepts; and

- discuss the browser's role on the WWW.

Computer Applications in Society

The modern computer is a product of many technologies and has changed society today as much as the industrial revolution changed society in the eighteenth and nineteenth centuries. During the last several decades, the computer has become undoubtedly the most important invention of mankind. Today, virtually all of the world's knowledge is only a few taps away, which is truly mind-blowing.

People interact directly with computers in fields such as education, finance, government, healthcare, science, publishing, travel, and manufacturing. In addition, they can reap the benefits from breakthroughs and advances in these fields. The following pages describe how computers have made a difference in people's interactions with these disciplines.

Education

The Impact of Computer Technology in Education is enormous especially in the 21st Century. Computer in itself is life made easy exacting a kind of intelligence that transcends human ability naturally. It has therefore become imperative that the various breakthroughs in this regard be critically examined, its impact on the teaching and learning process and how to fully harness its benefits.

Many schools and companies equip laboratories and classrooms with computers. Some schools require students to have a mobile computer or mobile device to access the school's network or Internet wirelessly.

ICT has been widely used in classroom teaching. Students use software to assist with learning or to complete assignments. Computer education has really helped the 21st century learners to aid in their studies with their learning styles.

Sometimes, the delivery of education occurs at one place while the learning occurs at other locations. For example, online studies are done by some universities and colleges to cater the needs of those who are having impairment and the young professionals who cannot be in school physically without sacrificing the mode and quality of learning.

In some schools, students have mobile computers on their desks during classroom lectures.

Finance

Computer based trading has transformed how our financial markets operate. Many people and companies use computers to help manage their finances. Some use finance software to balance checkbooks, pay bills, track personal income and expenses, manage investments, and evaluate financial plans. This software usually includes a variety of online services.

For example, computer users can make payments easily, view account balances, pay bills, and copy monthly transactions from the bank's computer right into their computers through online banking.

Investors often use online investing to buy and sell stocks and bonds — without using a broker. Investors trading over the Internet or online, who are used to instant access to their accounts and near instantaneous executions of their trades, especially need to understand how they can protect themselves in fast-moving markets.

Online Banking

Stock Market

Government

A government provides society with direction by making and administering policies. To provide citizens with up-to-date information, most government offices have Web sites. People access government Web sites to file taxes, apply for permits and licenses, pay parking tickets, buy stamps, report crimes, apply for financial aid, and renew vehicle registrations and driver's licenses.

It is already the routine of the government employees to use computers. Our Weather Bureau (PAGASA) uses special forecasting applications to monitor tropical cyclones and or other weather disturbances especially that typhoons and calamities hit Philippines frequently. Our military and other agency officials use centralized network of information about domestic security threats to help protect our nation.

Weather Tracking Application Program

Law enforcement officers have online access to the NBI's National Crime Information Center (NCIC) through in-vehicle computers, fingerprint readers, and mobile devices. The NCIC contains more than 52 million missing persons and criminal records, including names, fingerprints, parole/probation records, and other information worldwide.

Police man accessing criminal records on his police car

Travel

Many vehicles manufactured today include some type of onboard navigation system. Some mobile users prefer to carry specialized handheld navigation devices.

During vacations and long weekends, some would tend to go for rest and recreation by making itinerary to visit tourist spots. They navigate the online application to lessen the hassle in the reservation to travel and tours agencies.

This handheld navigation device gives users turn-by-turn voice-prompted directions to a destination.

Science

All branches of science, from biology to astronomy to meteorology, use computers to assist them with collecting, analyzing, and modeling data. Scientists also use the Internet to communicate with colleagues around the world.

Medical and surgical breakthroughs are being manifested especially in operations done by using a computer. Tiny computers now imitate functions of the central nervous system, retina of the eye, and cochlea of the ear. A cochlear implant allows a deaf person to listen.

Electrodes implanted in the brain stop tremors associated with Parkinson's disease. Cameras small enough to swallow - sometimes called a camera pill - take pictures inside your body to detect polyps, cancer, and other abnormalities.

Camera Pill

Retina of the eye

Cochlea of the ear

ICT Fund Part 1

Health Care

Health care provides transformational medical technologies, medical diagnostics, patient monitoring systems, and disease's research and drug discoveries. Nearly every area of health care uses computers. Whether you are visiting a family doctor for a regular checkup, having lab work or an outpatient test, or being rushed in for emergency surgery, the medical staff around you will be using computers for various purposes:

- Doctors use the Web and medical software to assist with researching and diagnosing health conditions.
- Doctors use e-mail to correspond with patients.
- Pharmacists use computers to file insurance claims.
- Robots deliver medication to nurse stations in hospitals.
- Hospitals and doctors use computers and mobile devices to maintain and access patient records.
- Computers and computerized devices assist doctors, nurses, and technicians with medical tests.
- Computers monitor patients' vital signs in hospital rooms and at home.
- Surgeons implant computerized devices, such as pacemakers, that allow patients to live longer.
- Surgeons use computer-controlled devices to provide them with greater precision during operations, such as for laser eye surgery and robot-assisted heart surgery.

Doctors, nurses, technicians, and other medical staff use computers and computerized devices to assist with medical tests.

Long-distance health care is done if the patient is distance away from a clinical center. Two forms of long-distance health care are telemedicine and telesurgery. The potential of telemedicine is more of a reality today because of the government and industry interest in developing a global telecommunications infrastructure. Through telemedicine, health-care professionals in separate locations conduct live conferences on the computer. For example, a doctor at one location can have a conference with a doctor at another location to discuss a bone X-ray. Live images of each doctor, along with the X-ray, are displayed on each doctor's computer.

With telesurgery, a surgeon performs an operation even not in the same location as to the patient. Telesurgery enables the surgeon to command the robots perform an operation via computers connected to a high-speed network.
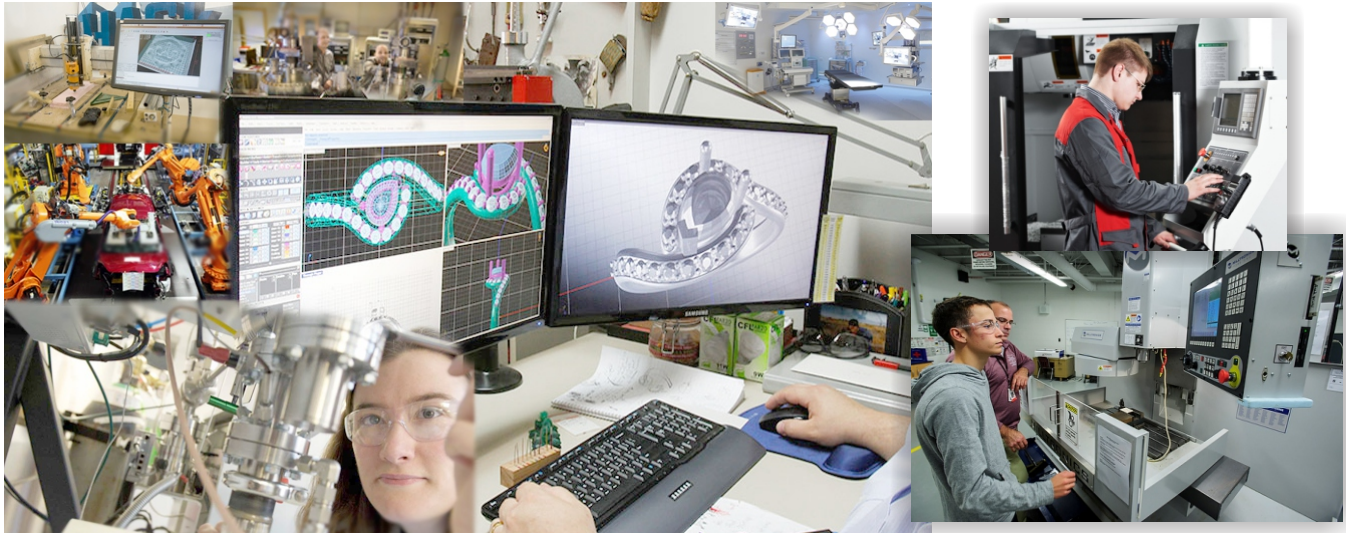
Publishing

Publishing is the activity of which preparing and providing available materials to the public. These works include books, magazines, newspapers, music, film, and video. Special software assartists in composing and enhancing songs; film makers in creating and editing film; and journalists and mobile users in capturing and modifying video clips.

For fast accession of published media, publishers prefer online. Copies are being allowed by some sites to be downloaded to desktop computer, mobile computer, smart phone, or other mobile device.

Manufacturing

Computer-aided manufacturing (CAM) is the use of computer software to control machine tools and related machinery in the manufacturing of work pieces such as fabrication and assembly. Often, robots carry out processes in a CAM environment. CAM is used by a variety of industries, including oil drilling, power generation, food production, and automobile manufacturing. Automobile plants, for example, have an entire line of industrial robots that assemble a car.

Computers in use from different areas of Manufacturing

Internet & World Wide Web at A Glance

The Internet is a vast, worldwide network that enables you to read the latest news, to do research, to shop, to communicate, to listen to music, to play games, and to access a wide variety of global information and instant communications.

One of the major reasons business, home, and other users purchase computers is for Internet access. The Internet, also called the Net, is a collection of networks that links millions of businesses, government agencies, educational institutions, and individuals.

Types of Connections

Users connect to the Internet through a variety of methods. A relatively inexpensive but slow way to connect is with dialup service, which involves using a modem and a phone line. Faster ways to connect include DSL (digital subscriber line), cable modem, satellite, and ISDN (integrated services digital network). Networks include special wireless transmitters that allow computers to access the Internet wirelessly. Companies that help you connect to the Internet are known as Internet service providers, or ISPs.

Connections Speed

Connection speeds play an important part in a user's Internet experience because slower connections result in slower file transfers and Web page viewing. Dialup connections offer the slowest access to the Internet at up to 56 kilobits per second(Kbps). It is followed by ISDN connections at 64 to 128 Kbps. DSL usually offers connection speeds of up to 3 megabits per second(Mbps). Cable modems on the other hand can achieve speeds of up to 6 Mbps. A Web page that takes about 20 seconds to download via dialup can take less than a second using a cable modem.

The World Wide Web

The World Wide Web is a giant collection of documents, or pages, stored on computers around the globe. Commonly called the Web, this collection of pages represents a wealth of text, images, audio, and video available to anyone with a computer and an Internet connection. Web pages are stored on servers, which are Internet-connected computers running software that allow them to serve up information to other computers. When you place a text file, image, or other document in a special Web directory on a server, that information is available for other Web users to view.

URLs and Links

Every page on the Web has a unique address called a URL, which is short for Uniform Resource Locator. A URL looks like this: http: //www.example.com/index.html. If you know a page's URL, you can type it into a Web browser to view that page over the Internet. You can also view pages by way of hyperlinks, or simply links, which are clickable words or images on Web pages. Every link on a Web page is associated with a URL that leads to another page on the Internet. Users can jump from one Web page to another by clicking links.

Communication Standard

The Internet infrastructure relies on a variety of protocols that dictate how computers and networks talk to each other. For example, Transmission Control Protocol/Internet Protocol, or TCP/IP, is a set of rules that control how Internet messages flow between computers. HyperText Transfer Protocol, or HTTP, is a set of rules that determine how browsers should request Web pages and how server computers should deliver them. Having agreed upon protocols allows seamless communication among the many different types of computers that connect to the Internet.

Web Browser

A Web browser is a software that allows you to view and interact with Web pages. When you type a URL or click a link in a Web browser, the browser retrieves the appropriate page from a server on the Internet and displays that page. Microsoft Internet Explorer, Mozilla Firefox, and Apple Safari are the three most popular browsers in use today. Each program has evolved through a number of versions, with newer versions supporting more recent Web features. As you build your pages using HTML code, remember that different browsers may display your pages.

Exploring Web Browsers

Web browser, browser for short is a software application used to locate, retrieve and display content on the World Wide Web, including Web pages, images, video and other files.

Browser Discrepancies

There are many Web browsers in use today, and numerous versions of each. While most of them interpret HTML essentially in the same way, slight differences in interpretation mean that not all of them display Web pages exactly in the same way. Also, some more recent browser versions recognize newer HTML features that older browsers do not.

Finding a Browser

Most computer operating systems come with a Web browser already installed. Microsoft Windows 7 & 8 computers include the Internet Explorer browser, while Apple Mac computers include the Safari browser. Chrome is another Web browser that has become very popular. Opera is the least popular browser since this book was published.

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Laboratory

ICT
Fundamentals
VISUALLESSONGUIDE

Manual

LABORATORY MANUAL

Lesson 2 ICT and Society

In the 21st Century, almost all aspect in the lives of people deal with computers, in this lesson you will be oriented on how computers have helped these communities that we are in.

Objectives

After completing this Laboratory, you should be able to:

- discuss how computers help each community; and
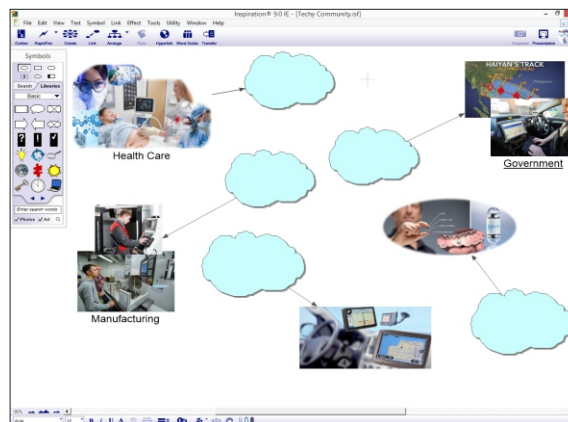- identify the different communities that computers are used.

Lab. 2.1 **Techy Community**

Estimated Completion time: 15 - 20 Minutes

Score

Directions:

1. Launch Inspiration.

2. Open and answer the activity **Techy Community**.

3. Follow and read the directions.

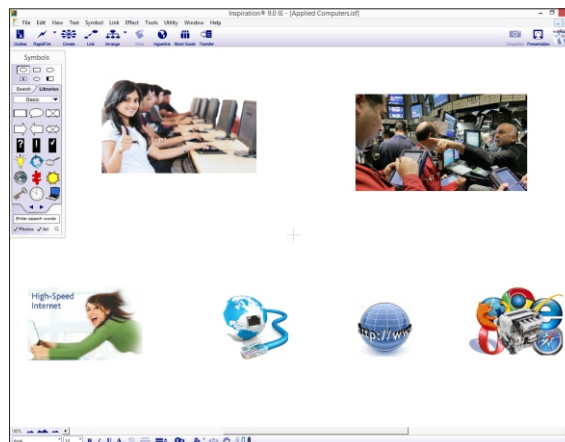4. Save the activity as **Techy Community done** in your own folder.

Preview:

Lab. 2.2 **Applied Computers**

Estimated Completion time: 15 - 20 Minutes

Score

Directions:

1. Launch Inspiration.

2. Open and answer the activity **Applied Computers**.

3. Follow and read the directions.

4. Save the activity as **Applied Computers done** in your own folder.

Preview:

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