Министерство образования Республики Беларусь

Учреждение образования
«Гомельский государственный университет
имени Франциска Скорины»

АНГЛИЙСКИЙ ЯЗЫК

Практическое пособие

для студентов специальности 1-40 01 01 «Программное обеспечение информационных технологий»

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Гомель
ГГУ им. Ф. Скорины
2017

УДК 811.111(076)
ББК 81.432.1я73
А64

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Рекомендовано к изданию научно-методическим советом учреждения образования «Гомельский государственный университет имени Франциска Скорины»

Английский язык : практическое пособие / сост. : Е. А. Чернякова, Т. В. Лозовская, Г. Н. Петухова ; М-во образования Республики Беларусь, Гомельский гос. ун-т им. Ф. Скорины. – Гомель : ГГУ им. Ф. Скорины, 2017. – 47 с.

А64

ISBN 978-985-577-313-0

Целью практического пособия является формирование навыков чтения, перевода и пересказа текстов. Издание включает аутентичные тексты на тему информационных технологий, вопросо-ответные упражнения.

Адресовано студентам специальности 1-40 01 01 «Программное обеспечение информационных технологий».

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ОГЛАВЛЕНИЕ

ПРЕДИСЛОВИЕ

Целью преподавания иностранного языка у студентов специальности 1-40 01 01 «Программное обеспечение информационных технологий» является формирование навыков чтения и перевода текстов.

Практическое пособие представляет собой сборник аутентичных текстов на тему информационных технологий, предназначенных для будущих специалистов в этой области.

Издание включает в себя аутентичные тексты, которые широко используются на занятиях с будущими IT специалистами. Подобранные тексты расширяют активный запас профессиональной лексики, знакомят с грамматическими структурами, которые часто встречаются в текстах такой направленности. При подготовке пособия авторы использовали источники 2012–2016 годов, что говорит об актуальности и новизне материала.

Материал практического пособия представлен в трёх разделах: Information Technology, the Internet, and You, The Internet, the Web and Electronic Commerce, Basic Software. В каждом разделе представлены тексты для чтения, перевода и пересказа. Каждый текст сопровождается вопросо-ответными упражнениями, направленными на развитие навыков устной речи. Построенная таким образом структура издания позволяет подготовить студентов к устным монологическим высказываниям.

UNIT 1. INFORMATION TECHNOLOGY, THE INTERNET AND YOU

Introduction

Just a few years ago, the computer was a device you might have used seated at a desk for work or school. Today computers go with us, connecting us to a world of information, our friends, and even our work. The speed of technological developments makes it easy to imagine a world where we are always connected to the Internet. Some experts predict the Web will become seamlessly integrated into our lives. Connectivity will mean connections to our documents and data, our friends and family, and facts and figures gathered the world over. Imagine a world where the mobile device in your hand is like an expert personal assistant with access to all of these resources. Your calendar might remind you of a friend's birthday, provide suggestions for a gift, and provide a map to the store where you might want to shop on your way home from work.

Computer competency refers to acquiring computer-related skills – indispensable tools for today. They include how to effectively use popular application packages and the Internet.

In this chapter, we present an overview of an information system: people, procedures, software, hardware, and data. It is essential to understand these basic parts and how connectivity through the Internet and the Web expands the role of information technology in our lives.

Fifteen years ago, most people had little to do with computers, at least directly. Of course, they filled out computerized forms, took computerized tests, and paid computerized bills. But the real work was handled by specialists. Then microcomputers came along and changed everything. Today it is easy for nearly everybody to use a computer.

– Microcomputers are common tools in all areas of life. Writers write, artists draw, engineers and scientists calculate – all on microcomputers. Students and businesspeople do all this, and more.

– New forms of learning have developed. People who are homebound, who work odd hours, or who travel frequently may take Web courses. A college course need not fit within a quarter or a semester.

– New ways to communicate, to find people with similar interests, and to buy goods are available. People use electronic mail,

electronic commerce, and the Internet to meet and to share ideas and products.

To be competent with computer technology, you need to know the five parts of an information system: people, procedures, software, hardware, and data. You also need to understand connectivity, the wireless revolution, the Internet, and the Web and to recognize the role of information technology in your personal and professional life.

Text 1. Information Systems

When you think of a microcomputer, perhaps you think of just the equipment itself. That is, you think of the monitor or the keyboard. Yet, there is more to it than that. The way to think about a microcomputer is as part of an information system. An *information system* has five parts: people, procedures, software, hardware, and data.

People: It is easy to overlook people as one of the five parts of an information system. Yet this is what microcomputers are all about – making people, end users like you, more productive.

Procedures: The rules or guidelines for people to follow when using software, hardware, and data are procedures. These procedures are typically documented in manuals written by computer specialists. Software and hardware manufacturers provide manuals with their products. These manuals are provided in either printed or electronic form.

Software: A *program* consists of the step-by-step instructions that tell the computer how to do its work. *Software* is another name for a program or programs. The purpose of software is to convert *data* (unprocessed facts) into *information* (processed facts). For example, a payroll program would instruct the computer to take the number of hours you worked in a week (data) and multiply it by your pay rate (data) to determine how much you are paid for the week (information).

Hardware: The equipment that processes the data to create information is called *hardware*. It includes the keyboard, mouse, monitor, system unit, and other devices. Hardware is controlled by software.

Data: The raw, unprocessed facts, including text, numbers, images, and sounds, are called data. Processed data yields information. Using the previous example of a payroll program, the

data (number of hours worked and pay rate) is processed (multiplied) to yield information (weekly pay).

Almost all of today's computer systems add an additional part to the information system. This part, called **connectivity**, typically uses the Internet and allows users to greatly expand the capability and usefulness of their information systems.

In large computer systems, there are specialists who write procedures, develop software, and capture data. In microcomputer systems, however, end users often perform these operations. To be a competent end user, you must understand the essentials of information technology (IT), including software, hardware, and data.

Concept check

1. What are the five parts of an information system?
2. What is the difference between data and information?
3. What is connectivity?

Text 2. People and Software

People are surely the most important part of any information system. Our lives are touched every day by computers and information systems. Many times the contact is direct and obvious, such as when we create documents using a word processing program or when we connect to the Internet. Other times, the contact is not as obvious.

Software, as we mentioned, is another name for programs. Programs are the instructions that tell the computer how to process data into the form you want. In most cases, the words software and programs are interchangeable. There are two major kinds of software: system software and application software. You can think of application software as the kind you use. Think of system software as the kind the computer uses.

The user interacts primarily with application software. *System software* enables the application software to interact with the computer hardware. System software is "background" software that helps the computer manage its own internal resources. System software is not a single program. Rather it is a collection of programs, including the following:

– *Operating systems* are programs that coordinate computer resources, provide an interface between users and the computer, and run applications. Windows 7 and the Mac OS X are two of the best-known operating systems for today's microcomputer users.

– *Utilities* perform specific tasks related to managing computer resources. For example, the Windows utility called Disk Defragmenter locates and eliminates unnecessary file fragments and rearranges files and unused disk space to optimize computer operations.

– *Device drivers* are specialized programs designed to allow particular input or output devices to communicate with the rest of the computer system.

– *Application Software* might be described as end user software. These programs can be categorized as either basic or specialized applications.

Basic applications are widely used in nearly all career areas. They are the kinds of programs you have to know to be considered computer competent. One of these basic applications is a browser to navigate, explore, and find information on the Internet. The two most widely used browsers are Microsoft's Internet Explorer and Netscape's Navigator.

Specialized applications include thousands of other programs that are more narrowly focused on specific disciplines and occupations. Some of the best known are graphics, audio, video, multimedia, Web authoring, artificial intelligence programs, and cell phone apps.

Concept check

1. Describe the two major kinds of software.
2. Describe three types of system software programs.
3. Define and compare basic and specialized applications.

Text 3. Hardware

Computers are electronic devices that can follow instructions to accept input, process that input, and produce information. This book focuses principally on microcomputers. However, it is almost certain that you will come in contact, at least indirectly, with other types of computers.

There are four types of computers: supercomputers, mainframe computers, minicomputers, and microcomputers.

Supercomputers are the most powerful type of computer. These machines are special high-capacity computers used by very large organizations. IBM's Blue Gene is one of the fastest computers in the world.

Mainframe computers occupy specially wired, air-conditioned rooms. Although not nearly as powerful as supercomputers, mainframe computers are capable of great processing speeds and data storage. For example, insurance companies use mainframes to process information about millions of policyholders.

Minicomputers, also known as *midrange computers*, are refrigerator sized machines. Medium-sized companies or departments of large companies typically use them for specific purposes. For example, production departments use minicomputers to monitor certain manufacturing processes and assembly-line operations.

Microcomputers are the least powerful, yet the most widely used and fastest-growing type of computer. There are six types of microcomputers: *desktop, media center, notebook, tablet PC, netbook, and handheld computers*. *Desktop computers* are small enough to fit on top of or alongside a desk yet are too big to carry around. *Media centers* blur the line between desktop computers and dedicated entertainment devices. *Notebook computers*, also known as *laptop computers*, are portable, lightweight, and fit into most briefcases. A *tablet PC* is a type of notebook computer that accepts your handwriting. This input is digitized and converted to standard text that can be further processed by programs such as a word processor. *Netbooks* are smaller, lighter, and less expensive than notebook computers. *Handheld computers* are the smallest and are designed to fit into the palm of one hand. These systems contain an entire computer system, including the electronic components, secondary storage, and input and output devices. *Personal digital assistants (PDAs)* and *smartphones* are the most widely used handheld computers. Smartphones are cell phones with wireless connections to the Internet. Their growth has been explosive in the past few years.

Microcomputer Hardware

Hardware for a microcomputer system consists of a variety of different devices. This physical equipment falls into four basic

categories: system unit, input/output, secondary storage, and communication. Because we discuss hardware in detail later in this book, here we will present just a quick overview of the four basic categories.

The *system unit* is a container that houses most of the electronic components that make up a computer system. Two important components of the system unit are the *microprocessor* and *memory*. The *microprocessor* controls and manipulates data to produce information. *Memory* is a holding area for data, instructions, and information. One type, *random-access memory (RAM)*, holds the program and data that is currently being processed. This type of memory is sometimes referred to as *temporary storage* because its contents will typically be lost if the electrical power to the computer is disrupted.

Input devices translate data and programs that humans can understand into a form that the computer can process. The most common input devices are the *keyboard* and the *mouse*. *Output devices* translate the processed information from the computer into a form that humans can understand. The most common output devices are monitors and printers.

Unlike memory, *secondary storage* holds data and programs even after electrical power to the computer system has been turned off. The most important kinds of secondary media are *hard disks*, *solid-state storage*, and *optical disks*. *Hard disks* are typically used to store programs and very large data files. Using rigid metallic platters and read/write heads that move across the platters, data and information are stored using magnetic charges of the disk's surface. In contrast, *solid-state storage* does not have any moving parts, is more reliable, and less power. It saves data and information electronically similar to RAM except that it is not volatile. Three types are *solid-state drives (SSDs)* that are used much the same way as an internal hard disk, *flash memory cards* that are widely used in portable devices, and *USB drives* that are a widely used compact storage medium for transporting data and information between computers and a variety of specialty devices. Optical discs use laser technology and have the greatest capacity. Three types of optical discs are *compact discs (CDs)*, *digital versatile (or video) discs (DVDs), and high-definition (hi def) discs*.

At one time, it was uncommon for a microcomputer system to communicate with other computer systems. Now, using

communication devices, a microcomputer can communicate with other computer systems located as near as the next office or as far away as halfway around the world using the Internet. The most widely used communication device is a *modem*, which modifies telephone communications into a form that can be processed by a computer. Modems also modify computer output into a form that can be transmitted across standard telephone lines.

Concept check

1. What are the four types of computers?
2. Describe the six types of microcomputers.
3. Describe the four basic categories of microcomputer hardware.

Text 4. Data, Connectivity and the Internet

Data is raw, unprocessed facts, including text, numbers, images, and sounds. As we have mentioned earlier, processed data becomes information. When stored electronically in files, data can be used directly as input for the system unit.

Four common types of files are:

Document files, created by word processors to save documents such as memos, term papers, and letters.

Worksheet files, created by electronic spreadsheets to analyze things like budgets and to predict sales.

Database files, typically created by database management programs to contain highly structured and organized data. For example, an employee database file might contain all the workers' names, social security numbers, job titles, and other related pieces of information.

Presentation files, created by presentation graphics programs to save presentation materials. For example, a file might contain audience handouts, speaker notes, and electronic slides.

Connectivity is the capability of your microcomputer to share information with other computers. The two most dramatic changes in connectivity in the past five years have been the widespread use of mobile or wireless communication devices and cloud computing. Many experts predict that these wireless applications are just the beginning of

the *wireless revolution*, a revolution that will dramatically affect the way we communicate and use computer technology.

Central to the concept of connectivity is the *network*. A network is a communications system connecting two or more computers. The largest network in the world is *the Internet*. It is like a giant highway that connects you to millions of other people and organizations located throughout the world. The *Web* provides a multimedia interface to the numerous resources available on the Internet. *Cloud computing* uses the Internet and the Web to shift many computer activities from a user's computer to computers on the Internet. The wireless revolution and cloud computing promise the potential to dramatically affect the entire computer industry and how you and I will interact with computers.

Concept check

1. Define data. List four common types of files.
2. Define connectivity and the wireless revolution.
3. What is a network? Describe the Internet, Web, and cloud computing.

UNIT 2. THE INTERNET, THE WEB AND ELECTRONIC COMMERCE

Text 1. The Internet, the Web and Electronic Commerce

Many of the earliest Web sites were digital versions of traditional resources like the dictionary, encyclopedia, or phone book. These sites made it possible to access information more easily, but they did not customize information for the user. Today it is possible to filter through this information more easily, and some Web sites are tailoring their content for each user.

Some experts predict that in the future your browser will act more like your personal assistant. Your computer will not only be capable of retrieving information from the Web, it will be able to understand and process it on your behalf. Imagine a world where your computer is like your trusted friend, able to make suggestions because it truly knows you. It may scan the Web for you and predict which of the latest films and new restaurants you might like and suggest openings on your calendar for a night out.

Want to communicate with a friend across town, in another state, or even in another country? Looking for a long-lost friend? Looking for travel or entertainment information? Perhaps you're researching a term paper or exploring different career paths. Where do you start? For these and other information-related activities, most people use the Internet and the Web.

The Internet is often referred to as the Information Superhighway. In a sense, it is like a highway that connects you to millions of other people and organizations. Unlike typical highways that move people and things from one location to another, the Internet moves your ideas and information. The Web provides an easy-to-use, intuitive, multimedia interface to resources available on the Internet. It has become an everyday tool for all of us to use.

Competent end users need to be aware of the resources available on the Internet and the Web. Additionally, they need to know how to access these resources, to effectively communicate electronically, to efficiently locate information, to understand electronic commerce, and to use Web utilities.

The Internet and the Web

The Internet was launched in 1969 when the United States funded a project that developed a national computer network called Advanced Research Project Agency Network (ARPANET). *The Internet* is a large network that connects together smaller networks all over the globe. The Web was introduced in 1991 at the Center for European Nuclear Research (CERN) in Switzerland. Prior to the Web, the Internet was all text – no graphics, animations, sound, or video. The Web made it possible to include these elements. It provided a multimedia interface to resources available on the Internet. From these early research beginnings, the Internet and the Web have evolved into one of the most powerful tools of the 21st century.

It is easy to get the Internet and the Web confused, but they are not the same thing. The Internet is the actual network. It is made up of wires, cables, satellites, and rules for exchanging information between computers connected to the network. Being connected to this network is often described as being online. The Internet connects millions of computers and resources throughout the world. The *Web* is a multimedia interface to the resources available on the Internet. Every day over a billion users from nearly every country in the world use the Internet and the Web. What are they doing? The most common uses are the following:

Communicating is by far the most popular Internet activity. You can exchange e-mail with your family and friends almost anywhere in the world. You can join and listen to discussions and debates on a wide variety of special-interest topics.

Shopping is one of the fastest-growing Internet applications. You can window shop, look for the latest fashions, search for bargains, and make purchases.

Searching for information has never been more convenient. You can access some of the world's largest libraries directly from your home computer. You can find the latest local, national, and international news.

Education or *e-learning* is another rapidly emerging Web application. You can take classes on almost any subject. There are courses just for fun and there are courses for high school, college, and graduate school credit. Some cost nothing to take and others cost a lot.

Entertainment options are nearly endless. You can find music, movies, magazines, and computer games. You will find live concerts, movie previews, book clubs, and interactive live games.

The first step to using the Internet and the Web is to get connected, or to gain access to the Internet.

Concept check

1. Describe how the Internet and the Web started.
2. What is the difference between the Internet and the Web?
3. List and describe five of the most common uses of the Internet and the Web.

Text 2. Access: Browsers and providers

The Internet and the telephone system are similar – you can connect a computer to the Internet much like you connect a phone to the telephone system. Once you are on the Internet, your computer becomes an extension of what seems like a giant computer – a computer that branches all over the world.

When provided with a connection to the Internet, you can use a browser program to search the Web.

The most common way to access the Internet is through an *Internet service provider (ISP)*. The providers are already connected to the Internet and provide a path or connection for individuals to access the Internet. Your college or university most likely provides you with free access to the Internet either through its local area networks or possibly through a dial-up or telephone connection. There are also some companies that offer free Internet access.

The most widely used commercial Internet service providers are national and wireless providers.

National service providers are the most widely used. They provide access through standard telephone or cable connections. Users can access the Internet from almost anywhere within the country for a standard fee without incurring long-distance telephone charges.

Wireless service providers offer Internet connections for computers with wireless modems and a wide array of wireless devices.

Browsers are programs that provide access to Web resources. This software connects you to remote computers, opens and transfers

files, displays text and images, and provides in one tool an uncomplicated interface to the Internet and Web documents.

Browsers allow you to explore, or to surf, the Web by easily moving from one Web site to another. Four well- known browsers are Mozilla Firefox, Apple Safari, Microsoft Internet Explorer, and Google Chrome.

For browsers to connect to resources, the *location* or *address* of the resources must be specified. These addresses are called *uniform resource locators* (URLs). All URLs have at least two basic parts. The first part presents the protocol used to connect to the resource. *Protocols* are rules for exchanging data between computers. The protocol *http* is used for Web traffic and is the most widely used Internet protocol. The second part presents the *domain name*. (Many URLs have additional parts specifying directory paths, file names, and pointers.) The last part of the domain name following the dot (.) is the *top-level domain* (TLD). It identifies the type of organization. For example, .com indicates a commercial site.

Once the browser has connected to the Web site, a document file is sent back to your computer. This document typically contains *Hypertext Markup Language (HTML)*. The browser interprets the HTML formatting instructions and displays the document as a *Web page*. For example, when your browser first connects to the Internet, it opens up to a Web page specified in the browser settings. This page presents information about the site along with references and *hyperlinks* or *links* that connect to other documents containing related information – text files, graphic images, audio, and video clips.

These documents may be located on a nearby computer system or on one halfway around the world. The links typically appear on the Web page as underlined and colored text and/or images. When your mouse passes over a link, the mouse pointer is changed to the shape of a small hand. To access the referenced material, all you do is click on the highlighted text or image. A connection is automatically made to the computer containing the material, and the referenced material appears on your display screen.

Web pages also can contain special programming to add interest and activity. A language called *JavaScript* is often used to trigger simple interactive features, such as opening new browser windows and checking information entered in online forms. An advanced use of

JavaScript called *AJAX* can be found on many interactive sites. This technology is used to create interactive Web sites that respond quickly, like traditional desktop application software. *Applets* are written in the Java programming language. These programs can be downloaded quickly and run by most browsers. Java applets are used to present animation, display graphics, provide interactive games, and much more.

Today it is common to access the Internet from a variety of mobile devices like cell phones. Special browsers called *mobile browsers* are designed to run on these portable devices. Unlike a traditional Web browser that is typically displayed on a large screen, a mobile browser is displayed on a very small screen and special navigational tools are required to conveniently view Web content. The Apple iPhone, for example, enables you to "pinch" or "stretch" the screen with two fingers to zoom Web content in and out.

Concept check

1. What is the function of an ISP? Describe two types of ISPs.
2. What is the function of a browser? What is the function of a mobile Web browser?
3. What are URLs, HTML, Web pages, hyperlinks, JavaScript, AJAX applets, and Java?

Text 3. Communication

As previously mentioned, communication is the most popular Internet activity, and its impact cannot be overestimated. At a personal level, friends and family can stay in contact with one another even when separated by thousands of miles. At a business level, electronic communication has become a standard, and many times preferred, way to stay in touch with suppliers, employees, and customers. Some popular types of Internet communication are e-mail, instant messaging, social networking, blogs, and wikis.

E-mail or *electronic mail* is the transmission of electronic messages over the Internet. All you need to send and receive e-mail is an e-mail account, access to the Internet, and an e-mail program. Two

of the most widely used e-mail programs are Microsoft's Outlook Express and Mozilla Thunderbird.

A typical e-mail message has three basic elements: header, message, and signature. The header appears first and typically includes the following information:

Addresses: Addresses of the persons sending, receiving, and, optionally, anyone else who is to receive copies. E-mail addresses have two basic parts. The first part is the user's name and the second part is the domain name, which includes the top-level domain. In our example e-mail, dcoats is Dan's user name. The server providing e-mail service for Dan is usc.edu. The top-level domain indicates that the provider is an educational institution.

Subject: A one-line description, used to present the topic of the message. Subject lines typically are displayed when a person checks his or her mailbox.

Attachments: Many e-mail programs allow you to attach files such as documents and image files. If a message has an attachment, the file name typically appears on the attachment line.

The letter or *message* comes next. Finally, the *signature* provides additional information about the sender. This information may include the sender's name, address, and telephone number.

E-mail can be a valuable asset in your personal and professional life. However, like many other valuable technologies, there are drawbacks too. Americans receive billions of unwanted and unsolicited e-mails every year. This unwelcome mail is called spam. While spam is indeed a distraction and nuisance, it also can be dangerous. For example, computer viruses or destructive programs are often attached to unsolicited e-mail.

In an attempt to control spam, anti-spam laws have been added to our legal system. For example, CAN-SPAM requires that every marketing-related e-mail provide an opt-out option. When the option is selected, the recipient's e-mail address is to be removed from future mailing lists. Failure to do so results in heavy fines. This approach, however, has had minimal impact since over 50 percent of all spam originates from servers outside the United States. A more effective approach has been the development and use of *spam blockers*, also known as *spam filters*. These programs use a variety of different approaches to identify and eliminate spam.

Instant messaging (IM) allows two or more people to contact each other via direct, live communication. To use instant messaging, you register with an instant messaging server and then specify a list of friends. Whenever you connect to the Internet, special software informs your messaging server that you are online. In response, the server will notify you if any of your friends are online. At the same time, it notifies your friends that you are online. You can then send messages directly back and forth to one another. Most instant messaging programs also include video conferencing features, file sharing, and remote assistance. Many businesses routinely use these instant messaging features.

The most widely used instant messaging services are AOL's Instant Messenger, Microsoft's MSN Messenger, and Yahoo Messenger. One limitation, however, is that many instant messaging services do not support communication with other services. For example, at the time of this writing, a user registered with AOL cannot use AOL's Instant Messenger software to communicate with a user registered with Yahoo Messenger. Recently, however, some software companies have started providing universal instant messenger programs that overcome this limitation. Three widely used programs are Digsby, Pidgin, and Qnext.

Social Networking

One of the fastest-growing uses of the Internet is social networking, or connecting individuals to one another. While many social networking sites support a wide range of activities, there are three broad categories: reuniting, friend-of-a-friend, and common interest.

Reuniting sites are designed to connect people who have known one another but have lost touch; for example, an old high school friend that you have not seen for several years. You join a social network by connecting to a reuniting site and providing profile information such as your age, gender, name of high school, and so forth. This information is added to the reuniting site's member database. Members are able to search the database to locate individuals. Many of the sites will even notify you whenever a new individual joins that matches some parts of your profile (such as high school class). Two of the best-know reuniting sites are Classmates Online and Facebook.

Friend-of-a-friend sites are designed to bring together two people who do not know one another but share a common friend. The theory

is that, if you share a common friend, then it is likely that you would become friends. For example, a network could be started by one of your acquaintances by providing profile information on him- or herself and a list of friends. You could visit your acquaintance's site to connect to a friend(s) of your acquaintance. You could even join the list of friends provided at the site. Two well-known friend-of-a-friend sites are Friendster and MySpace.

Common interest sites bring together individuals that share common interests or hobbies. You select a networking site based on a particular interest. For example, if you wanted to share images, you might join Flickr or YouTube. If you are looking for business contacts, you might join Linkedln. If you wanted to locate or create a special interest group, you might join Meetup.

In addition to social networking sites, there are other types of sites that help ordinary people communicate across the Web.

Many individuals create personal Web sites, called *Web logs* or *blogs,* to keep in touch with friends and family. Blog postings are timestamped and arranged with the newest item first. Often, readers of these sites are allowed to comment. Some blogs are like online diaries with personal information; others focus on information about a hobby or theme, such as knitting, electronic devices, or good books. Although most are written by individual bloggers, there are also group blogs with multiple contributors. Some businesses and newspapers also have started blogging as a quick publishing method. Several sites provide tools to create blogs. Two of the most widely used are Blogger and WordPress.

A *microblog* publishes short sentences that only take a few seconds to write, rather than long stories or posts like a traditional blog. Microblogs are designed to keep friends and other contacts up-to-date on your interests and activities. The most popular microblogging site, Twitter, enables you to add new content from your browser, instant messaging application, or even a mobile phone.

A *wiki* is a Web site specially designed to allow visitors to fill in missing information or correct inaccuracies. "Wiki" comes from the Hawaiian word for fast, which describes the simplicity of editing and publishing through wiki software. Wikis support collaborative writing in which there isn't a single expert author, but rather a community of interested people that builds knowledge over time. Perhaps the most

famous example is *Wikipedia*, an online encyclopedia, written and edited by anyone who wants to contribute, that has millions of entries in over 20 languages.

Concept check

1. Define e-mail. What are the three basic elements of a typical e-mail message?
2. What is instant messaging? How is it different from e-mail?
3. What is social networking? Discuss the three basic categories.
4. Describe the differences among blogs, microblogs, and wikis.

Text 4. Search Tools

The Web can be an incredible resource, providing information on nearly any topic imaginable. Are you planning a trip? Writing an economics paper? Looking for a movie review? Trying to locate a long-lost friend? Information sources related to these questions, and much, much more, are available on the Web.

With over 20 billion pages and more being added daily, the Web is a massive collection of interrelated pages. With so much available information, locating the precise information you need can be difficult. Fortunately, a number of organizations called *search services* operate Web sites that can help you locate the information you need. They maintain huge databases relating to information provided on the Web and the Internet. The information stored at these databases includes addresses, content descriptions or classifications, and keywords appearing on Web pages and other Internet informational resources. Special programs called *spiders* continually look for new information and update the search services' databases. Additionally, search services provide special programs called search engines that you can use to locate specific information on the Web.

Search engines are specialized programs that assist you in locating information on the Web and the Internet. To find information, you go to a search service's Web site and use its search engine.

Keyword search: In a keyword search, you enter a keyword or phrase reflecting the information you want. The search engine

compares your entry against its database and returns a list of *hits*, or sites that contain the keywords. Each hit includes a hyperlink to the referenced Web page (or other resource) along with a brief discussion of the information contained at that location. Many searches result in a large number of hits. For example, if you were to enter the keyword travel, you would get thousands of hits. Search engines order the hits according to those sites that most likely contain the information requested and present the list to you in that order, usually in groups of 10.

Directory search: Most search engines also provide a directory or list of categories or topics such as Autos, Finance, and Games. In a *directory search*, you select a category or topic that fits the information that you want. Another list of subtopics related to the topic you selected appears. You select the subtopic that best relates to your topic and another subtopic list appears. You continue to narrow your search in this manner until a list of Web sites appears.

One way to research a topic is to visit the Web sites for several individual search engines. At each site, you would enter the search instructions, wait for the hits to appear, review the list, and visit selected sites. This process can be quite time-consuming and duplicate responses from different search engines are inevitable. Metasearch engines offer an alternative.

Metasearch engines are programs that automatically submit your search request to several search engines simultaneously. The metasearch engine receives the results, eliminates duplicates, orders the hits, and then provides the edited list to you.

Specialized search engines focus on subject-specific Web sites. Specialized sites can potentially save you time by narrowing your search. For example, let's say you are researching a paper about the fashion industry. You could begin with a general search engine like Yahoo! Or you could go to a search engine that specializes specifically in fashion, such as infomat.com.

Search engines are excellent tools to locate information on the Web. Be careful, however, how you use the information you find. Unlike most published material found in newspapers, journals, and textbooks, not all the information you find on the Web has been subjected to strict guidelines to ensure accuracy. In fact, anyone can publish content on the Web. Many sites, such as Wikipedia.com,

allow anyone to post new material, sometimes anonymously and without critical evaluation.

To evaluate the accuracy of information you find on the Web, consider the following:

*Authority***.** Is the author an expert in the subject area? Is the site an official site for the information presented, or is the site an individual's personal Web site?

*Accuracy***.** Has the information been critically reviewed for correctness prior to posting on the Web? Does the Web site provide a method to report inaccurate information to the author?

*Objectivity***.** Is the information factually reported or does the author have a bias? Does the author appear to have a personal agenda aimed at convincing or changing the reader's opinion?

*Currency***.** Is the information up to date? Does the site specify the date when the site was updated?

Concept check

1. What are search services, search engines, and spiders?
2. What is the difference between a keyword and a directory search?
3. Compare search, metasearch, and specialized search engines.
4. What are the four considerations for evaluating Web site content?

Text 5. Electronic commerce

Electronic commerce, also known as *e-commerce*, is the buying and selling of goods over the Internet. Have you ever bought anything over the Internet? If you have not, there is a very good chance that you will within the next year or two. Shopping on the Internet is growing rapidly and there seems to be no end in sight.

The underlying reason for the rapid growth in e-commerce is that it provides incentives for both buyers and sellers. From the buyer's perspective, goods and services can be purchased at any time of day or night. Traditional commerce is typically limited to standard business hours when the seller is open. Additionally, buyers no longer have to

physically travel to the seller's location. For example, busy parents with small children do not need to coordinate their separate schedules or to arrange for a baby sitter whenever they want to visit the mall. From the seller's perspective, the costs associated with owning and operating a retail outlet can be eliminated. For example, a music store can operate entirely on the Web without an actual physical store and without a large sales staff. Another advantage is reduced inventory. Traditional stores maintain an inventory of goods in their stores and periodically replenish this inventory from warehouses. With e-commerce, there is no in-store inventory and products are shipped directly from warehouses.

While there are numerous advantages to e-commerce, there are disadvantages as well. Some of these disadvantages include the inability to provide immediate delivery of goods, the inability to "try on" prospective purchases, and questions relating to the security of online payments. Although these issues are being addressed, very few observers suggest that e-commerce will replace bricks-and-mortar businesses entirely. It is clear that both will coexist and that e-commerce will continue to grow.

Typically, application programs are owned by individuals or organizations and stored on their computer system's hard disks. *Cloud computing* uses the Internet and the Web to shift many of these computer activities from the user's computer to other computers on the Internet.

While some suggest that the term cloud computing is merely a marketing term designed to promote new products, many others see cloud computing as a new model for computing that frees users from owning, maintaining, and storing software and data. It further provides access to these services from anywhere through an Internet connection. Several prominent firms are aggressively pursuing this new concept. These firms include IBM, Intel, Google, and Yahoo! to name just a few.

The basic components to cloud computing are clients, the Internet, and service providers.

– Clients are corporations and end users who want access to data, programs, and storage. This access is to be available anywhere and anytime that a connection to the Internet is available. End users do not need to buy, install, and maintain application programs and data.

– The Internet provides the connection between the clients and the providers. Two of the most critical factors determining the efficiency of cloud computing are (1) the speed and reliability of the user's access to the Internet and (2) the Internet's capability to provide safe and reliable transmission of data and programs.

– Service providers are organizations with computers connected to the Internet that are willing to provide access to software, data, and storage.

These providers may charge a fee or may be free. For example, Google Apps provides free access to programs with capabilities similar to Microsoft's Word, Excel, and PowerPoint.

Concept check

1. What is cloud computing?
2. What are the three basic components of cloud computing?
3. What are the two most critical factors that determine the efficiency of cloud computing?

Text 6. Web Utilities

Utilities are programs that make computing easier. *Web utilities* are specialized utility programs that make using the Internet and the Web easier and safer. Some of these utilities are browser-related programs that either become part of your browser or are executed from your browser. Others are designed to protect children from dangerous and inappropriate Web site material. File transfer utilities allow you to efficiently copy files to and from your computer across the Internet.

Plug-ins are programs that are automatically started and operate as a part of your browser. Many Web sites require you to have one or more plug-ins to fully experience their content. Some widely used plug-ins include

Acrobat Reader from Adobe – for viewing and printing a variety of standard forms and other documents saved in a special format called PDF.

Windows Media Player from Microsoft – for playing audio files, video files, and much more.

QuickTime from Apple – for playing audio and video files.

RealPlayer from RealNetworks – for playing audio and video files.

Shockwave from Adobe – for playing Web-based games and viewing concerts and dynamic animations.

Some of these utilities are included in many of today's browsers and operating systems. Others must be installed before they can be used by your browser.

Filters block access to selected sites. The Internet is an interesting and multifaceted arena. But one of those facets is a dark and seamy one. Parents, in particular, are concerned about children roaming unrestricted across the Internet. Filter programs allow parents as well as organizations to block out selected sites and set time limits. Additionally, these programs can monitor use and generate reports detailing the total time spent on the Internet and the time spent at individual Web sites, chat groups, and newsgroups.

Using *file transfer utility software*, you can copy files to your computer from specially configured servers. This is called *downloading*. You also can use file transfer utility software to copy files from your computer to another computer on the Internet. This is called *uploading*. Three popular types of file transfer are FTP, Web-based, and BitTorrent.

File transfer protocol (FTP) and secure file transfer protocol (SFTP) allow you to efficiently copy files to and from your computer across the Internet, and are frequently used for uploading changes to a Web site hosted by an Internet service provider. FTP has been used for decades and still remains one of the most popular methods of file transfer.

Web-based file transfer services make use of a Web browser to upload and download files. This eliminates the need for any custom software to be installed. A popular Web-based file transfer service is drop.io.

BitTorrent distributes file transfers across many different computers for more efficient downloads, unlike other transfer technologies where a file is copied from one computer on the Internet to another. A single file might be located on dozens of individual computers. When you download the file, each computer sends you a tiny piece of the larger file, making Bit- Torrent well-suited for

transferring very large files. Unfortunately, BitTor- rent technology often has been used for distributing unauthorized copies of copyrighted music and video.

Internet Security Suites

An *Internet security suite* is a collection of utility programs designed to maintain your security and privacy while you are on the Web. These programs control spam, protect against computer viruses, provide filters, and much more. You could buy each program separately; however, the cost of the suite is typically much less. Two of the best-known Internet security suites are McAfee's Internet Security and Symantec's Norton Internet Security.

Concept check

1. What are Web utilities?
2. What are plug-ins and filters used for?
3. Describe file transfer utilities and Internet security

UNIT 3. BASIC SOFTWARE

Introduction

Not long ago, trained specialists were required to perform many of the operations you can now do with a microcomputer. Secretaries used typewriters to create business correspondence. Market analysts used calculators to project sales. Graphic artists created designs by hand. Data processing clerks created electronic files to be stored on large computers. Now you can do all these tasks – and many others – with a microcomputer and the appropriate application software.

Think of the microcomputer as an electronic tool. You may not consider yourself very good at typing, calculating, organizing, presenting, or managing information. However, a microcomputer can help you do all these things and much more. All it takes is the right kinds of software.

Competent end users need to understand the capabilities of basic application software, which includes word processors, spreadsheets, database management systems, and presentation programs. They need to know about integrated packages and software suites.

Text 1. Application Software

There are two kinds of software. System software works with end users, application software, and computer hardware to handle the majority of technical details. Application software, also known simply as apps, can be described as end-user software and is used to accomplish a variety of tasks.

Application software, in turn, can be divided into two categories. One category is basic applications. These programs are widely used in nearly every discipline and occupation. They include word processors, spreadsheets, database management systems, and presentation graphics. The other category, specialized applications, includes thousands of other programs that tend to be more narrowly focused and used in specific disciplines and occupations.

A *user interface* is the portion of the application that allows you to control and to interact with the program. Most applications use a *graphical user interface (GUI)* that displays graphical elements called icons to represent familiar objects and a mouse. The mouse controls a

pointer on the screen that is used to select items such as icons. Another feature is *the use of windows* to display information. A window is simply a rectangular area that can contain a document, program, or message. More than one window can be opened and displayed on the computer screen at one time.

Traditionally, most software programs, including those in Microsoft Office 2003, use a system of *menus, toolbars, dialog boxes, and buttons*.

Menus present commands that are typically displayed in a menu bar at the top of the screen. When one of the menu items is selected, an additional list of menu options or a *dialog box* that provides additional information and requests user input may appear. *Toolbars* typically appear below the menu bar. They contain small graphic elements called *buttons* that provide shortcuts for quick access to commonly used commands.

Microsoft Office 2010 uses an interface introduced in Office 2007 that makes it easier for users to find and use all the features of an application. This new design introduces ribbons, tabs, galleries, and more.

Ribbons replace menus and toolbars by organizing commonly used commands into a set of tabs. These tabs display command buttons that are the most relevant to the tasks being performed by the user.

Tabs are used to divide the ribbon into major activity areas. Each tab is then organized into groups that contain related items. Some tabs, called contextual tabs, only appear when they are needed and anticipate the next operations to be performed by the user.

Galleries simplify the process of making a selection from a list of alternatives. This is accomplished by displaying small graphic representations of the alternatives.

This new interface is the first major change in over a decade and promises to greatly improve user functionality and efficiency.

Many applications support speech recognition, the ability to accept voice input to select menu options and dictate text.

Concept check

1. What is the difference between basic and specialized applications?
2. List some common features of most programs including Microsoft Office 2003.
3. Describe some of the features introduced in Microsoft Office 2007 and 2010.

Text 2. Word Processors and Spreadsheets

Word processors create text-based documents and are one of the most flexible and widely used software tools. All types of people and organizations use word processors to create memos, letters, and faxes. Organizations create newsletters, manuals, and brochures to provide information to their customers. Students and researchers use word processors to create reports. Word processors can even be used to create personalized Web pages.

Microsoft Word is the most widely used word processor. Other popular word processors include *Corel WordPerfect and Apple Pages*.

Word processors provide a variety of features to make entering, editing, and formatting documents easy. One of the most basic features for entering text is *word wrap*. This feature automatically moves the insertion point to the next line once the current line is full. As you type, the words wrap around to the next line.

There are numerous features designed to support editing or modifying a document. One of these is a *thesaurus* that provides synonyms, antonyms, and related words for a selected word or phrase. You can quickly locate and replace selected words using the find and replace feature. *Spelling and grammar checkers* look for misspelled words and problems with capitalization, punctuation, and sentence structure. Other features are designed to improve the format or appearance of a document. One of the most basic is *the font or design of the characters*. The height of a character is its *font size*. The appearance of characters can be enhanced using such character effects as *bold, italic, and colors*. Rather than individually selecting specific fonts, sizes, and formats, the styles feature, found in most word processors, enables users to quickly apply a predefined set of formatting characteristics to text in one easy step. *Bulleted and numbered lists* can make a sequence of topics easy to read.

Spreadsheet programs organize, analyze, and graph numeric data such as budgets and financial reports. Once used exclusively by accountants, spreadsheets are widely used by nearly every profession. Marketing professionals analyze sales trends. Financial analysts evaluate and graph stock market trends. Students and teachers record grades and calculate grade point averages.

The most widely used spreadsheet program is Microsoft Excel. Other spreadsheet applications include Apple iWork's Numbers and Corel Quattro Pro.

Unlike word processors, which manipulate text and create text documents, spreadsheet programs manipulate numeric data and create workbook files. Workbook files consist of one or more related worksheets. A worksheet, also known as a spreadsheet or sheet, is a rectangular grid of rows and columns. The columns are identified by letters and the rows are identified by numbers. The intersection of a row and column creates a cell.

A cell can contain *text or numeric entries*. Text entries or labels provide structure to a worksheet by describing the contents of rows and columns.

A numeric entry can be a number or a formula. A *formula* is an instruction to calculate or process. *Functions* are prewritten formulas provided by the spreadsheet program that perform calculations such as adding a series of cells. *A range* is a series of continuous cells. Spreadsheet programs typically provide a variety of different types of functions, including financial, mathematical, statistical, and logical functions.

Analytical graphs or charts are visual representations of data in a spreadsheet. You can readily create graphs in a spreadsheet program by selecting the cells containing the data to be charted and then selecting the type of chart to display. If you change one or more numbers in your spreadsheet, all related formulas will automatically recalculate and charts will be recreated.

This is called *recalculation***.** The process of observing the effect of changing one or more cells is often referred to as what-if analysis. For example, to analyze the effect of a rent increase in the Monthly Budget worksheet in Figure 3-6, all you would need to do is replace the contents in cell D9. The entire spreadsheet, including any charts that had been created, would be recalculated automatically.

Concept check

1. What are spreadsheets used for? What is a workbook file? What is a worksheet?
2. Define rows, columns, cells, ranges, text, and numeric entries.

3. Describe the following spreadsheet features: formulas, functions, charts, recalculation, and what-if analysis.

Text 3. Database Management Systems

A database is a collection of related data. It is the electronic equivalent of a file cabinet. A *database management system (DBMS) or database manager* is a program that sets up, or structures, a database. It also provides tools to enter, edit, and retrieve data from the database. All kinds of individuals use databases, from teachers recording grades to police officers checking criminal histories. Colleges and universities use databases to keep records on their students, instructors, and courses. Organizations of all types maintain employee databases.

The most widely used database management system designed for microcomputers is Microsoft Access.

The relational database is the most widely used database structure. Data is organized into related tables. Each table is made up of rows called records and columns called fields. Each record contains fields of data about some specific person, place, or thing.

A DBMS provides a variety of tools to create and use databases. A sort tool will quickly rearrange a table's records according to a selected field.

A filter tool will quickly display only those records meeting the conditions you specify.

The greatest power of a DBMS, however, comes from its ability to quickly find and bring together information stored in separate tables using queries, forms, and reports. A query is a question or a request for specific data contained in a database. Database forms look similar to traditional printed forms. These electronic forms are displayed on the computer monitor and typically reflect the contents for one record in a table. They are primarily used to enter new records and to make changes to existing records. Data from tables and queries can be printed in a variety of different types of reports from a simple listing of an entire field in a table to a list of selected fields based on a query involving several tables.

Concept check

1. What is a database? What is a DBMS? A relational database?
2. What are tables, records, and fields?
3. Describe the following DBMS features: sort, filter, query, form, and report.

Text 4. Presentation Graphics

Research shows that people learn better when information is presented visually. A picture is indeed worth a thousand words or numbers. Presentation graphics are programs that combine a variety of visual objects to create attractive, visually interesting presentations. They are excellent tools to communicate a message and to persuade people.

People in a variety of settings and situations use presentation graphics programs to make their presentations more interesting and professional. For example, marketing managers use presentation graphics to present proposed marketing strategies to their superiors. Salespeople use these programs to demonstrate products and encourage customers to make purchases. Students use presentation graphics programs to create high-quality class presentations.

Three of the most widely used presentation graphics programs are Microsoft PowerPoint, Corel Presentations, and Apple Keynote.

An electronic presentation consists of a series of *slides or pages*. Presentation programs include a variety of features to help you create effective dynamic presentations. Most include *design and content templates* that help you quickly create a professional-looking presentation. *Design templates* provide professionally selected combinations of color schemes, slide layouts, and special effects. *Content templates* include suggested content for each slide. Other features include tools to select alternative color schemes and slide layouts, to create animated graphics and charts, and to help you rehearse the presentation.

More advanced features include the capability to use animations, special effects that add action to text and graphics on a slide. Additionally, transitions can be used to animate how the presentation moves from one slide to the next. Other features allow you to print slides, create speaker notes, and provide handouts for your audience.

Concept check

1. What are presentation graphics programs? What are they used for?
2. What are slides? What are design and content templates? What are they used for?
3. What are animations and transitions? What are they used for?

Text 5. Integrated Packages and Software Suites

An integrated package is a single program that provides the functionality of a word processor, spreadsheet, database manager, and more. The primary disadvantage of an integrated package is that the capabilities of each function (such as word processing) are not as extensive as in the individual programs (such as Microsoft Word). The primary advantages are cost and simplicity. The cost of an integrated package is much less than the cost of the individual powerful, professional-grade application programs discussed thus far in this chapter.

Integrated packages are popular with many home users and are sometimes classified as personal or home software. The most widely used integrated package is Microsoft Works. AppleWorks is also widely used.

A software suite is a collection of separate application programs bundled together and made available as a group. While the applications function exactly the same whether purchased in a suite or separately, it is significantly less expensive to buy a suite of applications than to buy each application separately.

Productivity suites, also known as office software suites or simply office suites, contain professional-grade application programs that are typically used in a business situation. Productivity suites commonly include a word processor, spreadsheet, database manager, and a presentation application. The best known is Microsoft Office. Other well-known productivity suites are Apple iWork, Sun StarOffice, Corel WordPerfect Office Suite, and Lotus SmartSuite.

Traditionally, when you purchase an office suite you are licensed to use the application and a copy of the software is stored on your computer. Recently, however, several alternative office suites have

been made available for free as downloadable software. Popular downloadable office suites include StarOffice, IBM Lotus Symphony, and OpenOffice.

Cloud suites or online office suites are stored at a server on the Internet and are available anywhere you can access the Internet. Documents created using online applications also can be stored online, making it easy to share and collaborate on documents with others. One downside to cloud applications is that you are dependent upon the server providing the application to be available whenever you need it. For this reason, when using online applications, it is important to have backup copies of your documents on your computer and to have a desktop office application available to use. Popular online office suites include Google Docs, Zoho, and ThinkSmart.

Many times it is convenient *to share data* between applications. For example, when writing a report, it may be useful to include a chart from a spreadsheet or data from a database. Data created by one application can be shared with another application in a variety of different ways, including copying and pasting, object linking, and object embedding.

Two other types of suites that are more narrowly focused are specialized suites and utility suites.

Specialized suites focus on specific applications. These include graphics suites, financial planning suites, and many others. *Utility suites* include a variety of programs designed to make computing easier and safer. Two of the best known are Norton SystemWorks and Norton Internet Security Suite.

Concept check

1. What is an integrated package?
2. Describe the advantages and disadvantages of an integrated package.
3. What is a software suite? What are the advantages of purchasing a suite?
4. What is the difference between a traditional office suite and a cloud or online suite? How can data be shared between applications?
5. What is the difference between a specialized suite and a utility suite?

KEY WORDS

Unit 1. Information Technology, the Internet, and You

Application Software – Software that can perform useful work, such as word processing, cost estimating, or accounting tasks. The user primarily interacts with application software.

Basic Application – Applications used for doing common tasks, such as browsers and word processors, spreadsheets, databases, management systems, and presentation graphics. It is also known as productivity applications.

Communication Device – Computer systems that communicate with other computer systems using modems. For example, it modifies computer output into a form that can be transmitted across standard telephone lines.

Compact Disc (CD) – Widely used optical disc format. It holds 650 MB (megabytes) to 1 GB (gigabyte) of data on one side of the CD.

Computer Competency – Becoming proficient in computer-related skills.

Connectivity – Capability of the microcomputer to use information from the world beyond one's desk. Data and information can be sent over telephone or cable lines and through the air so that computers can talk to each other and share information.

Data – Raw, unprocessed facts that are input to a computer system that will give compiled information when the computer processes those facts. Data is also defined as facts or observations about people, places, things, and events.

Database File – File containing highly structured and organized data created by database management programs.

Desktop Computer – Computer small enough to fit on top of or along the side of a desk and yet too big to carry around.

Device Driver – Every device that is connected to the computer has a special program associated with it called a device driver that allows communication between the operating system and the device.

DVD (digital versatile disc or digital video disc) – Similar to CD-ROMs except that more data can be packed into the same amount of space. DVD drives can store 4.7 GB to 17 GB on a single DVD disc or 17 times the capacity of CDs.

Document File – File created by a word processor to save documents such as letters, research papers, and memos.

End User – Person who uses microcomputers or has access to larger computers.

Flash Memory Card – A solid-state storage device widely used in notebook computers. Flash memory also is used in a variety of specialized input devices to capture and transfer data to desktop computers.

Hard Disk – Enclosed disk drive containing one or more metallic disks. Hard disks use magnetic charges to record data and have large storage capacities and fast retrieval times.

Hardware – Equipment that includes a keyboard, monitor, printer, the computer itself, and other devices that are controlled by software programming.

Hi Def (high definition) Disc – The next generation of optical disc, which offers increased storage capacities.

Information – Data that has been processed by a computer system.

Information System – Collection of hardware, software, people, data, and procedures that work together to provide information essential to running an organization.

Information Technology (IT) – Computer and communication technologies, such as communication links to the Internet, that provide help and understanding to the end user.

Input Device – Piece of equipment that translates data into a form a computer can process. The most common input devices are the keyboard and the mouse.

Internet – A huge computer network available to everyone with a microcomputer and a means to connect to it. It is the actual physical network made up of wires, cables, and satellites as opposed to the Web, which is the multimedia interface to resources available on the Internet.

Keyboard – Input device that looks like a typewriter keyboard but has additional keys.

Media Center System Unit – Use powerful desktop system hardware with specialized graphics cards for interfacing with televisions and other home entertainment devices.

Memory – Memory is contained on chips connected to the system board and is a holding area for data instructions and information

(processed data waiting to be output to secondary storage). RAM, ROM, and CMOS are three types of memory chips.

Modem – Short for modulator-demodulator. It is a communication device that translates the electronic signals from a computer into electronic signals that can travel over telephone lines.

Monitor – Output device like a television screen that displays data processed by the computer.

Mouse – Device that typically rolls on the desktop and directs the cursor on the display screen.

Operating System – Software that interacts between application software and the computer, handling such details as running programs, storing and processing data, and coordinating all computer resources, including attached peripheral devices. It is the most important program on the computer. Windows 7, Windows Vista, and Mac OS X are examples of operating systems.

Optical Disc – Storage device that can hold over 17 gigabytes of data, which is an equivalent of several million typewritten pages. Lasers are used to record and read data on the disc.

Output Device – Equipment that translates processed information from the central processing unit into a form that can be understood by humans. The most common output devices are monitors and printers.

Presentation File – A file created by presentation graphics programs to save presentation materials. For example, a file might contain audience handouts, speaker notes, and electronic slides.

Printer – Device that produces printed paper output.

Procedures – Rules or guidelines to follow when using hardware, software, and data. Program Instructions for the computer to follow to process data.

Random Access Memory (RAM) – Volatile, temporary storage that holds the program and data the CPU is presently processing. It is called temporary storage because its contents will be lost if electrical power to the computer is disrupted or the computer is turned off.

Secondary Storage – Permanent storage used to preserve programs and data that can be retained after the computer is turned off. These devices include hard disks, magnetic tape, CDs, DVDs, and more.

Software – Computer program consisting of step-by-step instructions, directing the computer on each task it will perform.

Solid-State Drive (SSD) – Designed to be connected inside a microcomputer system the same way an internal hard disk would be, but contains solid–state memory instead of magnetic disks to store data.

Solid-State Storage – A secondary storage device that has no moving parts. Data is stored and retrieved electronically directly from these devices, much as they would be from conventional computer memory.

Specialized Application – Programs that are narrowly focused on specific disciplines and occupations. Some of the best known are multimedia, Web authoring, graphics, virtual reality, and artificial intelligence.

System Software – "Background" software that enables the application software to interact with the computer. System software consists of the operating system, utilities, device drivers, and language translators. It works with application software to handle the majority of technical details.

System Unit – Part of a microcomputer that contains the CPU. Also known as the system cabinet or chassis, it is the container that houses most of the electronic components that make up the computer system.

USB Drive – The size of a key chain, these hard drives connect to a computer's USB port enabling a transfer of files; has a capacity of up to 64GB.

Utility – Performs specific tasks related to managing computer resources or files. Norton Utility for virus control and system maintenance is a good example of a utility. Also known as service programs.

Web – Introduced in 1992 and prior to the Web, the Internet was all text. The Web made it possible to provide a multimedia interface that includes graphics, animations, sound, and video.

Worksheet File – Created by electronic spreadsheets to analyze things like budgets and to predict sales.

UNIT 2. THE INTERNET, THE WEB, AND ELECTRONIC COMMERCE

Advanced Research Project Agency Network (ARPANET) – A national computer network from which the Internet developed.

AJAX – An advanced use of JavaScript found on many interactive sites. This technology is used to create interactive Web sites that respond quickly like traditional desktop application software.

Applets – links to programs, written in a programming language called Java. These programs are used to add interest to a Web site by presenting animation, displaying graphics, providing interactive games, and so forth.

Application Service Provider (asp) – A business that provides computer-based services over the Internet, usually for a fee.

Attachment – A file, such as a document or worksheet, that is attached to an e-mail message.

BitTorrent – A peer-to-peer file-sharing protocol used for distributing large amounts of data over the Internet.

Browser – Special Internet software connecting you to remote computers; opens and transfers files, displays text and images, and provides an uncomplicated interface to the Internet and Web documents.

Common Interest Site – A site that brings together individuals that share common interests or hobbies.

Computer Virus – Destructive programs that can come in e-mail attachments and spam.

Dial-up Service – Method of accessing the Internet using a high-speed modem and standard telephone lines.

Directory Search – A search engine option that provides a directory or list of categories or topics to choose from, such as Arts & Humanities, Business & Economics, or Computers & Internet, that help you narrow your search until a list of Web sites appears.

Domain Name – The second part of the URL; it is the name of the server where the resource is located. For example, www.mtv.com.

Downloading – Process of transferring information from a remote computer to the computer one is using.

E-commerce – Buying and selling goods over the Internet.

E-learning – A Web application that allows one to take educational courses online.

Electronic Mail – Transmission of electronic messages over the Internet. Also known as e-mail.

E-mail – Communicate with anyone in the world who has an Internet address or e-mail account with a system connected to the Internet. You can include a text message, graphics, photos, and file attachments.

File Transfer Protocol (FTP) – Internet service for uploading and downloading files.

Filter – (1) A filter blocks access to selected Web sites. (2) A filter will locate or display records from a table that fit a set of conditions or criteria when using programs like Excel.

Friend-of-a-friend Site – A site designed to bring together two people who do not know one another but share a common friend.

Header – A typical e-mail has three elements: header, message, and signature. The header appears first and includes addresses, subject, and attachments.

Hits – The sites that a search engine returns after running a keyword search, ordered from most likely to least likely to contain the information requested.

Hyperlink – Connection or link to other documents or Web pages that contain related information.

Hypertext Markup Language (HTML) – Programming language that creates document files used to display Web pages.

Instant Messaging (IM) – A program allowing communication and collaboration for direct, "live," connections over the Internet between two or more people.

Internet – A huge computer network available to everyone with a microcomputer and a means to connect to it.

Internet Security Suite – Collection of utility programs designed to make using the Internet easier and safer.

Internet Service Provider (ISP) – Provides access to the Internet.

Java – Programming language for creating special programs like applets.

Keyword Search – A type of search option that causes the search engine to compare your entry against its database and return with a list of sites, or hits, that contain the keyword you entered.

Link – A connection to related information.

Location – For browsers to connect to resources, locations or addresses must be specified. Also known as uniform resource locators or URLs.

Metasearch Engine – Program that automatically submits your search request to several indices and search engines and then creates an index from received information.

Microblog – Publishes short sentences that only take a few seconds to write, rather than long stories or posts like a traditional blog.

National Service Provider – Internet service providers that provide access through standard telephone or cable connections and allow users to access the Internet from almost anywhere within the country for a standard fee.

Plug-in – Program that is automatically loaded and operates as part of a browser.

Protocol – Rules for exchanging data between computers. The protocol http:// is the most common.

Reuniting Site – A site that connects people who have known one another but have lost touch.

Search Engine – Specialized programs assisting in locating information on the Web and the Internet.

Search Services – Organizations that maintain databases relating to information provided on the Internet and also provide search engines to locate information.

Signature – Provides additional information about a sender of an e-mail message, such as name, address, and telephone number.

Social Networking – Using the Internet to connect individuals.

Spam – Unwanted and unsolicited e–mail that may include a computer virus.

Spam Blocker – Software that uses a variety of different approaches to identify and eliminate spam or junk mail.

Specialized Search Engine – Search engine that focuses on subject-specific Web sites.

Spider – Special programs that continually look for new information and update the search servers' databases.

Surf – Move from one Web site to another.

Top-level Domain (TLD) – Last part of an Internet address; identifies the geographical description or organizational identification. For example, using www.aol.com, the .com is the top-level domain code and indicates it is a commercial site.

Uniform resource locator (URL) – For browsers to connect you to resources on the Web, the location or address of the resources must be specified. These addresses are called URLs.

Universal Instant Messenger – An instant messaging service that communicates with any other messaging service programs.

Uploading – Process of transferring information from the computer the user is operating to a remote computer.

Web – It made possible to provide a multimedia interface that includes graphics, animations, sound, and video.

Web Page – Browsers interpret HTML documents to display Web pages.

Web Utilities – Specialized utility programs making the Internet and the Web easier and safer. Some examples are plug–ins that operate as part of a browser and filters that block access and monitor use of selected Web sites.

Wiki – A Web site that allows people to fill in missing information or correct inaccuracies on it by directly editing the pages.

Wireless Service Provider – Provides Internet connections for computers with wireless modems and a wide array of wireless devices. They do not use telephone lines.

UNIT 3. BASIC SOFTWARE

Analytical Graphs – Form of graphics used to put numeric data into objects that are easier to analyze, such as bar charts, line graphs, and pie charts.

Animation – Feature involving special visual and sound effects like moving pictures, audio, and video clips that play automatically when selected.

Application Software – Software that can perform useful work, such as word processing, cost estimating, or accounting tasks. The user primarily interacts with application software.

Basic Application – Applications used for doing common tasks, such as browsers and word processors, spreadsheets, databases, management systems, and presentation graphics.

Bulleted List – The sequence of topics arranged on a page and organized by bullets.

Button – A special area you can click to make links that “navigate” through a presentation.

Cell – The space created by the intersection of a vertical column and a horizontal row within a worksheet in a program like Microsoft Excel. A cell can contain text or numeric entries.

Character Effect – Changes the appearance of font characters by using bold, italic, shadow, and colors.

Chart – Displaying numerical data in a worksheet as a pie chart or a bar chart, making it easier to understand.

Column – Using Microsoft Excel, for example, a vertical block of cells one cell wide all the way down the worksheet.

Content Template – Includes suggested content for each slide in a PowerPoint presentation.

Contextual Tab – A type of tab found in Microsoft Word that only appears when needed and anticipates the next operations to be performed by the user.

Database – A collection of related information, like employee names, addresses, and phone numbers. It is organized so that a computer program can quickly select the desired pieces of information and display them for you.

Database management system (DBMS) – To organize, manage, and retrieve data. DBMS programs have five subsystems: DBMS engine, data definition, data manipulation, applications generation, and data administration. An example of a database management system is Microsoft Access.

Database Manager – Software package used to set up, or structure, a database such as an inventory list of supplies. It also provides tools to edit, enter, and retrieve data from the database.

Design Template – Provides professionally selected combinations of color schemes, slide layouts, and special effects for presentation graphics.

Dialog Box – Provides additional information and requests user input.

Editing – Features that modify a document such as using a thesaurus, find and replace, or spell check.

Field – Each column of information within a record is called a field. A field contains related information on a specific item like employee names within a company department.

Filter – (1) A filter blocks access to selected Web sites. (2) A filter will locate or display records from a table that fit a set of conditions or criteria when using programs like Excel.

Font – Also known as typeface, is a set of characters with a specific design.

Galleries – Feature of Microsoft Office 2007 that simplifies the process of making selections from a list of alternatives by replacing dialog boxes with visual presentations of results.

Grammar Checker – In word processing, a tool that identifies poorly worded sentences and incorrect grammar.

Graphical User Interface (GUI) – Special screen that allows software commands to be issued through the use of graphic symbols (icons) or pull-down menus.

Icons – Graphic objects on the desktop used to represent programs and other files.

Integrated Package – A single program providing functionality of a collection of programs but not as extensive as a specialized program like Microsoft Word. Popular with home users who are willing to sacrifice some advanced features for lower cost and simplicity.

Presentation Graphics – Graphics used to combine a variety of visual objects to create attractive and interesting presentations.

Productivity Suites – Also known as office suites; contain professional-grade application programs, including word processing, spreadsheets, and more. A good example is Microsoft Office.

Recalculation – If you change one or more numbers in your spreadsheet, all related formulas will automatically recalculate and charts will be recreated.

Record – Each row of information in a database is a record. Each record contains fields of data about some specific item, like employee name, address, phone, and so forth. A record represents a collection of attributes describing an entity.

Relational Database – A widely used database structure in which data is organized into related tables. Each table is made up of rows called records and columns called fields. Each record contains fields of data about a specific item.

Ribbons – Feature of Microsoft Office 2007 that replaces menus and toolbars by organizing commonly used commands into a set of tabs.

Row – A horizontal block of cells one cell high all the way across the worksheet.

Slide – A PowerPoint presentation is made up of many slides shown in different views and presentation styles.

Software Suite – Individual application programs that are sold together as a group.

Specialized Application – Programs that are narrowly focused on specific disciplines and occupations. Some of the best known are

multimedia, Web authoring, graphics, virtual reality, and artificial intelligence.

Speech Recognition – The ability to accept voice input to select menu options, and to dictate text.

Spelling Checker – Program used with a word processor to check the spelling of typed text against an electronic dictionary.

Spreadsheet – Computer-produced spreadsheet based on the traditional accounting worksheet that has rows and columns used to present and analyze data.

System Software – "Background" software that enables the application software to interact with the computer. System software consists of the operating system, utilities, device drivers, and language translators. It works with application software to handle the majority of technical details.

Tab – Used to divide the ribbon into major activity areas, with each tab being organized into groups that contain related items.

User Interface – Means by which users interact with application programs and hardware. A window is displayed with information for the user to enter or choose, and that is how users communicate with the program.

Utility Suite – A program that combines several utilities in one package to improve system performance. McAfee Office and Norton SystemWorks are examples.

What-if Analysis – Spreadsheet feature in which changing one or more numbers results in the automatic recalculation of all related formulas.

Word Processor – The computer and the program allow you to create, edit, save, and print documents composed of text.

Word Wrap – Feature of word processing that automatically moves the cursor from the end of one line to the beginning of the next.

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Производственно-практическое издание

АНГЛИЙСКИЙ ЯЗЫК

Практическое пособие

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В авторской редакции

Подписано в печать 02.06.2017. Формат 60×84 1/16.
Бумага офсетная. Ризография. Усл. печ. л. 2,8.
Уч.-изд. л. 3,1. Тираж 25 экз. Заказ 528.

Издатель и полиграфическое исполнение:
учреждение образования
«Гомельский государственный университет имени Франциска Скорины».
Свидетельство о государственной регистрации издателя, изготовителя,
распространителя печатных изданий № 3/1452 от 17.04.2017.
Специальное разрешение (лицензия) № 02330 / 450 от 18.12.2013.
Ул. Советская, 104, 246019, Гомель.

АНГЛИЙСКИЙ ЯЗЫК

Гомель
2017