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# English for Computer Science Students

(ESP)

PART 2  
SOFTWARE

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Англійська мова професійного спрямування для студентів відділу комп'ютерних технологій. Навчальний посібник для студентів комп'ютерних спеціальностей вищих навчальних закладів [Електронний ресурс] / Укл.: Венкель О.В., – Чернівці, 2018. – 100 с.

Навчальний посібник призначений для студентів комп'ютерних спеціальностей вищих навчальних закладів, які навчаються за освітньо-кваліфікаційним рівнем «Бакалавр» і мають базовий рівень підготовки з англійської мови. Тексти та лексичні вправи спрямовані на: (1) вивчення та засвоєння студентами фахової термінології згідно зазначеної тематики; (2) розвиток навичок реферування та анотування науково-технічного тексту; (3) активізацію навичок усного мовлення в межах тематики, що вивчається. Матеріали дають можливість студентам набути й розвинути необхідні навички читання, усного і письмового перекладу з англійської та на англійську мову.

Посібник містить автентичні фахові тексти для самостійного опрацювання з подальшим реферуванням прочитаного і написання анотацій українською та англійською мовами. Матеріали посібника можуть бути використані в курсах англійської мови професійного спрямування студентами технічних вищих навчальних закладів, філологами широкого профілю, перекладачами та іншими фахівцями.

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## Unit 1.

### Programs and Apps

#### Pre-Reading Activity

1. Read and translate the following chains of related words. Determine what part of speech they belong to. Guess their meaning.

Program(me)– programming – programmer – programmable – programmed; to install – installing – installation – to uninstall – preinstalled; to subscribe – subscriber – subscription; to maintain – maintenance; to browse- browser; to respond – response – responsive – responsiveness – responsible – responsibility; to use – usage – useful – useless; to expire – expired – expiration; to distribute – distributed – distribution; to donate – donation – donator – donatory; to configure – configuration – configurator.

2. Read and translate the text using the dictionary.

**Software**, also called a **program**, consists of a series of related instructions, organized for a common purpose, that tells the computer what tasks to perform and how to perform them. Two categories of software are **system software** and **application software** (or **applications**). System software consists of the programs that control or maintain the operations of the computer and its devices. Operating systems are a widely recognized example of system software. Other types of system software, sometimes called **tools** or **utilities**, enable you to perform maintenance-type tasks usually related to managing devices, media, and programs used by computers and mobile devices. An **application** (or **app** for short) consists of programs designed to make users more productive and/or assist them with personal tasks. Browsers are an example of an application that enables users with an Internet connection to access and view webpages.

Software is available in a variety of forms. **Retail software** is mass-produced, copyrighted software that meets the needs of a wide variety of users, not just a single user or company. Some retail software, such as an operating system, is **preinstalled** on new computers and mobile devices. You also can purchase retail software from local stores and on the web. With online purchases, you may be able to download purchased programs immediately instead of waiting for the software to arrive by mail. **Custom software** performs functions specific to a business or industry. Sometimes a company cannot locate retail software that meets its unique requirements. In this case, the company may use software developers to create tailor-made custom software. Custom software usually costs more than retail software.

A **desktop app** is an application stored on a computer. A **web app** is an application stored on a web server that you access through a browser. Users typically interact with web apps directly by visiting a website, but some web apps also can be accessed locally offline. Many websites provide free access to their apps. Some charge a onetime fee, while others charge recurring monthly or annual **subscription fees**. A **mobile app** is an application you download from a mobile device's app store, sometimes called a marketplace, or other location on the Internet to a smartphone or other mobile device. Many mobile apps are free; others have a minimal cost. A **mobile web app** is a web app that is optimized for display in a browser on a mobile device, regardless of **screen orientation** or size. Many web apps use a **responsive design**, which means the app displays properly on any computer or device.

**Shareware** is copyrighted software that is distributed at no cost for a **trial** period. To use a shareware program beyond that period, you send payment to the

software developer or you might be billed automatically unless you cancel within a specified period of time. Some developers trust users to send payment if software use extends beyond the stated trial period. Others render the software useless if no payment is received after the trial period expires. In some cases, a **scaled-down version** of the software is distributed free, and payment entitles the user to the fully functional product.

**Freeware** is copyrighted software provided at no cost by an individual or a company that retains all rights to the software. Thus, software developers typically cannot incorporate freeware in applications they intend to sell. **Open source software** is software provided for use, modification, and redistribution. This software has no restrictions from the copyright holder regarding modification of the software's internal instructions and its redistribution. Open source software usually can be downloaded from a web server on the Internet, often at no cost. Promoters of open source software state two main advantages: users who modify the software share their improvements with others, and customers can personalize the software to meet their needs. **Public-domain software** has been donated for public use and has no copyright restrictions. Anyone can copy or distribute public-domain software to others at no cost. Thousands of shareware, freeware, and public-domain programs are available on the Internet for users to download. Examples include communications, graphics, and game programs.

**OEMs** (original equipment manufacturers) often include and profit from including extra programs installed with a computer or device's operating system. These additional programs and apps, often called **bloatware**, mostly are harmless. Users object to their inclusion, however, because these programs and apps take up space, may slow start-up time, and can decrease the computer or device's overall efficiency. Bloatware can come in many forms: antivirus programs, games, productivity apps, etc.

**Installing** is the process of setting up the software to work with a computer, printer, and other hardware. Mobile apps typically install automatically after you download the app from the device's app store. You usually do not need to install web apps before you can use them, but you may need to install **plug-ins**, such as Java or Flash, so that the web apps work. During installation of software or before the first use, a program or app may ask you to **register** and/or **activate** the software. **Software registration** typically is optional and usually involves **submitting** your name and other personal information to the software manufacturer or developer. Registering the software often entitles you to product support. **Product activation** is a technique that some software manufacturers use to ensure that you do not install the software on more computers than legally licensed. Usually, the software can be run a preset number of times, has limited functionality, or does not function until you activate it via the Internet or by phone. Thus, activation is a required process for programs that request it. Some software allows multiple activations; for example, you can install it and run it on a laptop and a desktop. Registering or activating software also usually entitles you to free **program updates** for a specified time period, such as a year. Many desktop and mobile apps use an **automatic update** feature, where the updates can be **configured** to download and install automatically. With web apps, by contrast, you always access the latest version of the software.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

## Reading Comprehension

### 3. Answer the questions

1. What is software? 2. What is the difference between system and application software? 3. Define the word “an application”. 4. What is retail software? Can it be preinstalled? 5. What is the difference between retail and custom software? Which one is more expensive? Why? 6. What types of apps do you know? 7. Are all of them free? 8. What is responsive design? 9. What are the features of shareware? 10. What are the advantages of open source software? 11. Explain the process of installing an app. 12. What is product activation? 13. What is an automatic update? 14. What is bloatware? Should OEMs install it?

### 4. Mark the statements true or false. Correct the false ones.

1. System software consists of the programs that enable you to perform maintenance-type tasks.
2. Mobile apps usually install automatically after downloading from the app store.
3. Custom software is usually more expensive than retail software.
4. Product activation is optional and usually involves submitting your name and other personal information to the software manufacturer.
5. Users typically interact with desktop apps directly by visiting a website.
6. Bloatware may slow start-up time, and can decrease the computer or device’s overall efficiency.
7. Responsive design allows displaying the app properly on any computer or device.
8. Public-domain software has no copyright restrictions.
9. Open source software can be downloaded from a web server on the Internet, often at no cost for a trial period.
10. Browsers are an example of system software.

### 5. Finish the sentences according to the text

1. Two categories of software are ... 2. Other types of system software, sometimes called tools ... 3. With online purchases, you may be able ... 4. The company may use software developers ... 5. Users typically interact with web apps ... 6. A mobile app is an application ... 7. To use a shareware program beyond that period, you ... 8. Promoters of open source software state two main advantages ... 9. Bloatware can come in many forms ... 10. Usually, the software can be run ...

### 6. Write the short summary of the text.

## Vocabulary Practice

### 7. Translate the following words and word combinations into Ukrainian

Utility, retail software, to be preinstalled, a desktop app, to be accessed locally offline, annual subscription fee, screen orientation, responsive design, to render the software useless, freeware, system software, open source software, to share the improvements, public-domain software, plug-in, program update, bloatware, to decrease the computer’s overall efficiency, software registration, to be configured.

### 8. Translate the following words and word combinations into English

Прикладне програмне забезпечення; переглядати веб-сторінки; ПЗ, захищене авторським правом; відповідати вимогам; ПЗ на замовлення; веб-

додаток (застосунок); вільний доступ; мобільний додаток; умовно-безкоштовне ПЗ; пробний період; відмінити впродовж зазначеного періоду часу; зменшена версія програми; зберігати всі права на ПЗ; зміна; обмеження; виробник комплектного обладнання; займати місце; активація програми; визначена кількість разів; автоматичне оновлення.

#### 9. Translate the following sentences into Ukrainian

1. Tools or utilities enable you to perform maintenance-type tasks usually related to managing devices, media, and programs used by computers and mobile devices. 2. If a company cannot locate retail software that meets its unique requirements, it may use software developers to create tailor-made custom software that usually costs more than retail software. 3. A mobile app is an application you download from a mobile device's app store, sometimes called a marketplace, or other location on the Internet to a smartphone or other mobile device. 4. Some developers trust users to send payment if software use extends beyond the stated trial period; others render the software useless if no payment is received after the trial period expires. 5. Thousands of shareware, freeware, and public-domain programs are available on the Internet for users to download, e.g., communications, graphics, and game programs.

#### 10. Match the words and explanations

1.	software	a.	mass-produced, copyrighted software that meets the needs of a wide variety of users, not just a single user or company
2.	application	b.	copyrighted software that is distributed at no cost for a trial period
3.	screen orientation	c.	software provided for use, modification, and redistribution with no restrictions from the copyright holder
4.	retail software	d.	software that is specially developed for some specific organization or other user
5.	desktop app	e.	a series of related instructions, organized for a common purpose, that tells the computer what tasks to perform and how to perform them
6.	system software	f.	a software file that contains fixes for problems found by other users or the software developer
7.	shareware	g.	a method of designing web pages that automatically appear in their optimized form on all devices
8.	custom software	h.	a technique that some software manufacturers use to ensure that you do not install the software on more computers than legally licensed
9.	responsive design	i.	a way in which a screen is oriented for normal viewing. The two most common types are portrait and landscape
10.	mobile app	j.	software on a computer that is designed to control and work with computer hardware

11.	freeware	k.	an application stored on a web server that you access through a browser
12.	public-domain software	l.	an application stored on a computer
13.	web app	m.	a type of software donated for public use without copyright restrictions
14.	original equipment manufacturer	n.	software that comes pre-installed with OEM computers and offers no advantage because it's a trial or expires after a few days
15.	utility	o.	an application you download from a mobile device's app store or other location on the Internet to a smartphone or other mobile device
16.	open source software	p.	a small computer program that makes a larger one work faster or have more features
17.	product activation	q.	a set programs designed to make users more productive and/or assist them with personal tasks
18.	plug-in	r.	a company that makes a part or subsystem that is used in another company's end product
19.	update	s.	copyrighted software provided at no cost by an individual or a company that retains all rights to the software
20.	bloatware	t.	computer system software intended to analyze, configure, monitor, or help maintain a computer

*11. Fill in the prepositions where necessary.*

1. Software consists \_\_\_ a series of related instructions, organized \_\_\_ a common purpose. 2. A mobile web app is a web app that is optimized \_\_\_ display \_\_\_ a browser \_\_\_ a mobile device, regardless \_\_\_ screen orientation or size 3. Software is available \_\_\_ a variety of forms. 4. Custom software performs \_\_\_ functions specific \_\_\_ a business or industry. 5. Open source software usually can be downloaded \_\_\_ a web server \_\_\_ the Internet, often \_\_\_ no cost. 6. You also can purchase \_\_\_ retail software \_\_\_ local stores and \_\_\_ the web. 7. Bloatware can come \_\_\_ many forms: antivirus programs, games, productivity apps, etc. 8. Shareware is copyrighted software that is distributed \_\_\_ no cost \_\_\_ a trial period. 9. A web app is an application stored \_\_\_ a web server that you access \_\_\_ a browser. 10. Registering and/or activating software also usually entitles you \_\_\_ free program updates \_\_\_ a specified time period.

*12. Translate the following sentences into English*

1. Поняття вільне ПЗ і відкрите ПЗ не завжди збігаються. Вихідні коди (source codes) відкритих програм випускаються або як суспільне надбання, або на умовах «вільних» ліцензій, що дозволяє використовувати вихідний код програми для своїх потреб з мінімальними обмеженнями, такими як вимога посилатися на попередніх творців або вимога зберігати властивість відкритості при подальшому поширенні тієї ж самої або модифікованої відкритої програми. Існують також програми, що мають на думку деяких відкритий вихідний код, але не є вільними,



наприклад, UnRAR, розпакувальник RAR-архівів. Його вихідний код перебуває у відкритому доступі, але ліцензія забороняє використовувати його для створення RAR-сумісних архіваторів. 2. Коли ви купуєте новий комп'ютер з попередньо встановленою ОС, на ньому також буде купа різних додатків, їх ще називають «роздутим програмним забезпеченням» через те, що вони споживають багато місця та ресурсів. Але таке ПЗ також робить ваш комп'ютер вразливішим. Ще однією проблемою «роздутого ПЗ» є те, що воно часто оновлюється у фоновому режимі. Власник гаджета не отримує про це повідомлення, а також не знає, що саме встановлюється.

### **Speaking**

#### *13. Points for discussion.*

1. Have you ever had software problems? Did you manage to solve them?
2. Would you like to design your own software? What category would you choose? Think about the name and the aim of it.
3. What is the best application ever created?
4. Do you pay attention to the apps you download to avoid bloatware? Do you delete unnecessary apps? Would you pay more to get a clean installation of your operating system? Why (not)?
5. What is the difference between freeware, open source software and public domain software?

#### *14. Read the text and answer the questions*

##### **Automatic Updates — Safe or Not?**

Software updates often improve security and reliability, and they also may add significant features that optimize the computer's performance. In most cases, you have the choice either to allow the software to update automatically or to assess and then decide whether to install each update individually.

Software manufacturers often recommend downloading and installing the updates when they become available. The automatic update option occasionally has caused problems. In one case, people preparing their income tax returns were unable to print forms when a leading software company issued an automatic update one week before the filing deadline. In another situation, an automatic update was installed on all computers — even those with this feature disabled. The company claimed that the update was harmless and was for the benefit of its customers. Only later did some users realize that this secret update caused serious problems.

One problem, ironically, was that updates no longer could be installed on the affected computers. Customers were furious about the issues, especially because the company made the changes without informing the computer owners. One consequence of the ensuing outrage was that many people turned off the automatic update feature, fearing that future updates might cause even more damage.

(Based on: *Discovering Computers 2017: Enhanced Edition*, Shelly Cashman Series, 2016)

1. Is the automatic update feature enabled or disabled on your computer? Why?
2. Should software companies be able to send automatic updates to your computer without your knowledge? Why or why not?
3. What was the last update you installed? Was it better than the previous version of the program?
4. Have you ever had any problem with updates?

15. a) Read and translate the words and word combinations in the table. Are the categories of programs and apps mutually exclusive?

b) Think about the sample uses of each type of program, e.g., Word processing apps are used to create the letters, reports and other documents. Photo editing programs are used to modify digital photos, i.e., to crop, remove red-eye, etc.

### Categories of Programs and Apps

Category	Types of Programs and Apps	
Productivity	<ul style="list-style-type: none"> <li>• Word Processing</li> <li>• Presentation</li> <li>• Spreadsheet</li> <li>• Database</li> <li>• Note Taking</li> <li>• Calendar and Contact Management</li> <li>• Project Management</li> </ul>	<ul style="list-style-type: none"> <li>• Accounting</li> <li>• Personal Finance</li> <li>• Legal</li> <li>• Tax Preparation</li> <li>• Document Management</li> <li>• Support Services</li> <li>• Enterprise Computing</li> </ul>
Graphics and Media	<ul style="list-style-type: none"> <li>• Computer-Aided Design (CAD)</li> <li>• Desktop Publishing</li> <li>• Paint/Image Editing</li> <li>• Photo Editing and Photo Management</li> <li>• Clip Art/Image Gallery</li> </ul>	<ul style="list-style-type: none"> <li>• Video and Audio Editing</li> <li>• Multimedia and Website Authoring</li> <li>• Media Player</li> <li>• Disc Burning</li> </ul>
Personal Interest	<ul style="list-style-type: none"> <li>• Lifestyle</li> <li>• Medical</li> <li>• Entertainment</li> <li>• Convenience</li> <li>• Education</li> </ul>	
Communications	<ul style="list-style-type: none"> <li>• Blog</li> <li>• Browser</li> <li>• Chat Room</li> <li>• Online Discussion</li> <li>• Email</li> <li>• File Transfer</li> </ul>	<ul style="list-style-type: none"> <li>• Internet Phone</li> <li>• Internet Messaging</li> <li>• Mobile Messaging</li> <li>• Videoconference</li> <li>• Web Feeds</li> </ul>
Security	<ul style="list-style-type: none"> <li>• Personal Firewall</li> <li>• Antivirus</li> <li>• Malware Removers</li> <li>• Internet Filters</li> </ul>	
File, System and Disk Management	<ul style="list-style-type: none"> <li>• File Manager</li> <li>• Search</li> <li>• Image Viewer</li> <li>• Uninstaller</li> </ul>	<ul style="list-style-type: none"> <li>• Disk Defragmenter</li> <li>• Screen Saver</li> <li>• File Compression</li> <li>• PC Maintenance</li> </ul>

	• Disk Cleanup	• Backup and Restore
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(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

### 16\*. a) Problem Solving

1. **Trial Expired.** You have been using an app on your mobile device for a 30-day trial period. Now that the 30 days have expired, the app is requesting that you to pay to continue accessing your data. What are your next steps? What steps could you have taken to preserve your data before the trial period expired?

2. **Incompatible App.** You are using your Android tablet to browse for apps in the Google Play store. You found an app you want to download, but you are unable to download it because a message states it is incompatible with your device. Why might the app be incompatible with your device?

3. **Unwanted Programs.** When you displayed a list of programs installed on your computer so that you could uninstall one, you noticed several installed programs that you do not remember installing. Why might these programs be on your computer?

### b) Topics for research

1. People who use computers and mobile devices sometimes experience problems with software, including operating systems, desktop apps, web apps, and mobile apps. Problems range from not being able to install or download the program or app to a computer or mobile device, to a program or an app producing unanticipated results. Depending on the situation, these problems can result in user stress. Many people believe reactions to software problems tend to be more extreme than reactions to problems with other tools.

Evaluate situations in which you have seen people react to program and app problems on their computers and mobile devices. Discuss how these users can reduce their frustration when dealing with such problems. Have you ever been frustrated by problems with a program or an app? How did you react? What did you do to solve the problem?

2. **Web and Mobile App Comparison.** You recently purchased a new smartphone and want to research mobile apps that also have accompanying web apps.

Choose three categories of apps, and find an example for each that has both a free web and mobile version. Read user reviews of each app, and search for articles by industry experts. Research any known safety risks for the apps. Using your experience or research, note the differences in functionality between the web and mobile app. Is one or the other easier to use? Why or why not?

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

### 17\*. Render the following text in English

Сьогодні поява великої кількості різних мобільних пристроїв, за допомогою яких користувачі Інтернету заходять на сайти, призвела до того, що при створенні сайтів виникає питання: як можна розробити веб-дизайн сайту так, щоб сайт добре відображався і на мобільних пристроях, і на ПК? Завдання коректного відображення сайтів на пристроях з різною роздільністю екрану ставить перед собою адаптивний веб-дизайн.

В основі адаптивного веб-дизайну лежить так званий «гумовий» принцип: розміри елементів дизайну сайту пропорційно змінюються залежно від того, які розміри вікна браузера, в якому проглядається сайт. Вже дуже давно веб-дизайнери помітили, що пропорційна зміна розмірів різних блоків на сторінках сайту при зміні розмірів вікна браузера робить сайт більш універсальним. Адже ніколи заздалегідь невідомо, на якому саме моніторі кожен відвідувач буде переглядати сайт.

Однак тільки «гумова» верстка може виявитися недостатньою тепер, коли сайти проглядаються часом на екранах дуже маленьких розмірів. Адже навіть якщо розмір блоків на сторінці можна зменшувати хоч до нуля, то вчинити так само, наприклад, із зображеннями, не вийде. Тому адаптивний веб-дизайн пропонує застосовувати на сайті «гумові» зображення: при зменшенні розмірів вікна браузера змінюватися будуть не тільки блоки, але також і зображення.

На даний момент відвідувачі можуть заходити на сайти і з домашніх комп'ютерів, і з ноутбуків або нетбуків, і з планшетів, і з мобільних телефонів, і навіть з електронних книг, телевізорів або HD-плеєрів. Ось чому важливим стало забезпечити всім відвідувачам, незалежно від того, якими саме пристроями вони користуються, можливість комфортного перегляду сайту.

(Based on: webstudio2u.net)

### Extended Reading

18. a) Read and translate the text.

#### **The Hidden Cost of Software Piracy in the Manufacturing Industry**

*Software piracy*, or the use of software not legitimately paid for and used according to *license terms*, is a worldwide epidemic. Statistics from the Business Software Alliance show that 42 percent of software installed globally is not properly licensed, resulting in lost revenue of over \$63 billion.

While software vendors are the front line victims in this growing epidemic, the manufacturing industry is widely impacted as well. A 2014 study by the National Association of Manufacturers (NAM) found that software piracy adversely affects U.S. manufacturers who rely on software and technology to remain innovative and competitive in the global market. Globalization over the past decade has forced U.S. manufacturers to compete more intensely with emerging market companies that engage in software theft. According to the study, between 2002 and 2012 the manufacturing sector lost \$239.9 billion in revenue and over 42,000 jobs due to global piracy. This, in turn, has affected the entire U.S. economy through jobs, revenue and GDP, which was decreased by \$69.6 billion.

Software is typically sold as a license that gives the purchaser the right to install and use the software with specific rights such as number of computers or users. *Cracking* is the modification of software to remove or disable *copy protection* so the software can be used without purchasing a license, or such that it can be installed on multiple computers. Users of pirated software can fall into four general categories: hard-core pirates, soft pirates, victims, and rogue companies.

The *hard-core pirates* are 'anarchists' who believe all software should be free. They can include the hackers who actually break the protection or just users who evade the authorities through the "*darknet*." *Soft pirates* are those who find free or low-cost versions of software online. While they may suspect it's not legitimate, they rationalize

buying it anyway. These versions are dangerous as they are not only illegal, but are also sometimes infected with malware or spyware.

*Piracy victims* truly do not even realize their software is counterfeit. Sometimes these users are simply not aware of who installed the software, or are just not familiar with terms of the license agreements. Pirated software is sometimes pre-installed or sold to victims by a dishonest distributor or re-seller. *Rogue companies* are organizations that rely on pirated software as a competitive advantage in the market. Rogue companies exist in all regions and can be very small start-ups or large multinational corporations. Many are based in Asia, the Middle East and Eastern Europe, although they can also include companies in the USA and Western Europe, though it is rarer. Rogue companies have a deliberate, premeditated policy to utilize counterfeit software as a competitive advantage in the market and they will fight hard to avoid detection and prosecution in the courts. This approach is quite prevalent in China, where, according to the BSA, approximately 90 percent of the software in use is counterfeit.

License management solutions exist that in theory make sure only legally purchased software is deployed on systems. However, the reality is these systems are easily circumvented and cracked licenses are readily available for anything and everything on the market.

Over the past decades, large software vendors have begun to fight back. Traditional approaches may include site audits, search warrants to inspect and confiscate computers with stolen software, and costly litigation for copyright infringement. While effective, these approaches are disruptive, expensive, and typically only used by the largest software vendors like Oracle, Microsoft and SAP. Small and mid-size software companies simply lack the resources, legal expertise and hard evidence. While many companies employ license management solutions, simply knowing your software has been hacked is only half the battle. You must have proof in order to go after offenders and either persuade them to become compliant or in some cases resort to legal measures.

There have been some key successes recently in prosecuting software piracy in manufacturing related industries and recovering lost revenues. In a Louisiana lawsuit, Mercedes Benz sued an auto-parts company that sold more than \$17 million of stolen Mercedes Benz diagnostic software to independent repair shops, so they could bypass the Mercedes Benz dealer network, which makes more money on servicing its cars more than it does on sales. Mercedes succeeded in shutting the auto-parts company down and protecting its dealers.

(Based on: <http://www.mbtmag.com>)

*b) Translate the words in italics into Ukrainian. Explain their meaning.*

*c) Write a short summary of the texts.*

#### **List of words and word combinations to Unit 1**

<b>English</b>	<b>Ukrainian</b>
application/app desktop app mobile app mobile web app	

productivity app web app	
bloatware	
copy protection	
cracking	
darknet	
freeware	
installing	
license terms	
OEM	
preinstalled	
product activation	
responsive design	
scaled-down version	
screen orientation	
shareware	
software custom software open source software public-domain software retail software software piracy software registration	
subscription fee	
to configure	
to register	
to submit	
trial	
update automatic update	
utility/tool	

## Unit 2

### Productivity Applications

#### Pre-Reading Activity

*1. Match the parts of the sentences. Translate into Ukrainian.*

1.	Note taking software...	a.	allows users to create and manipulate documents containing mostly text and sometimes graphics
2.	Document management software...	b.	provides a means for sharing, distributing, and searching through documents by converting them into a format that can be viewed by any user.
3.	Word processing software...	c.	enables users to enter typed text, handwritten comments, drawings, sketches, photos, and links anywhere on a page and then save the page as part of a notebook
4.	Legal software...	d.	helps you organize your calendar, keep track of contacts, and share this information with other users
5.	Spreadsheet software...	e.	allows users to create visual aids for presentations to communicate ideas, messages, and other information to a group.
6.	Accounting software...	f.	assists in the preparation of legal documents and provides legal information to individuals, families, and small businesses
7.	Calendar and contact management software...	g.	helps businesses of all sizes record and report their financial transactions.
8.	Project management software...	h.	allows users to create, access, and manage a database.
9.	Presentation software...	i.	allows a user to plan, schedule, track, and analyze the events, resources, and costs of a project.
10.	Database software...	j.	allows users to organize data in columns and rows and perform calculations on the data.

*2. Read and translate the text using the dictionary.*

**Productivity applications** can assist you in becoming more effective and efficient while performing daily activities at work, school, and home. Productivity applications include word processing, presentation, spreadsheet, database, note taking, calendar and contact management, project management, accounting, personal finance, legal, document management, etc. Many have a **desktop version** and a corresponding **mobile version** adapted for smaller screen sizes and/or touch screens.

With productivity applications, users often create, edit, format, save, and distribute projects. Projects include documents, presentations, spreadsheets, notes, calendars, contact lists, budgets, and more. When you **create** a project, you enter text or numbers, insert images, add contacts, schedule appointments, and perform other tasks using a variety of input methods. To **edit** a project means to make changes to its existing content. Common editing tasks include **inserting** (adding text, images, or other content), **deleting** (removing text, images, or other content), **cutting** (removing content and storing it in a temporary storage location, called a **clipboard**), **copying** (placing content on a clipboard, with the content remaining in the project), and **pasting** (transferring content from a clipboard to a specific location in a project).

When users **format** a project, they change its appearance. Formatting is important because the overall look of a project significantly can affect its capability to communicate information clearly. Examples of formatting tasks are changing the font, font size, and font style. A **font** is a name assigned to a specific design of characters. Cambria and Calibri are examples of fonts. **Font size** indicates the size of the characters in a particular font. Font size is gauged by a measurement system called points. A single point is about 1/72 of an inch in height. A **font style** adds emphasis to a font. **Bold, italic, underline**, and color are examples of font styles.

When you **save** a project, the computer transfers the project from memory to a local storage medium, such as a USB flash drive or hard drive, or cloud storage, so that you can retrieve it later. You can distribute a project as a hard copy or electronically. Sending electronic files via email or posting them for others to view, on websites for example, saves paper and printer supplies. Many users opt for electronic distribution because it contributes to **green computing**.

A **software suite** is a collection of individual related applications available together as a unit. Productivity software suites typically include, at a minimum, word processing, presentation, spreadsheet, and email applications.

**Word processing software**, sometimes called a word processor, is an application that allows users to create and manipulate documents containing mostly text and sometimes graphics. A major advantage of using word processing software is that it enables users to change their written words easily. Word processing software also has many features to make documents look professional and visually appealing. For example, you can change the font, size, and color of characters; apply special effects, such as three-dimensional shadows; use built-in styles to format documents; and organize text in newspaper-style **columns**. Most word processing software allows users to incorporate graphics, such as digital photos and **clip art**, in documents.

You can use word processing software to define the size of the paper on which to print and to specify the **margins**. A feature, called **wordwrap**, allows users to type words in a paragraph continually without pressing the enter key at the end of each line. While you edit a paragraph or change the paragraph margins, the words in the paragraph automatically wrap, or reflow within the **paragraph**. As you type more lines of text than can be displayed on the screen, the top portion of the document moves upward, or scrolls, off the screen.

Word processing software typically includes tools to assist you with the writing process. For example, a **spelling checker** reviews the spelling of individual words, sections of a document, or the entire document. A **grammar checker** detects passive voice, run-on sentences, and grammatical errors. A **format checker** identifies extraneous spaces, **capitalization** errors, and more.



**Spreadsheet software** is an application that allows users to organize data in columns and **rows** and perform calculations on the data. These columns and rows collectively are called a **worksheet**. Most spreadsheet software has basic features to help users create, edit, and format worksheets. A spreadsheet file also is known as a workbook because it can contain thousands of related individual worksheets.

Each worksheet usually can have thousands of columns and rows. One or more letters identify each column, and a number identifies each row. Only a small fraction of these columns and rows are visible on the screen at one time. A **cell** is the intersection of a column and row. The spreadsheet software identifies cells by the column and row in which they are located. For example, the intersection of column B and row 4 is referred to as cell B4. Worksheet cells can contain a number, called a **value**, or formulas. When creating a worksheet, you can enter your own formulas. A **function** is a predefined formula that performs common calculations, such as adding the values in a group of cells or generating a value such as the time or date.

Spreadsheet applications contain many built-in functions. One of the more powerful features of spreadsheet software is its capability to recalculate the rest of the worksheet when data in a cell change. Spreadsheet software's capability of recalculating data also makes it a valuable budgeting, forecasting, and decision-making tool. Another standard feature of spreadsheet software is **charting**, which depicts the data in graphical form, such as **bar charts** or **pie charts (circle charts)**. A visual representation of data through charts often makes it easier for users to see at a glance the relationship among the numbers.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

### Reading Comprehension

#### 3. Choose the correct answer

1. According to the passage, wordwrap allows users ...
  - a) to review the spelling of individual words.
  - b) to incorporate graphics, such as digital photos and clip art.
  - c) to type words in a paragraph continually without pressing the enter key at the end of each line.
  - d) to identify extraneous spaces, capitalization errors, and more.
2. A predefined formula that performs common calculations is ...
  - a) a function.
  - b) a value.
  - c) a workbook.
  - d) a cell.
3. What is not productivity software?
  - a) word processing software.
  - b) computer-aided design.
  - c) spreadsheet software.
  - d) document management software.
4. The word *pie chart* in this text is closest in meaning to
  - a) "a circular statistical graphic which is divided into slices to illustrate numerical proportion";
  - b) "a chart or graph that presents grouped data with rectangular bars";
  - c) "a type of chart which displays information as a series of data points";

- d) “a type of diagram showing the steps as boxes of various kinds”.
5. According to the passage, a spelling checker...
- reviews the spelling of individual words.
  - incorporates graphics, such as digital photos and clip art.
  - types words in a paragraph continually without pressing the enter key at the end of each line.
  - identifies extraneous spaces, capitalization errors, and more.
6. The word *capitalization* in the text is translated into Ukrainian as
- капіталізація.
  - затвердження столиці.
  - отримання вигоди.
  - написання з великої літери.
7. The word *margin* in the text is closest in meaning to
- an amount allowed beyond what is needed.
  - the difference between the cost and the selling price of securities or commodities.
  - a limit in a condition or process, beyond or below which something is no longer possible or acceptable.
  - a space separating text or other elements from the edge of the paper.
8. According to the text, the intersection of a column and row is called...
- a function.
  - a value.
  - a cell.
  - a formula.
9. Which statement renders the following sentence the best:  
*Many users opt for electronic distribution because it contributes to green computing.*
- Many users choose green paper as it contributes to information comprehension.
  - Many users choose eco-friendly ways to distribute information.
  - The only way to distribute information is hard copy.
  - Many users refuse to distribute information electronically because it contributes to green computing.
10. The word combination *clip art* in the text is translated as:
- кліп-арт.
  - зброшуровані репродукції.
  - уривок з мистецького фільму.
  - спосіб вирізання.

4. Find the synonyms to the following words in the text

To adjust, to display, to redact, to embed, to measure, general, to integrate, to erase, typeface, accent, crossing, mistake, to manage, to represent, to choose.

5. Finish the sentences according to the text

1. Productivity applications include... 2. With productivity applications, users often... 3. To edit a project means... 4. When users format a project, they... 5. A font is... 6. When you save a project... 7. A software suite is... 8. A major advantage of using word processing software... 9. As you type more lines of text... 10. One of the more powerful features of spreadsheet software is...

6. Write the short summary of the text.

### Vocabulary Practice

7. Match the words and explanations

1.	to edit	a.	a feature that helps to identify extraneous spaces, capitalization errors
2.	a cell	b.	a feature that helps to add emphasis to a font
3.	spreadsheet software	c.	to make changes to the existing content of a project
4.	software suite	d.	to change the appearance of a project
5.	word processing software	e.	to remove text, images, or other content
6.	format checker	f.	an application that allows users to organize data in columns and rows and perform calculations on the data
7.	to paste	g.	to remove content and store it in a temporary storage location, a clipboard
8.	font size	h.	to place content on a clipboard, with the content remaining in the project
9.	to copy	i.	the intersection of a column and row
10.	to insert	j.	a name assigned to a specific design of characters
11.	to format	k.	application software dedicated to producing information, such as documents, presentations, worksheets, databases, charts, graphs
12.	font style	l.	to add text, images, or other content to a project
13.	to cut	m.	an application that allows users to create and manipulate documents containing mostly text and sometimes graphics.
14.	to delete	n.	to transfer content from a clipboard to a specific location in a project
15.	font	o.	a collection of individual related applications available together as a unit
16.	productivity software	p.	a feature that indicates the size of the characters in a particular font.

8. Find the definition of the following words and learn them by heart.

Desktop version, mobile version, bold, italic, underline, green computing, a column, a row, clip art, a margin, wordwrap, a paragraph, capitalization, spelling checker, grammar checker, clipboard.

9. Translate the following words and word combinations into Ukrainian

To schedule appointment, to delete, grammar checker, to change the font, software suite, to edit a project, to paste, to apply special effects, to format a project, to

incorporate graphics, to scroll, extraneous spaces, margin, to organize data in columns and rows, bold, clip art, bar chart, to insert images, italic, charting.

*10. Translate the following words and word combinations into English*

Адаптувати для екранів менших розмірів, буфер обміну, передавати інформацію, обирати електронне розповсюдження, загальний вигляд проекту, офісне програмне забезпечення, вимірювати, підкреслення, визначити розмір паперу, перевірка орфографії, зелені інформаційні технології, неузгоджене речення, абзац, електронна таблиця, вбудовані стилі, перенос слів, комірка, написання з великої літери, секторна діаграма, перераховувати дані.

*11. Translate the sentences into Ukrainian*

1. With productivity applications, users often create, edit, format, save, and distribute documents, presentations, spreadsheets, notes, calendars, contact lists, budgets, and more. 2. Sending electronic files via email or posting them for others to view, on websites for example, saves paper and printer supplies and contributes to green computing. 3. A software suite is a collection of individual related applications available together as a unit that typically includes word processing, presentation, spreadsheet, and email applications. 4. You can change the font, size, and color of characters; apply special effects, such as three-dimensional shadows; use built-in styles to format documents; and organize text in newspaper-style columns. 5. One of the more powerful features of spreadsheet software is its capability to recalculate the rest of the worksheet when data in a cell changes that makes it a valuable budgeting, forecasting, and decision-making tool

*12. Translate the following sentences into English*

1. Форматування документа – це зміна його зовнішнього вигляду. Параметри форматування можна встановити до і після набору тексту. При форматуванні символів, як правило, задаються параметри шрифту: гарнітура і розмір, написання і тип підкреслення, відстань між літерами. При форматуванні абзаців крім параметрів шрифту задаються параметри розміщення абзацу: вирівнювання і відступи відносно полів сторінки, інтервали між абзацами і між рядками всередині абзацу, а також положення самого абзацу на сторінці. 2. Офісний пакет – це сукупність програм (додатків) з уніфікованим інтерфейсом, які дозволяють виконувати роботу з обробки інформації. Сучасний офісний пакет повинен мати можливості: створення текстових та графічних документів, інтерактивних презентацій; створення і робота з базами даних; організація роботи з електронною поштою, перевірка правопису, можливість логічної розмітки документів, створення графіків та діаграм, наявність шаблонів, обробка математичної інформації.

**Speaking**

*13. a) Read and translate the text*

**Text Editors**

A *text editor* is similar to a word processing program, but it lacks most text formatting features, such as fonts, colors, margins, and paragraphs, and it saves files in a text format. A browser interprets the text file and displays the content using the formatting codes specified in the file. Operating systems typically include a text editor.

For example, Windows users may use Notepad, and MacOS users may use TextEdit as their text editors. Most text editors save files in a text format automatically. Others may require additional steps to save documents in a text format.

A *code editor* is a type of text editor that has additional features to help web developers write the code used to develop websites and applications accurately and efficiently. For example, some code editors can display HTML code in different colors (tags might be displayed in one color, while document content is displayed in another color). In addition, code editors might improve readability of your code by applying appropriate *indenting* and *line spacing* or automatically completing HTML tags or styles as you *type* them. Many web developers opt to download a free or fee-based code editor with these features.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

*b) Answer the questions*

1. What is the difference between a text editor and word processor? 2. Is there any difference between a text editor and code editor? 3. What additional features are there in code editors? 4. What text editors do you know? What code editors have you used? 5. Do you prefer free or fee-based text editors?

*c) Define and translate the italicized words.*

*14. Points for discussion*

1. What productivity applications do you know? Which of them do you usually use? How often? What for?
2. Do you prefer using desktop or mobile version of an application? Which version is more comfortable? Why?
3. What is the standard formatting for official documents?
4. What is spreadsheet software usually used for?
5. Have you ever made a presentation? What software did you use? What features did it have? What features would you like to add?
6. Do you prefer downloading a software suite to installing all the productivity applications separately? Why?

*15. a) Problem Solving*

1. **Synchronization Error.** You added appointments to the calendar on your computer, but these appointments are not synchronizing with your smartphone. Your calendar has synchronized with your smartphone in the past, but it has stopped working without explanation. What are your next steps?

2. **License Agreement.** You are planning to work from home for several days, but you are unsure of whether you are allowed to install a program you use at work on your home computer. What steps will you take to determine whether you are allowed to install the software on your home computer?

3. **Inaccessible Files.** Your company requires you to store your files on a remote server so that you can access the files from any location within the company. When you sign in to another computer using your account, you cannot see your files. What might be causing this?

*b) Topics for research*

1. You are the new manager for a nonprofit amateur soccer league. The league needs productivity software in order to keep track of participant and budget information and to prepare flyers. You prepare information about productivity software options to present to the board of directors.

Use the web to research popular word processing, spreadsheet, and accounting software. Choose three programs from each category. List common features of each, find pricing information, and note any feedback or ratings by users. Which programs would you recommend? Why? Describe the steps involved in developing a project, creating a flyer for the league as an example. Identify possible uses the league may have for the spreadsheet and accounting software. Compile your findings.

2. Desktop and Mobile Version Comparison. Choose three categories of productivity apps, and find an example for each that has both a desktop and mobile version. Try to use both of versions and note the differences in functionality between the desktop and mobile app. Which of them is easier and more comfortable to use? Why?

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

*16\*. Render the following text in English*

Початок створення електронних таблиць було покладено у 1979 році, коли два студенти Ден Бріклін та Боб Френкстон, на комп'ютері Apple II створили першу програму електронних таблиць, яка отримала назву VisiCalc від Visible Calculator (наочний калькулятор). Основна ідея програми полягала у тому, щоб в одні комірки поміщати числа, а в інших задавати закон їх математичного перетворення. Ця ідея визначила цілий клас програм, які тепер прийнято називати табличними процесорами. VisiCalc отримала широке розповсюдження як перша електронна таблиця, проте швидко поступилася своїми позиціями Lotus 1-2-3, а згодом Excel та вільним табличним процесорам StarOffice та OpenOffice.

Табличні процесори являють собою зручний засіб для проведення бухгалтерських і статистичних розрахунків. У кожному пакеті є сотні вбудованих математичних функцій і алгоритмів статистичної обробки даних. Крім того є потужні засоби зв'язку таблиць між собою, створення і редагування баз даних.

Сфери застосування електронних таблиць: економічні розрахунки, інженерні задачі, статистична обробка даних, пошук оптимальних значень параметрів, побудова діаграм, однотипні розрахунки над більшими наборами даних, моделювання складних фінансових ситуацій, бухгалтерські розрахунки, обробка результатів експерименту. Спеціальні засоби дозволяють автоматично отримувати і роздруковувати налагоджувані звіти з використанням десятків різних типів таблиць, графіків, діаграм, додавати до них коментарі і графічні ілюстрації.

(Based on: <http://icc.mdpu.org.ua>)

## **Extended Reading**

*17. a) Read and translate the text.*

### **Productivity Software**

*Presentation software* is an application that allows users to create visual aids for presentations to communicate ideas, messages, and other information to a group.

The presentations can be viewed as slides, sometimes called a *slide show*, that are displayed on a large monitor or on a projection screen from a computer or mobile device. Presentation software typically provides a variety of predefined presentation formats that define complementary colors for *backgrounds*, text, and graphical accents on the slides. This software also provides a variety of *layouts* for each individual slide such as a title slide, a two-column slide, and a slide with clip art, a chart, a table, or a *diagram*. In addition, you can enhance any text, charts, and graphics on a slide with 3-D effects, animation, and other special effects, such as shading, shadows, and textures.

When building a presentation, users can set the slide timing so that the presentation automatically displays the next slide after a preset delay. Presentation software allows you to apply special effects to the *transition* between slides. One slide, for example, might fade away as the next slide appears. Presentation software typically includes a clip gallery that provides images, photos, video clips, and audio clips to enhance presentations. You can view or print a finished presentation in a variety of formats, including a hard copy outline of text from each slide and handouts that show completed slides. Presentation software also incorporates features such as checking spelling, formatting, researching, and creating webpages from existing slide shows.

*Note taking software* is an application that enables users to enter typed text, handwritten comments, drawings, sketches, photos, and links anywhere on a page and then save the page as part of a notebook. Users also can include audio recordings as part of their notes. Some enable users *to sync* their notes to the cloud so that they can access the notes on any computer or mobile device. Many note taking applications also include a calendar feature. Users find note taking software convenient during meetings, class lectures and conferences, and in libraries and other settings that previously required pencil and paper for recording thoughts and discussions.

*Calendar and contact management software* is an application that helps you organize your calendar, keep track of contacts, and share this information with other users, who can view it on their computers and mobile devices. This software provides a way for individuals and workgroups to organize, find, view, and share appointment and contact information easily. Although sometimes available separately, calendar and contact management software often exists as a unit in a single program. Many email applications include calendar and contact management features. Calendar and contact management applications enable you to synchronize information. This means that all of your computers and mobile devices, along with your organization's server or cloud storage, have the latest version of any updated information.

*Project management software* is an application that allows a user to plan, schedule, track, and analyze the events, resources, and costs of a project. Project management software helps users manage project variables, allowing them to complete a project on time and within budget. *Personal finance software* is a simplified accounting application that helps home users and small/home office users balance their checkbooks, pay bills, track personal income and expenses, verify account balances, transfer funds, track investments, and evaluate financial plans. *Legal software* is an application that assists in the preparation of legal documents and provides legal information to individuals, families, and small businesses. Legal software provides standard contracts and documents associated with buying, selling, and renting property; estate planning; marriage and divorce; and preparing a will or living trust.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

*b) Translate the words in italics.*

*c) Write a short summary of the text*

**List of words and word combinations to Unit 2**

<b>English</b>	<b>Ukrainian</b>
background	
bold	
calendar and contact management software	
capitalization	
cell	
charting bar chart pie (circle) chart	
clip art	
clipboard	
code editor	
column	
desktop version	
diagram	
font font size font style	
format checker	
green computing	
indenting	
italic	
layout	
legal software	
line spacing	
margin	
mobile version	
note taking software	
paragraph	
personal finance software	
presentation software	
productivity application	
project management software	
row	
slide show	
software suite	
spelling checker	
spreadsheet software	
text editor	
to delete	



to edit	
to format	
to insert	
to paste	
to save	
to sync	
to type	
transition	
underline	
value	
word processing software	
wordwrap	
worksheet	

## Unit 3

### Databases

#### Pre-Reading Activity

1. Read and translate the following chains of related words. Determine what part of speech they belong to. Guess their meaning.

To retrieve – retrieval; datum – data; database – databases; to vary – variety – variable – varied; to record – record – recorded – recordable; to maintain – maintenance; to modify – modification – modifier – modified – modifiable; valid – invalid – validation – validity; number – numeric; to consist – consistence – consistency – consistent; complete – incomplete – completeness – completed; to relate – related – relational – relationship; dimension – dimensionless – dimensional – multidimensional.

2. Read and translate the text using the dictionary.

A **database** is a collection of data organized in a manner that allows access, retrieval, and use of that data. With a database stored electronically, the computer stores the data on a storage medium, such as a hard drive or optical disc, or on cloud storage. Computers process data in a database to generate information for users. A database at a school, for example, contains data about its students and classes.

IT professionals classify data in a hierarchy. A database contains a group of related data files. A data file contains records, a record contains fields, and a field is composed of one or more characters. In the ASCII coding scheme, each byte represents a single **character**, which can be a number (4), letter (R), blank space (spacebar), punctuation mark (?), or other symbol (&).

A **field** is a combination of one or more related characters or bytes and is the smallest unit of data a user accesses. It contains a specific category of data within a record. A **field name** uniquely identifies each field. When searching for data in a database, you often specify the field name. A database uses a variety of characteristics, such as **field size** (the maximum number of characters a field can contain) and **data type** (the kind of data a field can contain and a way in which the field is used), to define each field.

Each row, called a **record**, contains data about a given item in the database, which is often a person, product, object, or event. A **record** is a group of related fields. For example, a student record includes a set of fields about one student. A **primary key** is a field that uniquely identifies each record in a file. In some files, the primary key consists of multiple fields, called a **composite key**. A **data file**, often simply called a file, is a collection of related records stored on a storage medium. A database includes a group of related data files.

**File maintenance** refers to the procedures that keep data current. It includes adding records to, modifying records in, and deleting records from a file. DBMSs use a variety of techniques to manage deleted or obsolete records. Sometimes, the DBMS removes the record from the file immediately. Other times, the record is **flagged**, or marked, so that the DBMS will not process it again.

**Validation** is the process of comparing data with a set of rules or values to determine if the data meet certain criteria. **Validity checks** reduce data entry errors and thus enhance the data's integrity. If the data fail a validity check, the computer either should not allow the **invalid** data to be stored, or it should display an error message. An **alphabetic check** ensures that users enter only alphabetic data into a field. For

example, data in a First Name field should contain only characters from the alphabet. A **numeric check** ensures that users enter only numeric data into a field. A **range check** determines whether a number is within a specified range. A **consistency check** tests the data in two or more associated fields to ensure that the relationship is logical and their data is in the correct format. A **completeness check** verifies that a required field contains data. For example, it can ensure that a day, month, and year are included in a Birth Date field. A **check digit** is a number(s) or character(s) that is appended to or inserted in a primary key value. A check digit often confirms the accuracy of a primary key value.

Every database and DBMS is based on a specific data model. A **data model** consists of rules and standards that define how the database organizes data. A **relational database** is a database that stores data in tables that consist of rows and columns. In addition to storing data, a relational database also stores **data relationships** (links within the data). Many organizations use relational databases for payroll, general ledger, inventory, order entry, invoicing, and other business-related functions. An **object-oriented database** stores data in **objects** (items that contain data, as well as the actions that read or process the data). Examples of applications appropriate for an object-oriented database include media databases that store images, audio clips, and/or video clips; **groupware** databases that store schedules, calendars, memos, and reports; and CAD (computer-aided design) databases.

A **multidimensional database** stores data in dimensions that allow users to access and analyze any view of the data. One application that uses multidimensional databases is a **data warehouse**, a huge database that stores and manages the data required to analyze historical and current transactions. The database in a data warehouse often is distributed. The data in a **distributed database** exist in many separate locations throughout a network or the Internet. Although the data are accessible through a single server, the physical location of the server on which it is stored is transparent and often unknown, to the user.

**Database software**, often called a **database management system (DBMS)**, is an application that allows users to create, access, and manage a database. Using database software, you can add, change, and delete data in a database; sort and retrieve data from the database; and create forms and reports using the data in the database. DBMSs are available for many sizes and types of computers. Whether designed for a small or large computer, most DBMSs perform common functions. A **data dictionary**, sometimes called a **repository**, contains data about each file in the database and each field in those files. It is used to perform validation checks to maintain the integrity of the data. A DBMS provides several tools that allow users and programs to retrieve and maintain data in the database. To retrieve or select data in a database, you query it. A **query** is a request for specific data from the database. After obtaining the results of a query, database applications can present them on the screen, send them to a printer, or save them in a file.

A DBMS provides a variety of techniques to restore the database to a usable form in case it is damaged or destroyed. Some DBMSs have their own built-in **backup** tools. More complex DBMSs maintain a **log**, a list of activities that modify the contents of the database. A DBMS **recovery utility** uses logs and/or backups, and either a rollforward or a rollback technique, to restore a database when it becomes damaged or destroyed. In a **rollforward (forward recovery)**, the DBMS uses the log to reenter changes made to the database since the last save or backup. In a **rollback (backward**

**recovery)** the DBMS uses the log to undo any changes made to the database during a certain period. The rollback restores the database to its condition prior to the failure.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

**!** Speaking about databases, we should mention the notion of a query language. A **query language** consists of simple, English-like statements that allow users to specify the data they want to display, print, store, update, or delete. **Structured Query Language** (SQL pronounced S-Q-L or sequel) is a popular query language that allows users to manage, update, and retrieve data. SQL has special keywords and rules that users include in SQL statements.

### **Reading Comprehension**

#### *3. Answer the questions*

1. What is a database? What is its function? 2. Define the following terms: character, field, record. 3. What characteristics are used to define a field? 4. What types of keys were mentioned in the text? 5. Outline a database's hierarchy. 6. What is file maintenance? 7. What is validation? 8. What types of check do you know? 9. What is a check digit? 10. What types of databases do you know? Explain the difference between them. 11. What is data warehouse? 12. Define the term "database management system". 13. What is data dictionary? 14. What is a query? 15. What are the ways to restore a database?

#### *4. Mark the statements true or false. Correct the false ones.*

1. A data file contains fields, a field contains records, and a record is composed of one or more characters.
2. In the ASCII coding scheme, each bit represents a single character
3. A field name uniquely identifies the maximum number of characters a field can contain.
4. Validity checks enhance the data's integrity.
5. A consistency check determines whether a number is within a specified range.
6. A data model defines how the database organizes data.
7. A repository contains data about each file in the database and each field in those files.
8. In a rollforward, the DBMS uses the log to undo any changes made to the database during a certain period.
9. A query is a request for specific data from the database.
10. A log is a list of activities that modify the contents of the database.

#### *5. Find the words in the text according to the meaning*

- 1) the process of accessing information from memory or other storage devices;
- 2) any technology (including devices and materials) used to place and keep information;
- 3) a system of things arranged in a graded order;
- 4) unity, wholeness;
- 5) easily obtained;
- 6) the first in importance, degree, rank, etc.
- 7) to change in form or character.
- 8) to alter;
- 9) no longer in use;
- 10) to prove to be true, to confirm;
- 10) to add as a supplement, to attach.

#### *6. Write the short summary of the text.*

## Vocabulary Practice

### 7. Translate the following words and word combinations into Ukrainian

To reduce data entry errors, character, data file, validation, to restore the database, data type, flagged, alphabetic check, data relationships, file maintenance, multidimensional database, rollforward (forward recovery), built-in backup tools, hierarchy, composite key, invalid data, completeness check, object-oriented database, distributed database, a log, a query language.

### 8. Translate the following words and word combinations into English

Первинний ключ; перевірка на відповідність; реляційна БД; сховище даних; утиліта відновлення; числова перевірка; поле; відповідати певним критеріям; система керування БД; словник даних; запис; відмінити будь-які зміни; контрольна цифра; контроль діапазонів; запит; БД колективного користування; відновлення попереднього стану файлу; зберігати цілісність даних; збирати та фільтрувати дані; класифікувати дані.

### 9. Translate the following sentences into Ukrainian

1. Validity checks reduce data entry errors and thus enhance the data's integrity. There are different types of checks, for example, an alphabetic check ensures that users enter only alphabetic data into a field. Unlike the alphabetic check, a numeric check ensures that users enter only numeric data into a field. 2. A data warehouse is a huge database that stores and manages the data required to analyze historical and current transactions. It uses a multidimensional database, which stores data in dimensions allowing users to access and analyze any view of the data. 3. A log is a list of activities that modify the contents of the database and is used to undo any changes made to the database during a certain period. 4. A relational database is a database that stores data as well as data relationships. 5. DBMSs are available for many sizes and types of computers, however, most DBMSs perform common functions: you can add, change, and delete data in a database; sort and retrieve data from the database; and create forms and reports using the data in the database.

### 10. Match the words and explanations

1.	field	a.	a collection of data organized in a manner that allows access, retrieval, and use of that data
2.	data dictionary	b.	a type of validity checks that determines whether a number is within a specified range.
3.	record	c.	a type of validity checks that verifies that a required field contains data.
4.	database	d.	a type of recovery when the DBMS uses the log to undo any changes made to the database during a certain period
5.	rollforward (forward recovery)	e.	a database that stores data in dimensions that allow users to access and analyze any view of the data
6.	distributed database	f.	a combination of one or more related characters or bytes and is the smallest

			unit of data a user accesses.
7.	range check	g.	a database that stores data in objects
8.	log	h.	a type of validity check that ensures that users enter only numeric data into a field
9.	rollback (backward recovery)	i.	a list of activities that modify the contents of the database
10.	multidimensional database	j.	the procedures that keep data current
11.	DBMS	k.	a repository that contains data about each file in the database and each field in those files
12.	completeness check	l.	a group of related fields
13.	data warehouse	m.	a type of DB recovery when the DBMS uses the log to reenter changes made to the database since the last save or backup
14.	consistency check	n.	a database that exists in many separate locations throughout a network or the Internet
15.	object-oriented database	o.	a type of validity check that tests the data in two or more associated fields to ensure that the relationship is logical and their data is in the correct format
16.	numeric check	p.	a request for specific data from the database
17.	file maintenance	q.	a field that uniquely identifies each record in a file
18.	query	r.	a database that stores data in tables that consist of rows and columns and data relationships
19.	primary key	s.	a huge database that stores and manages the data required to analyze historical and current transactions
20.	relational database	t.	an application that allows users to create, access, and manage a database

*11. Fill in the prepositions where necessary.*

1. Computers process \_\_\_ a database to generate information \_\_\_ users. 2. A check digit is a number or character that is appended \_\_\_ or inserted \_\_\_ a primary key \_\_\_ value. 3. After obtaining the results \_\_\_ a query, database applications can present them \_\_\_ the screen, send them \_\_\_ a printer, or save them \_\_\_ a file. 4. An alphabetic check ensures \_\_\_ that users enter only alphabetic data \_\_\_ a field. 5. A relational database is a database that stores data \_\_\_ tables that consist \_\_\_ rows and columns. 6. When searching \_\_\_ data \_\_\_ a database, you often specify \_\_\_ the field name. 7. The data \_\_\_ a distributed database exist \_\_\_ many separate locations \_\_\_ a network or \_\_\_ the Internet. 8. The data \_\_\_ a primary key are unique \_\_\_ a specific record. 9. File maintenance includes adding records \_\_\_, modifying records \_\_\_, and deleting records

\_\_\_ a file. 10. The rollback restores \_\_\_ the database \_\_\_ its condition prior \_\_\_ the failure.

### *12. Translate the following sentences into English*

1. База даних – це упорядкований набір логічно взаємопов'язаних даних, що використовується спільно, та призначений для задоволення інформаційних потреб користувачів. 2. Система управління базами даних (СУБД) – це комплекс програмних і мовних засобів, необхідних для створення баз даних, підтримання їх в актуальному стані та організації пошуку в них необхідної інформації. 3. Останнім часом утворилися нові важливі області застосування баз даних, і кожна з них представляє принципово нове середовище, до якого необхідно адаптувати технології СУБД. Ці області отримали на ринку назви інтелектуального аналізу даних (*data mining*), сховищ даних та репозитаріїв даних. 4. Програми, що відносяться до категорії репозитаріїв, характеризуються тим, що вони призначені для зберігання і управління як даними, так і метаданими, тобто інформацією про структуру даних. Приклади репозитаріїв – це бази даних для підтримки комп'ютерного проектування, а також системи управління документами. 5. У сховищі даних накопичуються дані з однієї або більше баз даних. Існує безліч потенційних застосувань, а також підходів до організації сховищ даних. Наприклад, великий магазин може підтримувати сховище даних на основі транзакційних даних про касові операції для цілей видобутку даних.

(Based on: lib.mdpu.org.ua)

### **Speaking**

#### *13. Points for discussion.*

1. Have you ever used databases? What did you use it for?
2. Define the terms, database and database software. Identify the role of a file, record, and field in database hierarchy.
3. List possible uses of different types of databases.
4. What is data mining?
5. What problems may arise from individuals or companies failing to properly secure and maintain their databases?

#### *14. Read the text and answer the questions*

##### **Does the Use of Criminal Databases Help or Hinder Investigations?**

On television, detectives use databases to quickly compile a list of suspects for a crime. In these depictions, the list is complete, accurate, and leads to a speedy conviction. In reality, criminal databases are a helpful tool in solving crimes, but they are not without limitations. As with any database, the value depends on the quality of its information. If a criminal database contains data that is incomplete, inaccurate, or outdated, is it useful for law enforcement? Many criminal databases exist at the county, state, and federal levels. Some information is mandatory, but other contributions to databases are voluntary or require only periodic updates. States' departments of correction record and share arrest records and jail time, but county or local jail records may not be included. Some courts and law enforcement use these databases for background checks to narrow a list of suspects or when determining sentencing. Others allow the use during an investigation, but findings are not admissible in court.

States decide which information to make public and how to distribute the

information. Often, states release criminals' names, photos, addresses, and information about the crime on a searchable, public website. Some states share information with one another regarding almost all criminals, and a few allow citizens to search for convicted criminals by name. Privacy experts feel that publishing this information makes it impossible for an offender who has served time to lead a normal life. Proponents state that the public's right to know outweighs the rights of privacy of those convicted.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

1. Are criminal databases useful in law enforcement? Why or why not?
2. Should information from criminal databases be admissible in court? Why or why not?
3. What information should states provide to the public regarding people convicted of crimes? Why?

### 15. Web Databases

The web offers information about jobs, travel destinations, television programming, photos, movies, videos, local and national weather, sporting events, and legislative information. Much of this and other information exists in databases that are stored on or are accessible through the web. Some web databases are *collaborative databases*, where users store and share photos, videos, recordings, and other personal media with other registered users. A web database for an organization usually resides on a database server. A *database server* is a computer that stores and provides access to a database.

*Classify the following information that can be found in web databases according to the categories*

Guest star on your favorite television program; online booking; education web database services; information about the government; multiple vendors of travelling services; curricula, worksheets, and lesson plans; video or audio clips; information about current laws; desired locations and dates of a trip; the right size and color of a shirt; criminal databases; student contact information and grades; deals on air travel, car rentals, hotel rooms, and vacation; travel history; featured products; playlists; notifications about upcoming travel deals; casting notices; photos of items to sell; inventory; online courses; bargains; changes or updates to your travel plans; the lowest price of goods; costs, safety concerns, and user reviews; artist profiles.

Government	Entertainment	Travel	Shopping	Education

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)



*16\*. a) Problem Solving*

1. **Database Connection Error.** While interacting with a web app, an error is displayed informing you that the web app is not able to connect to the database. What might be causing this?

2. **Data Entry Issues.** You are in charge of adding student information to your school's database. When you attempt to enter the street address for one of the students, the entire street name does not fit in the text box. What are your next steps?

3. **Incorrect Postal Codes.** Your company's database stores information about its customers, including their names, addresses, phone numbers, email addresses, and order history. While reviewing the database to ensure data integrity, you notice that some of the postal codes, which should be five digits, are only four digits. What might be wrong?

*b) Topics for research*

1. You are the new manager for a nonprofit amateur soccer league. The league uses a database to store information about its players, teams, schedules, and statistics. The league's website uses information stored in the database to display team rosters, league standings, and events. The board of directors has asked you to investigate how the league should secure its database.

Prepare information about securing a database. What risks exist for databases? Who should determine the security measures to take? What should you include in the database security policy? Include recommendations for backing up data, validation, maintenance, and assigning different access levels to employees, coaches, and players. Is the league responsible for security breaches that put players' personal data at risk? Why or why not? Compile your findings.

2. **Spreadsheets versus Databases.** Some individuals and small organizations prefer using spreadsheets instead of databases. People who use spreadsheets might argue that similar to databases, spreadsheets have columns and rows, and you can keep track of different sets of data in individual worksheets. In addition, some find it easier to install, use, and maintain spreadsheet software than database software.

Prepare information aimed toward individuals who prefer spreadsheets to databases. Include reasons why it is not advisable to store large amounts of data in spreadsheets, as well as the reporting and querying capabilities of databases. Explain benefits for using a database for collaborating and sharing information among departments in a business

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

*17\*. Render the following text in English*

Система спостереження Землі (EOS - Earth Observing System) являє собою безліч супутників, які запускає NASA починаючи з 1998 р. Їх призначення - збір інформації, необхідної для дослідників, зайнятих вивченням довгострокових тенденцій стану атмосфери, океанів, земної поверхні. Супутники поставляють інформацію в обсязі 1/3 Пбайт (Petabyte - 10<sup>15</sup> байт) в рік. Передбачається, що ці дані будуть інтегруватися з уже існуючою інформацією, а також з даними з інших джерел (іноземні супутники, наземні станції спостереження) і накопичуватися в базі даних EOSDIS (EOS Data and Information System) небачених раніше масштабів.

EOSDIS призначена для інформаційного обслуговування, як фахівців, так і неспеціалістів. Передбачається, наприклад, що доступ до неї матимуть навіть школярі, які зможуть знайомитися з моделями формування погодних умов, з впливом вулканічних явищ тощо.

На даний час існує ряд проєктів, загальна мета яких - надати потенційним споживачам оперативний доступ до каталогів товарів з наступним електронним оформленням покупок. Як і проєкт EOSDIS, система електронної комерції передбачає мережеву взаємодію величезного числа учасників торгових угод. Різниця полягає у тому, що в EOSDIS – це один головний постачальник інформації і безліч її споживачів, а торгова система має на увазі наявність безлічі постачальників і безлічі споживачів. Крім того, учасники в даному випадку можуть відчувати певну взаємну недовіру і, можливо, мають свої приватні закриті інформаційні системи. Проте система електронної комерції повинна мати високонадійні засоби розподіленої автентифікації.

(Based on: lib.mdpu.org.ua)

### Extended Reading

18. a) Read and translate the text.

#### Big Data

Recent technology trends have resulted in activities that generate large quantities of data. These trends include the growth of online commerce, social, and government applications; increased use of mobile devices; emergence of the *Internet of Things*, development of cloud computing and availability of Internet connectivity through wired and wireless networks.

Online business transactions, posts on social networks, government agencies, media and text messages from tablets and smartphones, and automated sensors produce data that is stored in databases located and stored on servers distributed across the Internet. *Big Data* refer to large-scale data sets that require advanced technologies beyond the capabilities of typical database software to gather, store, process, retrieve, or analyze.

Analysts often refer to the three V's when describing characteristics of Big Data: volume, velocity, and variety. Volume refers to the amount of data that individuals and organizations generate. As data formats expand from text to images, files, audio, and video, it is common to need storage for multiple *terabytes* of data. In the future, some organizations may require storage for *petabytes* and *exabytes* of data.

Velocity refers to the rate at which data are processed. In one day, for example, Google performs more than 6 billion searches, Facebook records more than 4.5 billion "likes," Twitter receives more than 500 million Tweets, and temperature and barometric sensors located across the world gather and transmit more than 200 million observations. In one minute, YouTube processes 100 hours of uploaded video. In one second, Amazon processes more than 400 transactions from customers during the holiday shopping period.

Variety refers to the different formats to represent or store data for use by humans and computer applications. Some data, such as census records, stock values, and corporate sales, are structured, meaning the information can be organized neatly in tables. Unstructured data generally are more complex and may include items such as Tweets, media files, Wikipedia articles, and fingerprints. Some analysts have expanded the three V's to include veracity (how accurate the data are), value (how organizations

use their data), and viability (whether organizations can make predictions based on these data).

One way businesses generate Big Data is by capturing customer behaviors. For example, in addition to storing information about a customer's purchase, some shopping websites also gather data about how much time customers spend on a webpage, how many items they view before making a purchase, and which pages on the company's website that customers visited, in order to create a more customized experience. Amazon and other retailers compile data from customer purchases in process called *collaborative filtering* to recommend related products. For example, Amazon recommends that customers who purchase a digital camera might also want to purchase a storage card or a camera case.

Government agencies generate large amounts of data in real time from satellite images, social media posts, and media. By analyzing this data, they can monitor transportation systems, dispatch first responders in emergencies, and provide consumers with information to make informed choices about health care, schools, and community services. Temperature and barometric sensors, wearable devices, and buses and trains equipped with GPS capability all transmit data over the Internet to be used in a variety of web and mobile applications.

*Data visualization* is the process of presenting data graphically as charts, maps, or other *pictorial* formats in order to understand the resulting information easily. As the size of databases grows, data visualizations make it possible to interpret complex data sets, find relationships among data items, and discover patterns that can provide useful information. For example, the "Racial Dot Map" is a visualization that displays one dot per person in the United States. Each dot is colored by ethnicity.

Big data is changing the way people within organizations work together. It is creating a culture in which business and IT leaders must join forces to realize value from all data. Insights from big data can enable all employees to make better decisions – deepening customer engagement, optimizing operations, preventing threats and fraud, and capitalizing on new sources of revenue.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016, [www.ibm.com](http://www.ibm.com))

*b) Translate the words in italics.*

*c) Write a short summary of the text*

### List of words and word combinations to Unit 3

English	Ukrainian
backup	
Big Data	
character	
check digit	
collaborative filtering	
data dictionary (repository)	
data file	
data mining	
data model	
data relationships	

data type	
data visualization	
data warehouse	
database collaborative database relational database object-oriented database multidimensional database distributed database	
database server	
field field name field size	
file maintenance	
flagged	
groupware	
invalid	
log	
pictorial	
primary key composite key	
query	
query language	
record	
recovery utility	
rollback (backward recovery)	
rollforward (forward recovery)	
SQL	
validation	
validity check alphabetic check numeric check range check consistency check completeness check	

## Unit 4

### Graphics and Media Applications

#### Pre-Reading Activity

1. Give the Ukrainian equivalents of the following English words. Take into account the explanation.

to rotate – to turn around on an axis or center	
to customize – to make or alter to individual or personal specifications	
home design/landscaping software – an application that assists users with the design, remodeling, or improvement of a home, deck, or landscape	
letterhead – the heading at the top of a sheet consisting of a name and an address, and a logo; the whole sheet imprinted with such a heading	
logo – a graphic representation or symbol of a company name, trademark, abbreviation, etc., often uniquely designed for ready recognition	
eyedropper – a tool found in many image editing programs that let you click on a point in the image to identify and select its color	
template – a file that has been created with an overall layout and format to be used for a group of documents or a generic document	
to retouch – to make small changes to (something, such as a photograph) in order to improve the way it looks	
to color-correct – to alter the shades, hues, channels, contrast and amounts of separate colors in an image	
to stream – to listen to or watch sound or video on a computer directly from the Internet rather than downloading it and saving it first	

2. Read and translate the text using the dictionary.

In addition to productivity applications, many people work with software designed specifically for their field of work. Power users, such as engineers, architects, desktop publishers, and graphic artists, often use sophisticated software that allows them to work with graphics and media. Many of these applications incorporate user-friendly interfaces or scaled-down versions, making it possible for the home and small business users also to create projects using these types of programs. Graphics and

media applications include computer-aided design, desktop publishing, paint/image editing, photo editing and photo management, video and audio editing, multimedia and website authoring, media players, and disc burning.

**Computer-aided design (CAD)** software is a type of application that assists professionals and designers in creating engineering, architectural, and scientific designs and models. For example, engineers create design plans for vehicles and security systems. Architects design building structures and floor plans. Scientists design drawings of molecular structures. Three-dimensional CAD programs allow designers to **rotate** designs of 3-D objects to view them from any angle. Home and small business users work with less sophisticated design and modeling software. These applications usually contain thousands of predrawn plans that users can **customize** to meet their needs. For example, **home design/landscaping software** is an application that assists users with the design, remodeling, or improvement of a home, deck, or landscape.

**Desktop publishing software (DTP software)** is an application that enables designers to create sophisticated publications that contain text, graphics, and many colors. Professional DTP software is ideal for the production of high-quality color projects such as textbooks, corporate newsletters, marketing literature, product catalogs, and annual reports. Designers and graphic artists can print finished publications on a color printer, take them to a professional printer, or post them on the web in a format that can be viewed by those without DTP software. Home and small business users create newsletters, brochures, flyers, advertisements, postcards, greeting cards, letterhead, business cards, banners, calendars, logos, and web-pages using personal DTP software. Although many word processing programs include DTP features, home and small business users often prefer to create DTP projects using DTP software because of its enhanced features.

Graphic artists, multimedia professionals, technical illustrators, and desktop publishers use paint software and image editing software to create and modify graphics, such as those used in DTP projects and web-pages. **Paint software**, also called **illustration software**, is an application that allows users to draw pictures, shapes, and other graphics with various on-screen tools, such as a pen, brush, eyedropper, and paint bucket. **Image editing software** is an application that provides the capabilities of paint software and also includes the capability to enhance and modify existing photos and images. Modifications can include **adjusting** or enhancing image colors, **brightness** (lightness or darkness in a photo), **sharpness** (crispness of objects in a photo), or **contrast** (the difference in appearance between dark and light areas of a photo), adding special effects such as shadows and glows, creating animations, and **image stitching** (combining multiple images into a larger image). Paint/image editing software for the home or small business user provides an easy-to-use interface; includes various simplified tools that allow you to draw pictures, shapes, and other images; and provides the capability of modifying existing graphics and photos. These products also include many **templates** to assist you in adding images to projects.

**Photo editing software** is a type of image editing software that allows users to edit and customize digital photos. With photo editing software, users can **retouch** photos, **crop** images, remove red-eye, erase blemishes, restore aged photos, add special effects, enhance image quality, change image shapes, **color-correct** images, straighten images, remove or rearrange objects in a photo, add layers, and more. Many applications also provide a means for creating digital photo albums. With **photo**

**management software**, you can view, organize, sort, catalog, print, and share digital photos. Some photo editing software includes photo management functionality.

**Video editing software** is an application that allows professionals to modify a segment of a video, called a **clip**. For example, users can reduce the length of a video clip, reorder a series of clips, or add special effects such as words that move across the screen. Video editing software typically includes audio editing capabilities. **Audio editing software** is an application that enables users to modify audio clips, produce studio-quality soundtracks, and add audio to video clips. Most television shows and movies are created or enhanced using video and audio editing software. Many home users work with easy-to-use video and audio editing software, which is much simpler to use than its professional counterpart.

**Multimedia authoring software** allows users to combine text, graphics, audio, video, and animation in an **interactive** application. With this software, users control the placement of text and images and the duration of sounds, video, and animation. Once created, multimedia presentations often take the form of interactive computer-based presentations or web-based presentations designed to facilitate learning, demonstrate product functionality, and elicit direct user participation. Training centers, educational institutions, and online magazine publishers use multimedia authoring software to develop interactive applications. **Website authoring software** helps users of all skill levels create web-pages that include graphics, video, audio, animation, special effects with interactive content, and blog posts.

A **media player** is a program that allows you to view images and animations, listen to audio, and watch video files on your computer or mobile device. Media players also may enable you to organize media files by genre, artist, or other category; create playlists; **convert** files to different formats; connect to and purchase media from an online media store or market-place; **stream** radio stations' broadcasting over the Internet; download podcasts; burn audio CDs; and transfer media to portable media players.

**Disc burning software** writes text, graphics, audio, and video files on a recordable or rewritable disc. This software enables home users easily to back up contents of their hard drive on an optical disc (CD/DVD) and make duplicates of uncopyrighted music or movies. Disc burning software usually also includes photo editing, audio editing, and video editing capabilities.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

## Reading Comprehension

### 3. Choose the correct answer

1. According to the passage, graphics and media applications do not include ...
  - a) media player.
  - b) photo editing software.
  - c) desktop publishing software.
  - d) word processing software.
2. ... allows users to combine text, graphics, audio, video, and animation in an interactive application
  - a) multimedia authoring software.
  - b) video editing software.
  - c) photo management application.

- d) disc burning software.
3. Video editing software is an application that allows to modify a segment of a video, called a ...
- a) clip.
  - b) fragment.
  - c) passage.
  - d) film.
4. The word *to convert* in this text is closest in meaning to
- a) “to cause to adopt a different opinion”;
  - b) “to change from one format to another”;
  - c) “to turn to another use or purpose”;
  - d) “to change in character”.
5. According to the passage, a media player...
- a) writes text, graphics, audio, and video files on a recordable or rewritable disc.
  - b) helps users of all skill levels create web-pages.
  - c) allows you to view images and animations, listen to audio, and watch video.
  - d) enables users to modify audio clips, produce studio-quality soundtracks, and add audio to video clips.
6. The word *template* in the text is translated into Ukrainian as
- a) шаблон.
  - b) опорна плита.
  - c) калъка.
  - d) план-габарит.
7. The word *clip* in the text is closest in meaning to
- a) the act of clipping.
  - b) any of various devices for holding things together; a clasp or fastener.
  - c) a piece of jewellery that fastens with a clasp or clip, such as an earring or brooch.
  - d) a short extract from a movie or television program.
8. According to the text, the difference in appearance between dark and light areas of a photo is called...
- a) contrast.
  - b) brightness.
  - c) hue.
  - d) sharpness.
9. Which statement is not correct:
- a) Image stitching is combining multiple images into a larger image.
  - b) Graphics and media applications include CAD, DTP, paint/image editing and project management software.
  - c) 3D CAD programs allow to rotate designs of 3-D objects to view them from any angle.
  - d) Media players enable you to organize media files by genre, artist, or other category.
10. The word *crop* in the text is translated as:
- a) збирати урожай.
  - b) садити.
  - c) обрізати.
  - d) виникати.



*4. Find the synonyms to the following words in the text*

1) variant; 2) machine; 3) to revolve; 4) advanced; 4) to personalize; 4) label; 5) different; 6) to improve; 7) highlight; 8) pattern; 9) to simplify; 10) copy.

*5. Finish the sentences according to the text*

1. Three-dimensional CAD programs allow... 2. Professional DTP software is ideal for... 3. Modifications can include... 4. Image editing software for the home or small business user provides ... 5. With photo editing software, users can... 6. Video editing software typically includes... 7. Multimedia authoring software allows... 8. Website authoring software helps users... 9. Media players also may enable... 10. Disc burning software writes...

*6. Write the short summary of the text.*

**Vocabulary Practice**

*7. Translate the following words and word combinations into Ukrainian*

User-friendly interfaces; floor plan; predrawn plan; high-quality color project; to rotate designs of 3-D objects; home design/landscaping software; brightness; multimedia authoring software; to erase blemishes; brush, eyedropper, and paint bucket; shadows and glows; photo management software; media player; disc burning software; to stream radio stations' broadcasting; desktop publishing software, to elicit direct user participation, photo editing software, to retouch, to make duplicates

*8. Translate the following words and word combinations into English*

Система автоматизованого проектування; щорічні звіти; налаштувати; різкість; підлаштувати, щоб відповідати вимогам; контраст; графічний редактор/програма малювання; інтерфейс, легкий для користування; зшивання зображень; шаблон; редактор зображень; обрізати зображення; коректувати колір; відновлювати старі фотографії; редактор відео; кліп; ПЗ для авторської розробки веб-сайтів; інтерактивний додаток; конвертувати файли; полегшувати навчання.

*9. Translate the following sentences into Ukrainian*

1. Multimedia presentations often take the form of interactive computer-based presentations or web-based presentations designed to facilitate learning, demonstrate product functionality, and elicit direct user participation. 2. A media player is a program that allows you to view images and animations, listen to audio, and watch video files, as well as enables you to organize media files by genre, artist, or other category; create playlists and convert files to different formats. 3. Graphics and media applications include computer-aided design, desktop publishing, paint/image editing, photo editing and photo management, video and audio editing, multimedia and website authoring, media players, and disc burning. 4. With photo editing software, users can retouch photos, crop images, remove red-eye, erase blemishes, restore aged photos, add special effects, enhance image quality, change image shapes, color-correct images, straighten images, remove or rearrange objects in a photo, add layers. 5. Image editing software for the home or small business user provides an easy-to-use interface; includes various simplified tools that allow you to draw pictures, shapes, and other images; and provides the capability of modifying existing graphics and photos.

*10. Find the definition of the following terms and learn them by heart*

Computer-aided design, home design/landscaping software, desktop publishing software, paint software, brightness, image stitching, template, image editing software, sharpness photo management software, contrast, video editing software, website authoring software, media player, audio editing software, multimedia authoring software, disc burning software.

*11. Fill in the gaps with the words from a box*

to rotate, high-quality, logo, brightness, contrast, image stitching, to crop, clip, interactive, to convert
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1. We use only the \_\_\_\_\_ materials so you can feel comfortable. 2. Hue, saturation, and \_\_\_\_\_ are aspects of color in the red, green, and blue scheme. 3. Simple, free online web-based tools are designed to quickly \_\_\_\_\_ or slice parts of animated gifs. 4. In computer science, \_\_\_\_\_ computing refers to software, which accepts input from humans as it runs. 5. \_\_\_\_\_ the sheet of paper 90 degrees. 6. With the spread of Internet global accessing, video \_\_\_\_\_ have become very popular online. 7. \_\_\_\_\_ sensitivity describes the ability of the visual system to distinguish bright and dim components of a static image. 8. Office applications, when employed to \_\_\_\_\_ between office file formats, use their internal, default file format as a pivot. 9. Digital \_\_\_\_\_ for mosaics and panoramas enable the photographer to create photos with higher resolution and a wider angle of view than their digital camera or lenses would ordinarily allow. 10. In the 60's, McDonald's wanted to change the \_\_\_\_\_ but their design consultant and psychologist Louis Cheskin insisted that they left the golden arches.

*12. Translate the following sentences into English*

1. Знання основ автоматизації проектування та вміння працювати із системами автоматизованого проектування необхідне практично будь-якому інженеру-розробнику. 2. Поява перших програм для автоматизації проектування відбулася на початку 60-х, коли були створені програми для розв'язування задач будівельної механіки, аналізу електронних схем, проектування друкованих плат. 3. Комп'ютерна верстка – це використання персонального комп'ютера та спеціального програмного забезпечення для створення макету видання з метою подальшого друку в типографії або на принтері. 4. До складу більшості сучасних операційних систем входять програми, що дають змогу відтворювати звукові файли та переглядати відео. 5. Відеоредактор – це програма, яка містить набір інструментів, за допомогою яких опрацюють відеофайли на комп'ютері. Різні відеоредактори мають різний набір вказівок та інструментів для опрацювання відеофайлів.

## Speaking

### 13. Points for discussion.

1. Have you ever used photo/video/audio editing software? What did you use it for? What result did you get?
2. What photo/video/audio editing applications do you know? Which applications have you used? Which one is better? Why?
3. What types of tools can you find in an image editing application? What are their functions?
4. Do you use a default media player? Which similar applications do you know? Are they better? Why?
5. What disc burning applications do you know? Are they popular now? Why (not)?

### 14. Read the text and answer the questions. Translate the words in italics.

#### Is It Ethical to Alter Digital Photos?

Many commercial artists, photojournalists, and creators of magazine covers and billboards use photo editing software to *alter* digital photos. Artists use photo editing software to *enhance* digital photos by changing colors, adding or removing objects, and more. When does photo manipulation become unethical?

In several high-profile cases, news sources published intentionally altered photos that misrepresented the facts, in one case publishing photos of an aging world leader edited to remove his hearing aid. One school received criticism when it altered necklines on yearbook photos to be more modest. Real estate agents on occasion have altered photos of homes for online listings or print brochures. Also making news are celebrity or model photos that artists retouch to change their physical appearance.

The National Press Photographers Association expresses reservations about digital altering and subscribes to the following belief: “As [photo] journalists we believe the guiding principle of our profession is *accuracy*; therefore, we believe it is wrong to alter the content of a photo in any way ... that deceives the public.” Yet, some insist that the extent to which a photo “deceives the public” is in the eye of the beholder. Many differentiate between technical manipulation *to improve photo quality* and intent to deceive. Some governments are attempting to legislate photo manipulation. One country banned a magazine in which a celebrity’s appearance appeared visibly altered. Some celebrities refuse to allow *airbrushing* or other manipulation of photos of them.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

1. Is it ethical to alter digital photos? Why or why not?
2. Does the answer depend on the reason for the alteration, the extent of the alteration, or some other factor?
3. Should magazines stop altering pictures of people to change their appearance? Why or why not?
4. Have you ever changed your appearance using photo editing software? What was the reason?
5. Have you ever changed the photos of other people? What was their reaction?

### 15. Personal Interest Applications

A variety of applications provide a service intended to make media and personal interest tasks easier to accomplish. Some apps focus on a single service, while others provide several services in a single app.

*Classify the actions according to the category:*

To research symptoms; listen to music or the radio; access how-to guides; establish a fitness or health program; obtain driving directions or your current location; track exercise activity; access the latest news or sports scores; check the weather forecast; take quality photos and/or videos; remotely start your vehicle or unlock/lock the doors; learn or fine-tune a particular skill; follow a tutorial; set an alarm or timer; assist children with reading and other elementary skills; compose music; view photos, watch videos or shows; check the time; read a book or other publication; refill prescriptions; play games individually or with others; support academics; research genealogy; count calories; use your phone as a flashlight; provide students with games, quizzes, and lessons about course topics; use a personal assistant that acts on your voice commands; access complete college or high school courses; find recipes; locate nearby restaurants, gas stations, or points of interest; monitor sleep patterns.

Lifestyle apps	Medical apps	Entertainment apps	Convenience apps	Education apps

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

*16\*. a) Problem Solving*

1. **Unacceptable File Size.** Your boss has asked you to design a new company logo using a graphics application installed on your computer. When you save the logo and send it to your boss, she responds that the file size is too large and tells you to find a way to decrease the file size. What might you do to make the image file size smaller?

2. **News Not Updating.** Each morning, you run an app on your smartphone to view the news for the current day. For the past week, however, you notice that the news displayed in the app is out of date. In fact, the app now is displaying news that is nearly one week old. Why might the app not be updating? What are your next steps?

3. **Dim Screen.** While using your laptop, the screen suddenly becomes dim. You set the brightness to its highest setting before it dimmed and wonder why it suddenly changed. After resetting the brightness to its highest setting, you continue working. What might have caused the screen to dim?

*b) Topics for research*

1. Online photo editing apps provide browser-based capabilities to modify digital images, and often contain many similar features as their desktop counterparts. In addition to drawing shapes, touching up colors, and adding filters to images, online photo editing apps allow users to access, store, and share their photos on the cloud. Online photo editing apps often include the ability to share photos with friends easily by sending a link, or posting the photo to online social networks.

Use a search engine to research various online photo editing apps. Compare the features of two of them as you explore their capabilities. Summarize your findings, regarding image formats you can import or save, sharing capabilities, special editing features, and ways to organize photos online. Which features take advantage of the fact that the app is cloud based?

2. Share any experiences you have with using the graphics and media applications. Make a presentation about one application that you have used before, enumerate its features, advantages and disadvantages; tell what you'd like to change; compare it with other applications of the same type and study the users' reviews. Is this program provided with your OS? Does it have a web or mobile version?

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

*17\*. Render the following text in English*

У сучасному виробництві широке поширення одержали системи автоматизованого проектування (САПР), які дозволяють проектувати технологічні процеси з меншими витратами часу та засобів, зі збільшенням точності спроектованих процесів і програм обробки, що скорочує витрати матеріалів та час обробки, завдяки тому, що режими обробки також розраховуються та оптимізуються за допомогою ЕОМ. Технічне забезпечення цих систем засновано на використанні обчислювальних мереж і телекомунікаційних технологій, персональних комп'ютерів та робочих станцій.

Математичне забезпечення САПР характеризується різноманітністю методів обчислювальної математики, статистики, математичного програмування, дискретної математики, штучного інтелекту. Програмні комплекси САПР відносяться до числа найбільш складних сучасних програмних систем, заснованих на операційних системах Unix, Windows, мовах програмування C, C++, Java і інших, сучасних CASE технологіях, реляційних і об'єктно-орієнтованих системах керування базами даних (СКБД), стандартах відкритих систем і обміну даними в комп'ютерних середовищах.

Проектування, при якому всі проектні рішення або їхня частина одержують шляхом взаємодії людини та ЕОМ, називають автоматизованими на відміну від ручного (без використання ЕОМ) або автоматичного (без участі людини на проміжних етапах). САПР звичайно використовуються разом із системами автоматизації інженерних розрахунків і аналізу CAE (*computer-aided engineering*). Дані із CAD-систем передаються в САМ (*computer-aided manufacturing*) – систему автоматизованої розробки програм обробки деталей для верстатів.

(Based on: elib.lutsk-ntu.com.ua)

### **Extended Reading**

*18. a) Read and translate the text.*

#### **File, Disk, and System Management Tools**

To perform maintenance-type tasks related to managing a computer, its devices, or its programs, you can use one or more file, disk, and system management tools. Functions provided by these tools include the following: managing files, searching, viewing images, uninstalling software, cleaning up disks, defragmenting disks, setting up screen savers, compressing files, maintaining a personal computer, and backing up files and disks.

A *file manager* is a tool that performs functions related to file management. Some of the file management functions are displaying a list of files on a storage medium; organizing files in folders; and copying, *renaming*, deleting, moving, and sorting files. A *folder* is a specific named location on a storage medium that contains related files. Operating systems typically include a file manager.

A *search tool* is a program, usually included with an operating system that attempts to locate a file, contact, calendar event, app or any other item stored on your computer or mobile device based on criteria you specify. The criteria could be a word(s), date, location, and other similar properties. Search tools can look through documents, photos, music, calendars, contacts, and other items on your computer or mobile device and/or on the Internet, combining search results in a single location. Search tools typically use an index to assist with locating items quickly. An *index* stores a variety of information about a file, including its name, date created, date modified, author name, and so on.

An *image viewer* is a tool that allows users to display, copy, and print the contents of a graphics file, such as a photo. With an image viewer, users can see images without having to open them in a paint or image editing program. Many image viewers include some photo editing capabilities.

An *uninstaller* is a tool that removes a program, as well as any associated entries in the system files. When you install a program, the operating system records the information it uses to run the software in the system files. The uninstaller deletes files and folders from the hard drive, as well as removes program entries from the system files.

A *disk cleanup tool* searches for and removes unnecessary files. Unnecessary files may include downloaded program files, *temporary* Internet files, deleted files, and unused program files. Operating systems usually include a disk cleanup tool. A *disk defragmenter* is a tool that reorganizes the files and unused space on a computer's hard disk so that the operating system accesses data more quickly and programs run faster.

A *screen saver* is a tool that causes a display device's screen to show a moving image or blank screen if no keyboard or mouse activity occurs for a specified time. When you press a key on the keyboard, tap the screen, or move the mouse, the screen saver disappears and the screen returns to the previous state.

A *file compression tool* shrinks the size of a file(s). A compressed file takes up less storage space than the original file. You may need to *compress* a file so that it will fit on a smaller storage medium, such as a USB flash drive. *Attaching* a compressed file to an email message, for example, reduces the time needed for file transmission. Uploading and downloading compressed files to and from the Internet reduces the file *transmission time*. Compressed files sometimes are called *zipped files*. When you receive or download a compressed file, you must uncompress it. To *uncompress* (or *unzip* or *expand*) a file, you restore it to its original form.

A *PC maintenance tool* is a program that identifies and fixes operating system problems, detects and repairs drive problems, and includes the capability of improving a computer's performance. Additionally, some personal computer maintenance utilities continuously monitor a computer while you use it to identify and repair problems before they occur.

A *backup tool* allows users to copy, or back up, selected files or the contents of an entire storage medium to another storage location, such as another hard drive, optical disc, USB flash drive, or cloud storage. During the backup process, the backup tool

monitors progress and alerts you if it needs additional media, such as another disc. Many backup programs compress files during the backup process. Because they are compressed, you usually cannot use backup files in their backed up form. In the event you need to use a backup file, a *restore tool* reverses the process and returns backed up files to their original form. Backup tools work with a restore tool. You should back up files and disks regularly in the event your originals are lost, damaged, or destroyed.

Although some of these tools are included with the operating system, you also can purchase stand-alone programs that offer improvements or added functionality.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

*b) Translate the words in italics.*

*c) Write a short summary of the text*

#### **List of words and word combinations to Unit 4**

<b>English</b>	<b>Ukrainian</b>
airbrushing	
backup tool	
brightness	
computer-aided design	
contrast	
desktop publishing software	
disc burning software	
disk cleanup tool	
disk defragmenter	
file compression tool	
file manager	
folder	
home design/landscaping software	
image stitching	
image viewer	
image/photo/video/audio editing software	
index	
interactive	
media player	
multimedia/website authoring software	
paint/ illustration software	
PC maintenance tool	
photo management software	
restore tool	
screen saver	
search tool	
sharpness	
template	
temporary	
to adjust	
to alter	

to attach	
to color-correct	
to compress/uncompress (unzip)	
to convert	
to crop	
to customize	
to enhance	
to rename	
to retouch	
to rotate	
to stream	
transmission time	
uninstaller	
zipped files	



## Unit 5

### Operating System

#### Pre-Reading Activity

1. Read and translate the following chains of related words. Determine what part of speech they belong to. Guess their meaning.

To operate – operator – operating; to reside – resident – residence; permanent – permanently – permanence; to hibernate – hibernation; to administer – administrator – administrative – administration; secure – security; graphics – graphical; intuition – intuitive; to set – setting; task – multitasking – single tasking; to partition – partitioning.

2. Read and translate the text using the dictionary.

When you purchase a computer or mobile device, it usually has an operating system and other tools installed. An **operating system (OS)** is a set of programs that coordinate all the activities among computer or mobile device hardware. Although an operating system often can run from a USB flash drive, media in an optical drive, or an external drive, in most cases, an operating system resides inside a computer or mobile device. On mobile devices, it may reside on **firmware** (ROM chips or flash memory chips that store permanent instructions) in the device. The **kernel** is the core of an operating system that manages memory and devices, maintains the internal clock, runs programs, and assigns the resources, such as devices, programs, apps, data, and information. The kernel is **memory resident**, which means it remains in memory while the computer or mobile device is running. Other parts of the operating system are **nonresident**.

Operating systems often are written to run on specific types of computers, based on their computing needs and capabilities. The operating system that a computer uses sometimes is called the **platform** because applications are said to run “on top of” it, or because the platform supports the applications. A **cross-platform application** is an application that runs the same way on multiple operating systems.

Most operating systems perform similar functions that include starting and shutting down a computer or mobile device, placing it in **sleep** or **hibernate mode**, providing a user interface, managing programs, managing memory, coordinating tasks, configuring devices, monitoring performance, establishing an Internet connection, providing file management and other device or media-related tasks, and updating operating system software. Some operating systems also allow users to control a network and administer security.

You interact with an operating system through its user interface. It controls how you enter data and instructions and how information is displayed on the screen. With a **graphical user interface (GUI)**, you interact with menus and visual images by touching, pointing, tapping, or clicking buttons and other objects to issue commands. Many current GUI operating systems incorporate features similar to those of a browser, such as links and navigation buttons (i.e., Back button and Forward button) when navigating the computer or mobile device’s storage media to locate files. A graphical user interface designed for touch input sometimes is called a **touch user interface**. With a **natural user interface (NUI)**, users interact with the software through ordinary, intuitive behavior. NUIs are implemented in a variety of ways: touch screens (touch input), gesture recognition (motion input), speech recognition (voice input), and virtual reality (simulations).

To configure devices, manage system resources, automate system management tasks, and troubleshoot network connections, network administrators and other

technical users work with a command-line interface. In a **command-line interface**, a user types commands represented by short keywords or abbreviations (such as **dir** to view a **directory**, or list of files) or presses special keys on the keyboard (such as function keys or key combinations) to enter data and instructions. Some people consider command-line interfaces difficult to use because they require exact spelling, form, and punctuation. Command-line interfaces, however, give a user more control to manage detailed **settings**.

An operating system can be single tasking or multitasking. A **single tasking OS** allows only one program or app to run at a time. For example, if you are using a browser and want to check email messages, you must exit the browser before you can run the email program. Most operating systems today are multitasking. A **multitasking OS** allows two or more programs or apps to reside in memory at the same time. Some operating systems support a single user; others support thousands of users running multiple programs. A **multiuser OS** enables two or more users to run programs simultaneously. Networks, servers, and supercomputers allow hundreds to thousands of users to connect at the same time and, thus, use multiuser OS.

A **driver** is a small program that tells the operating system how to communicate with a specific device. Each device connected to a computer has its own specialized set of commands and, thus, requires its own specific driver. When you start a computer or connect a device via a USB port, the operating system loads the device's driver. Drivers must be installed for each connected device in order for the device to function properly. Today, most devices and operating systems support **Plug and Play** when the OS automatically configures new devices as you install or connect them.

Operating systems typically include a **performance monitor**, a program that assesses and reports information about various computer resources and devices. The information in performance reports helps users and administrators identify a problem with resources so that they can try to resolve any issues. Many programs, including operating systems, include an automatic update feature. These updates can include fixing program errors, improving program functionality, expanding program features, enhancing security, and modifying device drivers. Many software makers provide free downloadable updates, sometimes called a **service pack**, to users who have registered and/or activated their software.

Network administrators, as well as owners of computers, typically have an **administrator account** that enables them to access all files and programs, install programs, and specify settings that affect all users on a computer, mobile device, or network. Settings include creating user accounts and establishing permissions, such as who can access certain resources and when they can access those resources. The administrators also use these files to monitor computer usage.

If you want to run multiple operating systems on the same computer, you could partition the hard drive or you could create a virtual machine. **Partitioning** divides a hard drive in separate logical storage areas (partitions) that appear as distinct drives. When you partition a drive, you can install a separate operating system in each partition, sometimes called a **dual boot**. Because partitioning requires advanced skills, users often opt to create a **virtual machine** instead, an environment on a computer in which you can install and run an operating system and programs. Virtual machines enable you to install a second operating system on a computer.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

## Reading Comprehension

### 3. Answer the questions

1. What is an operating system? 2. Where does it usually reside? 3. What is a kernel of an operating system? 4. Enumerate the functions of OS. 5. What types of user interface do you know? What is the difference between them? 6. How can you classify operating systems? 7. Why do we need drivers? 8. What is Plug and Play technology? 9. What is the function of a performance monitor? 10. What updates can be provided for OS? 11. What is an administrator account? 12. What is partitioning? What is it used for?

### 4. Mark the statements true or false. Correct the false ones.

1. A cross-platform application is an application that runs the same way on multiple operating systems.
2. A multitasking OS allows only one program or app to run at a time.
3. Partitioning divides a hard drive in separate logical storage areas that appear as distinct drives.
4. A graphical user interface designed for touch input sometimes is called a natural user interface.
5. When you purchase a computer or mobile device, it usually has no operating system installed.
6. In a command-line interface, a user types commands represented by short keywords or abbreviations to enter data and instructions.
7. A multiuser OS enables two or more users to run programs simultaneously.
8. The kernel is nonresident, which means it remains in memory while the computer or mobile device is running.
9. Today, most devices and operating systems support Plug and Play when the OS automatically configures new devices as you install or connect them.
10. Many programs, including operating systems, include an automatic update feature.

### 5. Finish the sentences according to the text

1. The kernel is memory resident, which means... 2. A cross-platform application is ... 3. Most operating systems perform similar functions that include ... 4. With a graphical user interface (GUI), you ... 5. With a natural user interface (NUI), users ... 6. In a command-line interface, a user ... 7. A single tasking OS allows ... 8. Networks, servers, and supercomputers allow ... 9. A driver is... 10. Operating systems typically include a performance monitor, a program ...

### 6. Write the short summary of the text.

## Vocabulary Practice

### 7. Translate the following words and word combinations into Ukrainian

Operating system, to configure devices, kernel, to issue commands, gesture recognition, natural user interface, memory resident, to provide file management, single tasking OS, command-line interface, performance reports, service pack, driver, directory, to troubleshoot network connections, multiuser OS, Plug and Play, to establish permissions, dual boot, virtual machine

### 8. Translate the following words and word combinations into English

Координувати всі види діяльності; сплячий режим; встановити Інтернет зв'язок; сенсорний інтерфейс користувача; розташовуватися всередині комп'ютера; кроссплатформенний додаток; керувати безпекою; графічний інтерфейс користувача; керувати детальними налаштуваннями; монітор продуктивності; розпізнавання мовлення; зберігати постійні інструкції; керувати пам'яттю та пристроями; профіль адміністратора; автоматизувати завдання з керування системою; багатозадачна операційна система; виправляти помилки програми; контролювати мережу; розділ диску; створити профіль користувача.

### 9. Translate the following sentences into Ukrainian

1. An operating system is a set of programs that coordinate all the activities among computer or mobile device hardware that resides inside a computer or mobile device. 2. A graphical user interface enables you to interact with menus and visual images by touching, pointing, tapping, or clicking buttons and other objects to issue commands, and incorporates features similar to those of a browser, such as links and navigation buttons. 3. A command-line interface is used to configure devices, manage system resources, automate system management tasks, and troubleshoot network connections. 4. A single tasking OS allows only one program or app to run at a time, e.g., if you are using a browser and want to check email messages, you must exit the browser before you can run the email program. 5. Many programs, including operating systems, include an automatic updates, such as fixing program errors, improving program functionality, expanding program features, enhancing security, and modifying device drivers.

### 10. Match the words and explanations

1.	operating system	a.	an operating system that allows only one program or app to run at a time
2.	virtual machine	b.	remaining in memory while the computer or mobile device is running
3.	multitasking OS	c.	an environment on a computer in which you can install and run an operating system and programs
4.	command-line interface	d.	an application that runs the same way on multiple operating systems
5.	partitioning	e.	a process that divides a hard drive in separate logical storage areas (partitions) that appear as distinct drives
6.	performance monitor	f.	a small program that tells the operating system how to communicate with a specific device
7.	single tasking OS	g.	an operating system that allows two or more programs or apps to reside in memory at the same time
8.	multiuser OS	h.	a graphical user interface designed for touch input
9.	firmware	i.	a program that assesses and reports information about various computer resources

			and devices
10.	driver	j.	a type of interface that enables users to interact with menus and visual images by touching, pointing, tapping, or clicking buttons and other objects to issue commands
11.	natural user interface	k.	a set of programs that coordinate all the activities among computer or mobile device hardware
12.	touch user interface	l.	ROM chips or flash memory chips that store permanent instructions
13.	graphical user interface	m.	a type of interface when a user types commands represented by short keywords or abbreviations or presses special keys on the keyboard to enter data and instructions
14.	kernel	n.	a type of interface that enables users to interact with the software through ordinary, intuitive behavior using touch, motion, speech voice input, and simulations.
15.	memory resident	o.	an operating system that enables two or more users to run programs simultaneously
16.	cross-platform application	p.	the core of an operating system that manages memory and devices, maintains the internal clock, runs programs, and assigns the resources, such as devices, programs, apps, data, and information

### 11. Translate the following sentences into English

1. Операційні системи призначені для керування роботою пристроїв комп'ютера, організації обміну даними між користувачем і комп'ютером, забезпечення обміну даними між пристроями комп'ютера, зберігання даних на носіях даних, забезпечення виконання інших програм, узгодження одночасної роботи різних програм. 2. Інтерфейс операційної системи - це набір засобів, використовуючи які користувач може подавати команди операційній системі та отримувати повідомлення про хід або результат виконання поданої команди. 3. В ОС з графічним інтерфейсом обмін даними між користувачем і комп'ютером реалізується з використанням вікон, значків, меню та вказівника (*WIMP*). 4. Для встановлення ОС потрібно виконати інсталяцію, під час якої відбувається розміщення ОС на вибраному носії даних, налагодження її взаємодії з пристроями комп'ютера. 5. Перші комп'ютери не мали операційних систем, тому кожна програма містила багато команд, що не були пов'язані з її основним призначенням, а забезпечували, наприклад, розміщення даних у пам'яті комп'ютера та їх передавання до процесора.

(based on: [www.subject.com.ua](http://www.subject.com.ua))

### 12. Fill in the gaps with the words from a box

recycle bin, quick access toolbar, minimize button, maximize button, close button, help button, title bar, ribbon, status bar, taskbar, start button, notification area
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1. \_\_\_\_\_ presents information about document, progress of certain tasks, status of certain commands and keys, and controls for viewing documents. 2. \_\_\_\_\_ enlarges window to fill screen. 3. \_\_\_\_\_ displays program and file name. 4. \_\_\_\_\_ displays pinned app buttons that always are on it and app buttons for apps that are running. 5. \_\_\_\_\_ provides menu of tiles and icons to run programs and apps. 6. \_\_\_\_\_ reduces window to a button on the taskbar. 7. \_\_\_\_\_ exits program. 8. \_\_\_\_\_ shows date, time, and includes buttons to access options for sound, touch keyboard, and more. 9. \_\_\_\_\_ consists of tabs, groups, and commands that provide access to tasks. 10. \_\_\_\_\_ is the location for files that have been deleted. 11. \_\_\_\_\_ opens Help window. 12. \_\_\_\_\_ provides access to frequently used commands.

### Speaking

#### 13. Points for discussion.

1. What operating systems have you used? Which one is better? Why?
2. Which operating systems have a touch user interface?
3. Have you ever installed drivers? Did you download them or were they provided with a device?
4. What might you do if you are unable to locate your device's driver on the manufacturer's website?
5. Do operating systems encrypt data and files?
6. What is the difference between sleep and hibernate mode?

#### 14. Read the text and answer the questions

##### **Open Source or Closed Source – Which Is More Secure?**

Supporters of open source software maintain that this operating system enables developers to create high-quality programs. *Source code*, along with any changes, remains public, so communities of open source programmers can examine, correct, and enhance programs. They also can make changes immediately when security issues arise. Many proponents of open source software use Linux, which is known for its speed and stability. Of the 500 fastest supercomputers, more than 90 percent use variants of Linux. Many of these computers perform high performance tasks, including detecting and preventing fraud. Companies and nonprofit organizations can distribute and sell their versions of Linux, which enables those without the expertise to modify open source software and to benefit from the creative efforts of the Linux community.

Developers of *closed source operating systems*, on the other hand, refuse to share some or all of the code. They believe that companies and developers should be able to control, and profit from, the operating systems they create. Their philosophy may hinder third-party software developers who create programs and apps for the operating system. Fear of viruses and other security concerns can lead some to question about whether open source software is worthwhile. While dishonest and anonymous developers can use open source software to create programs that may be or may include malware, cryptography experts emphasize that Linux systems have fewer reported security exposures than Windows-based systems. In general, Linux systems do not run antivirus software, but they do use detection programs that check for signs of attacks and probes.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

1. Do you prefer open source or closed source software? 2. Have you ever tried to change a source code? Was it successful? 3. Are the security concerns about open source software legitimate? Why or why not? 4. Why is antivirus software not necessary on Linux-based systems? 5. Does the open source model lead to higher-quality software? Why or why not?

*15\*. a) Problem Solving*

1. **Difficulty Signing In to Operating System.** You are attempting to sign in to your operating system, but you receive an error message stating that you have entered an invalid password. What are your next steps?

2. **Missing Customization Settings.** When you sign in to your operating system, your customized desktop background does not appear. Instead, the operating system displays the default desktop background. What might have happened?

3. **Mobile Device Operating System Upgrade.** A notification appears on your mobile phone stating that an operating system upgrade has been downloaded and is ready to install. Your company has provided the mobile phone to you for work-related business, and you are hesitant to install the upgrade. What are your next steps?

*b) Topics for research*

1. You are an analyst for a large manufacturer of laundry soaps. The company currently uses an early version of the Windows operating system on its 5,000 desktops. This year, the company plans to upgrade the operating system and, if necessary, its desktops. The company asks your team to compare the latest versions of the Windows, Mac OS, and Linux operating systems.

Take into consideration the following questions: What are the memory and storage requirements? Will the operating system require the company to purchase new computers? Which is best at protecting against viruses, spam, and spyware? Which supports touch input? Compile your findings and share your recommendation with the class.

2. There are many operating systems nowadays. Choose one OS and describe its features, advantages/disadvantages, and the history of its development.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

*16\*. Render the following text in English*

Перші комп'ютери взагалі не мали операційної системи. Проте вже до кінця 60-х років було розроблено близько ста операційних систем, наприклад система Atlas, створена в Манчестерському університеті, системи CTTS та ITSS, створені вченими Массачусетського технологічного інституту та ін. Найбільш розвинуті операційні системи того часу, такі як OS/360 (продукт компанії IBM), SCORE (розробка компанії CDC) та MULTICS (Bell Labs), передбачали можливість використання багатопроцесорних систем.

Спонтанний характер розробки ОС призвів до наростання кризових явищ. Створені операційні системи були достатньо складними та великими за розмірами, не використовували всіх можливих потужностей комп'ютерів, не оптимально виконувались або взагалі не працювали на менш потужних обчислювальних системах. Проте головним недоліком було те, що всі створені

ОС були повністю несумісними між собою. Тому в 1969 р. співробітники Массачусетського технологічного інституту Кен Томпсон, Деніс Рітчі та Брайан Керніган розробили та реалізували ОС UNIX. Вона була зручним інструментальним середовищем і стала прототипом єдиної ОС. Її можна було використовувати в різних обчислювальних системах та в разі потреби швидко перенести на іншу апаратну архітектуру.

Одну з найстаріших та найпоширеніших операційних систем - DOS було створено фірмою Майкрософт на замовлення корпорації ІВМ для встановлення на перші персональні комп'ютери. Найпоширенішою на сьогодні операційною системою є Windows (близько 90 % світового ринку настільних систем). Її первинно проектували як графічну надбудову над старим середовищем MS DOS.

(Based on: [wiki.tneu.edu.ua](http://wiki.tneu.edu.ua))

### Extended Reading

17. a) Read and translate the text.

#### Types of Operating Systems

Many of the first operating systems were *device dependent* (running only on a specific type or make of computer or mobile device) and *proprietary* (privately owned and limited to a specific vendor or computer or device model). The trend today, however, is toward *device-independent* operating systems that run on computers and mobile devices provided by a variety of manufacturers. The advantage of device-independent operating systems is you can retain existing applications and data files even if you change computer or mobile device models or vendors.

The three basic categories of operating systems on computers and mobile devices are desktop, server, and mobile. A *desktop* OS, sometimes called a *stand-alone* OS, is a complete OS that works on desktops, laptops, and some tablets. Desktop operating systems sometimes are called *client operating systems* because they also work in conjunction with a server OS. Client operating systems can operate with or without a network. Examples of the more widely used desktop operating systems are Windows, Mac OS, UNIX, Linux, and Chrome OS. In the mid-1980s, Microsoft developed its first version of Windows, which provided a graphical user interface. Since then, Microsoft continually has updated its *Windows* operating system, incorporating innovative features and functions with each subsequent version. *Mac OS* is installed on Apple computers, such as iMacs, MacBook Pros, MacBook Airs, Mac Pros, and Mac minis.

*UNIX* is a multitasking operating system developed in the early 1970s by scientists at Bell Laboratories. UNIX was implemented on many different types of computers. As a result, several versions of this operating system exist, each with slightly different features or capabilities. Today, a version of UNIX is available for most computers of all sizes. *Linux* introduced in 1991, is a popular, multitasking UNIX-based operating system that runs on a variety of personal computers, servers, and devices. Linux is not proprietary software like the operating systems discussed thus far. Instead, Linux is open source software. Many programmers have donated time to modify and redistribute Linux to make it the most popular UNIX-based operating system. Linux is available in a variety of forms, known as distributions. *Chrome OS*, introduced by Google, is a Linux-based operating system designed to work primarily with web apps. The only apps typically installed on the computer are the Chrome browser, a media player, and a file manager. A specialized laptop that runs Chrome OS



is called a *Chromebook*, and a specialized desktop that runs Chrome OS is called a *Chromebox*.

A *server OS* is a multiuser operating system that organizes and coordinates how multiple users access and share resources on a network. Client computers on a network rely on server(s) for access to resources. Server operating systems are designed specifically to support all sizes of networks, including medium- to large-sized businesses and web servers. Server operating systems can handle high numbers of transactions, support large-scale messaging and communications, and have enhanced security and backup capabilities. Many also support *virtualization*, the practice of sharing or pooling computing resources, such as servers or storage devices. Through virtualization, for example, server operating systems can separate a physical server into several virtual servers. Each virtual server then can perform independent, separate functions.

An example of server operating systems includes *Windows Server* developed by Microsoft. Windows Server enables organizations to manage applications and websites on-site and/or on the cloud. *OS X Server* developed by Apple enables organizations to collaborate, share files, host websites and mail servers, and more on Mac computers and iOS devices. *UNIX*, capable of handling a high volume of transactions in a multiuser environment and working with multiple processors, often is used on web servers. *OS Linux* is used on web servers and on supercomputers as it provides a secure, stable multiuser environment.

Mobile operating system resides on firmware. It typically includes or supports calendar and contact management, text messaging, email, touch screens, *accelerometer* (so that you can rotate the display), digital cameras, media players, speech recognition, GPS navigation, a variety of third-party apps, a browser, and wireless connectivity, such as cellular, Wi-Fi, and Bluetooth. Popular mobile operating systems include Android, iOS, and Windows Phone. *Android* is an open source, Linux-based mobile OS designed by Google for smartphones and tablets. A variety of manufacturers produces devices that run the Android operating system, adding their own interface elements and bundled software. As a result, an Android smartphone manufactured by Samsung may have different user interface features from one manufactured by Google. *iOS* (originally called iPhone OS), developed by Apple, is a proprietary mobile OS specifically made for Apple's mobile devices. Supported devices include the iPhone, iPod Touch, and iPad. *Windows Phone*, developed by Microsoft, is a proprietary mobile OS that runs on some smartphones.

When you purchase a new computer or mobile device, it typically has an operating system preinstalled. As new versions of the operating system are released, users often upgrade their existing computers and mobile devices to incorporate features of the new versions. Some upgrades are free; some offer an upgrade price that is less than the cost of purchasing the entire operating system. New versions of an operating system usually are *backward compatible*, which means they recognize and work with applications written for an earlier version of the operating system (or platform). The application, by contrast, may or may not be *upward compatible*, meaning it may or may not run on new versions of the operating system.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

b) *Translate the words in italics.*

c) Write a short summary of the text

**List of words and word combinations to Unit 5**

<b>English</b>	<b>Ukrainian</b>
accelerometer	
administrator account	
backward compatible	
closed source software	
command-line interface	
cross-platform application	
desktop OS	
device dependent/device-independent OS	
directory	
driver	
dual boot	
firmware	
graphical user interface	
hibernate mode	
kernel	
maximize button	
memory resident/nonresident	
minimize button	
natural user interface	
notification area	
operating system	
partitioning	
performance monitor	
platform	
Plug and Play	
proprietary OS	
quick access toolbar	
recycle bin	
ribbon	
server OS	
service pack	
settings	
single tasking/multitasking OS	
single user/multiuser OS	
sleep mode	
source code	
start button	
status bar	
taskbar	
title bar	
touch user interface	
upward compatible	

virtual machine	
virtualization	
WIMP	

## Unit 6 The Internet

### Pre-Reading Activity

1. a) Match the parts of the sentences. Translate into Ukrainian.

1.	A search engine	a.	contains thousands of tutorials, different materials for teaching and learning.
2.	An informational and research website	b.	offers a variety of Internet services from a single, convenient location
3.	A media sharing website	c.	allows users to create, add, modify, or delete the website content via a browser and can include articles, documents, photos, or videos.
4.	A bookmarking website	d.	allows users to collect and compile content from a variety of websites about a particular topic or theme
5.	A news, weather, sports, or other mass media website	e.	contains factual information such as libraries, encyclopedias, dictionaries, directories, guides, and other types of reference.
6.	An educational website	f.	enables users to access their financial records from anywhere in the world, as long as they have an Internet connection.
7.	A business/organizational website	g.	allows to search the web for career information and job openings
8.	A governmental website	h.	finds websites, webpages, images, videos, news, maps, and other information related to a specific topic showing thousands to billions of search results, called <i>hits</i> .
9.	A blog	i.	enables you to display up-to-date maps by searching for an address, postal code, phone number, or point of interest
10.	A wiki	j.	provides up-to-date medical, fitness, nutrition, or exercise information for public access.
11.	A health and fitness website	k.	provides citizens with information, such as census data, or assistance, such as filing taxes
12.	A science website	l.	offers music, videos, shows, performances, events, sports, games, and more in an interactive and engaging environment.
13.	An entertainment website	m.	enables members to organize, tag, and

			share links to media and other online content
14.	A banking and finance website	n.	allows to purchase just about any product or service on the web,
15.	A travel and tourism website	o.	consists of time-stamped articles, or posts, in a diary or journal format, usually listed in reverse chronological order.
16.	A mapping website	p.	contains newsworthy material, including stories and articles relating to current events, life, money, politics, weather, and sports
17.	A retail website	q.	contains information about space exploration, astronomy, physics, earth sciences, microgravity, robotics, and other branches of science
18.	A careers and employment website	r.	contains content that increases brand awareness, provides company/organization background or other information, and/or promotes or sells products or services.
19.	A portal	s.	enables users to research travel options and make travel arrangements.
20.	A content aggregation /curation website	t.	enables members to upload, organize, store, share, and download media such as photos, videos, and music

*b) Fill in the gaps with the words from the table*

1. Some \_\_\_\_\_, such as Bing, Google, and Yahoo!, are helpful in locating information on the web for which you do not know an exact web address or are not seeking a specific website. 2. \_\_\_\_\_ are sometimes called photo sharing sites, video sharing sites, and music sharing sites, respectively. 3. \_\_\_\_\_ offer exciting, challenging avenues for formal and informal teaching and learning. 4. Nearly every enterprise has a \_\_\_\_\_. 5. \_\_\_\_\_ offer guides on numerous topics, such as health and medicine, research paper, documentation styles, and grammar rules. 6. Many \_\_\_\_\_ support streaming media. 7. A \_\_\_\_\_ that contains video sometimes is called a vlog. 8. \_\_\_\_\_ support tagging, which enables users to organize their online content. 9. Some \_\_\_\_\_ offer users the capability of listening to health-related seminars and discussions. 10. \_\_\_\_\_ also provide directions when a user enters a starting and destination point. 11. \_\_\_\_\_ enable users to organize, edit, and share information. 12. Using \_\_\_\_\_, users can access accounts, pay bills, transfer funds, calculate mortgage payments, and manage other financial activities from their computer or mobile device. 13. You often can customize \_\_\_\_\_ so that you can receive local news or news about specific topics. 14. Most \_\_\_\_\_ offer these free services: search engine; news, sports, and weather; web publishing; yellow pages; stock quotes; maps; shopping; and email and other communications services. 15. On \_\_\_\_\_, you

typically can read travel reviews, search for and compare flights and prices, order airline tickets, book a room, or reserve a rental car.

## *2. Read and translate the text using the dictionary.*

One of the major reasons business, home, and other users purchase computers and mobile devices is for Internet access. The **Internet** is a worldwide collection of networks that connects millions of businesses, government agencies, educational institutions, and individuals. Each of the networks on the Internet provides resources that add to the abundance of goods, services, and information accessible via the Internet.

An **Internet service provider (ISP)**, sometimes called an Internet access provider, is a business that provides individuals and organizations access to the Internet free or for a fee. The Internet relies on an addressing system much like the postal service to send data to a computer or device at a specific destination. An **IP address**, short for Internet Protocol address, is a sequence of numbers that uniquely identifies the location of each computer or device connected to the Internet. Because lengthy IP addresses can be difficult to remember, the Internet supports domain names. A **domain name** is a text-based name that corresponds to the IP address of a server that **hosts** a website. A domain name is part of the web address that you type in a browser's **address bar** to access a website.

While the Internet was developed in the late 1960s, the World Wide Web emerged in the early 1990s as an easier way to access online information using a browser. The terms web and Internet should not be used interchangeably. The World Wide Web is a service of the Internet. The **World Wide Web (WWW)**, or **web**, consists of a worldwide collection of electronic documents. Each electronic document on the web is called a **webpage**, which can contain text, graphics, animation, audio, and video. Some webpages are static (fixed); others are dynamic (changing). Visitors to a **static webpage** all see the same content each time they view the webpage. With a **dynamic webpage**, by contrast, the content of the webpage is generated each time a user displays it. Dynamic webpages may contain customized content, such as the current date and time of day, desired stock quotes, weather for a region, or ticket availability for flights.

A **website** is a collection of related webpages and associated items, such as documents and photos, stored on a web server. A **web server** is a computer that delivers requested webpages to your computer or mobile device. The same web server can store multiple websites. As web technologies matured in the mid-2000s, industry experts introduced the term **Web 2.0** to refer to websites that provide a means for users to share personal information (such as online social networks), allow users to modify website content (such as wikis), and provide applications through a browser (such as web apps).

A **browser** is an application that enables users with an Internet connection to access and view webpages on a computer or mobile device. When you run a browser, it may retrieve and display a starting webpage, sometimes called a **home page**. The initial home page that is displayed is specified in the browser. Current browsers typically support **tabbed browsing**, where the top of the browser shows a tab (similar to a file folder tab) for each webpage you display.

A webpage has a unique address, called a **web address** or **URL** (Uniform Resource Locator). A browser retrieves a webpage using its web address. A web

address consists of a **protocol**, domain name, and sometimes the **host name**, **path** to a specific webpage, or file name of the webpage. The **HTTP**, which stands for **Hypertext Transfer Protocol**, is a set of rules that defines how webpages transfer on the Internet. Many web addresses begin with `http://` as the protocol. The text between the protocol and the domain name, called the host name, identifies the type of Internet server or the name of the web server.

When you enter a web address in a browser, you **request**, or pull, information from a web server. Another way users can pull content is by subscribing to a **web feed**, which contains content that has changed on a website. Mass media, blogs, and online social networks often provide web feeds.

The web contains several types of websites: **search engines**; online **social networks**; informational and research; media sharing; bookmarking; news, weather, sports, and other mass media; educational; business, governmental, and organizational; blogs; wikis and collaboration; health and fitness; science; entertainment; banking and finance; travel and tourism; mapping; retail and auctions; careers and employment; e-commerce; portals; content aggregation; and website creation and management. Many websites fall into more than one of these types. All of these websites can be accessed from computers or mobile devices but often are formatted differently and may have fewer features on mobile devices.

Today, billions of home and business users around the world access a variety of services on the Internet using computers and mobile devices. The web, messaging, and video communications are some of the more widely used Internet services.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

### Reading Comprehension

#### 3. Answer the questions.

1. Is there a difference between the terms “the Internet” and “WWW”? 2. Define the concepts “IP address” and “domain name”. 3. What is an address bar? 4. What is a webpage? What types of webpages do you know? 5. What does the term Web 2.0 refer to? 6. What is a website? What types of websites do you know? 7. What application do you use to view webpages? 8. What is a web feed? 9. What does “tabbed” browsing mean? 10. What are the constituents of a web address? 11. What is a home page? 12. What is a web server?

#### 4. Choose the correct answer

1. According to the passage, each electronic document on the web is called ...
  - a) a website.
  - b) a webpage.
  - c) a web address.
  - d) a home page.
2. ... allows users to see the same content each time they view the webpage
  - a) a static webpage.
  - b) a web feed.
  - c) a web server.
  - d) a dynamic webpage.
3. When you run a browser, it may retrieve and display a starting webpage, sometimes called a ...

- a) host name.
  - b) house page.
  - c) static webpage.
  - d) home page.
4. The word *path* in this text is closest in meaning to
- a) “a road, way or track made for particular purpose”;
  - b) “a course of action or conduct”;
  - c) “the complete location or name of where a computer file, web page or other object is located”;
  - d) “the course of direction in which something moves”.
5. According to the passage, Hypertext Transfer Protocol is ...
- a) a set of rules that defines how webpages transfer on the Internet.
  - b) a unique address of a webpage.
  - c) a starting webpage.
  - d) worldwide collection of electronic documents.
6. The word *domain* in the text is translated into Ukrainian as
- a) територія.
  - b) сфера діяльності.
  - c) інтервал.
  - d) домен.
7. The word *web* in the text is closest in meaning to
- a) a radio or television network.
  - b) a complex interconnected structure or arrangement.
  - c) a latticed or woven structure.
  - d) a service of the Internet consisting of a worldwide collection of electronic documents.
8. According to the text, an application that enables users with an Internet connection to access and view webpages on a computer or mobile device is called a...
- a) web server.
  - b) browser.
  - c) viewer.
  - d) web site.
9. Which statement is not correct:
- a) When you enter a web address in a browser, you request information from a web server.
  - b) A web feed contains content that has changed on a website..
  - c) A webpage has a unique address, called a web address or HTTP.
  - d) The terms web and Internet should not be used interchangeably.
10. According to the text, URL means...
- a) Uniform Resource Locator.
  - b) Upper Range Limit.
  - c) User Requirements Language.
  - d) Unrestricted Line.

5. Find the synonyms to the following words in the text

1) to link; 2) payment; 3) conversely; 4) way; 5) to transmit; 6) affluence; 7) to ask for; 8) cooperation; 9) modern; 10) position; 11) filling; 12) to describe.



6. Write the short summary of the text.

### **Vocabulary Practice**

7. Translate the following words and word combinations into Ukrainian

Educational institution, organizational website; IP address, customized content, website creation, Internet service provider, content aggregation website, tabbed browsing, business website, protocol, address bar, entertainment website; static webpage, to request, browser, social network, informational and research website; URL, path, portal.

8. Translate the following words and word combinations into English

Сукупність мереж; ряд цифр; домен; динамічна веб-сторінка; доступний через Інтернет; визначити розміщення; переглядати веб-сторінки; поштова служба; домашня сторінка; протокол передачі гіпертексту; всесвітнє павутиння; освітній веб-сайт; сукупність пов'язаних веб-сторінок; поділитися особистою інформацією; електронна комерція; веб розсилка; ім'я хосту; підписатися; пошукова система; урядовий сайт.

9. Translate the following sentences into Ukrainian

1. The Internet relies on an IP address, short for Internet Protocol address, a sequence of numbers that uniquely identifies the location of each computer or device connected to the Internet. 2. As web technologies matured in the mid-2000s, industry experts introduced the term Web 2.0 to refer to websites that provide a means for users to share personal information (such as online social networks), allow users to modify website content (such as wikis), and provide applications through a browser (such as web apps). 3. When you run a browser, it may retrieve and display a home page, which is specified in the browser. 4. A webpage has a unique address, called a web address or URL (Uniform Resource Locator), which consists of a protocol, domain name, and sometimes the host name, path to a specific webpage, or file name of the webpage. 5. Today, billions of home and business users around the world access a variety of services, such as messaging, and video communications, on the Internet using computers and mobile devices.

10. Find the definition of the following terms and learn them by heart

Internet, ISP, IP address, domain name, address bar, World Wide Web, webpage, static webpage, dynamic webpage, website, web server, Web 2.0, browser, home page, tabbed browsing, web address, path, Hypertext Transfer Protocol, web feed.

11. Fill in the prepositions where necessary.

1. The Internet relies \_\_\_\_ an addressing system much like the postal service to send data \_\_\_\_ a computer or device \_\_\_\_ a specific destination. 2. The World Wide Web (WWW) consists \_\_\_\_ a worldwide collection of electronic documents. 3. Each of the networks \_\_\_\_ the Internet provides \_\_\_\_ resources that add \_\_\_\_ the abundance of goods, services, and information accessible \_\_\_\_ the Internet. 4. A domain name is part of the web address that you type \_\_\_\_ a browser's address bar to access \_\_\_\_ a website. 5. A browser is an application that enables users \_\_\_\_ an Internet connection to access and view webpages \_\_\_\_ a computer or \_\_\_\_ mobile device. 6. An Internet service provider is a business that provides individuals and organizations access \_\_\_\_ the

Internet free or \_\_\_\_ a fee. 7. Today, billions of home and business users around the world access \_\_\_\_ a variety of services \_\_\_\_ the Internet using computers and mobile devices. 8. The same web server can store \_\_\_\_ multiple websites. 9. All of the websites can be accessed \_\_\_\_ computers or mobile devices but often are formatted differently and may have fewer features \_\_\_\_ mobile devices. 10. The HTTP, which stands \_\_\_\_ Hypertext Transfer Protocol, is a set of rules that defines how webpages transfer \_\_\_\_ the Internet.

*12. Translate the following sentences into English*

1. Інтернет – це найбільша та найвідоміша із сучасних глобальних мереж, що об'єднує комп'ютери та комп'ютерні мережі всього світу. Мережа створювалася для швидкого та безпечного передавання даних, забезпечення доступу користувачів до світових інформаційних ресурсів, обміну повідомленнями тощо. 2. Найпопулярнішою службою Інтернету є Всесвітнє павутиння, або веб. На серверах цієї служби зберігаються мільйони електронних документів, що пов'язані між собою, веб-сторінок. 3. Веб-сторінки є інформаційними ресурсами Інтернету. Вони можуть містити різні інформаційні матеріали: текст, зображення, звук, відео, анімацію тощо. 4. Групу веб-сторінок, що пов'язані гіперпосиланнями, мають спільну тематику та належать певному власнику, називають веб-сайтом. 5. У складі кожного веб-сайту є веб-сторінка, що призначена для початку перегляду сайту. Таку сторінку називають головною, або домашньою. На головній сторінці веб-сайту розміщується його назва, яка, як правило, відображає зміст інформаційних матеріалів сайту.

(Based on: subject.com.ua)

**Speaking**

*13. Points for discussion.*

1. Who owns the Internet? What is W3C? Which organizations are members of the World Wide Web Consortium?
2. What is a MiFi device?
3. Which browser or browsers have you used? Would you consider using another browser? Why (not)? What is the Silk browser? Does the browser war have a winner?
4. When first invented, the only function of a browser was to browse the web. Can you recommend a more descriptive name for today's browsers?
5. Which search engine do you use? What is a natural language search engine? What is a search engine spider?
6. How can you improve search results?

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

*14. Read the text and answer the questions. Translate the words in italics.*

**Using Public Wi-Fi Hot Spots Safely**

Connecting wirelessly to a public *hot spot* at your local coffee shop or at the airport can be convenient and practical. Using this free service can be risky, however, because cybercriminals may lurk in public Wi-Fi hot spots, hoping to gain access to *confidential information* on your computer or mobile device. Follow these guidelines for a safer browsing experience:

- Avoid typing passwords and financial information. Identity thieves are on the lookout for people who sign in to accounts, enter their credit card account numbers in

shopping websites, or conduct online banking transactions. If you must type this personal information, be certain the website's web address begins with "https," signifying a secure connection.

- Sign out of websites. When finished using an account, sign out of it and close the window.

- Disable your wireless connection. If you have finished working online but still need to use the computer, disconnect from the wireless connection.

- Do not leave your computer or mobile device unattended. It may seem obvious, but always stay with your computer or mobile device. Turning your back to talk with a friend or to refill your coffee gives thieves a few seconds to steal *sensitive information* that may be displayed on the screen.

- Beware of over-the-shoulder snoopers. The person sitting behind you may be watching or using a camera phone to record your keystrokes, read your email messages and online social network posts, and view your photos and videos.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

1. How will you apply these precautions the next time you use a public Wi-Fi hot spot? 2. Should businesses post signs alerting customers about Wi-Fi security issues? 3. Do you have any other ideas for safer browsing? 4. Have you had any problems connected with Internet security?

#### 15\*. a) Problem Solving

1. **Unexpected Search Engine.** A class project requires that you conduct research on the web. After typing the web address for Google's home page and pressing the enter key, your browser *redirects* you to a different search engine. What could be wrong?

2. **Social Media Password.** Your social media password has been saved on your computer for quite some time and the browser has been signing you in automatically. After deleting your browsing history and saved information from your browser, the online social network began prompting you again for your password, which you have forgotten. What are your next steps?

3. **Images Do Not Appear.** When you navigate to a webpage, you notice that no images are appearing. You successfully have viewed webpages with images in the past and are not sure why images suddenly are not appearing. What steps will you take to show the images?

#### b) Topics for research

1. Although most devices include a default browser, users have the option of downloading and installing other browsers. Evaluate and compare reviews of two or three browsers. Discuss the major differences among the browsers you researched, including number and types of features, which devices are compatible, how they display webpages, security features, and the speed at which they perform. Discuss any experiences you or your groupmates have had with various browsers. Include in your discussion which browser you would recommend and why.

2. There are many types of websites. Choose at least five websites of different types (See ex. 1, Unit 6) that you use the most, describe their interface, functions, advantages and disadvantages. What are other similar websites? Why have you chosen them among the similar websites?

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

16\*. *Render the following text in English*

Спочатку Інтернет був комп'ютерною мережею для передачі інформації, розробленою за ініціативою Міністерства оборони США. Приводом був запуск Радянським Союзом у 1957 році перший штучний супутник Землі. Американські військові вирішили, що в такому разі їм необхідна надійна система зв'язку. Проект ARPANET недовго був таємницею і незабаром став активно використовуватися різними галузями науки.

ARPANET була, можливо, більш досконалою, але не єдиною системою зв'язку. Коли американська мережа наповнилася першими групами новин, дошками оголошень (*bulletin board*) і перейшла на використання TCP/IP протоколу, ARPANET став Інтернетом. Буквально через рік це звання стало поступово переходити до NSFNet – міжуніверситетської мережі, що мала більшу пропускну здатність і набрала в річний період 10 тис. підключених комп'ютерів. У 1988 з'явився перший Інтернет-чат, а в 1989 році Тім Бернерс-Лі запропонував концепцію всесвітньої павутини.

У 1990 році ARPANET остаточно програла NSFNet. Бернерс протягом наступних двох років розробив протокол HTTP (гіпертекст), мову HTML і ідентифікатори URL. Всесвітня павутина – це система, що надає доступ до файлів комп'ютера-сервера, підключеного до Інтернету. Тому часто ці поняття плутають. Насправді ж, Інтернет є технологією зв'язку, певним інформаційним простором, а всесвітня павутина наповнює його. Складається ця мережа з багатьох мільйонів веб-серверів – комп'ютерів і їхніх систем, що відповідають за роботу веб-сайтів і сторінок.

(Based on: polynet.com.ua)

## Extended Reading

17. a) *Read and translate the text.*

### Browsers

The decision of which browser to use is a topic of discussion among computer experts and novices alike. All browsers can retrieve and display webpages, but their features and ease of use vary. Many factors can affect the decision to choose the browser that best fits your needs.

Users can customize some settings to improve their browsing experience. *Favorites*, also called *bookmarks*, are links to preferred websites. When you add a website to the list of favorites, you can visit that website simply by tapping or clicking its name in a list instead of typing its web address. Favorites can be organized into folders, alphabetized, and sorted by date or how frequently you view the websites. Security features, such as filters and secure connections, help protect you from fraudulent and malicious websites that might attempt to steal your identity and personal information. These features also can block websites you do not want to be displayed and can instruct the browser to save passwords. Privacy features help prevent thieves from accessing information about your browsing history, such as websites you have visited, data about your browsing session, and content you have seen on specific webpages.

A browser often is included in the operating system of a computer or mobile device. For example, many computer manufacturers include Edge or Internet Explorer when they install Windows and include Safari when they install Mac OS. Use a search

engine to locate the browser you want to install, and visit its website to download the most recent version. Most browsers are available for download at no cost. Keep your browser up to date to prevent security holes. You can set your browser to perform updates automatically.

Selecting the best browser for your needs involves some careful thought. You may decide to install several and then use each one for specific needs. A newer browser may not work properly on older hardware. Some browsers work best with a lot of memory. Browsers can be available for specific operating systems. For example, Internet Explorer and Edge are available only for Windows operating systems. Some browsers are best suited for performing simple searches, while others excel when running websites containing media.

Google's *Chrome* was first released in 2008. This free browser is available for Windows and Mac OS and must be downloaded and installed. Chrome has independent tabbed browsing; if one tab develops a problem, the other tabs continue to function. *Firefox*, developed by the Mozilla Corporation for Windows, Mac OS, and Linux, is known for its extensive array of *plug-ins*, programs that extend the capability of a browser. For example, your browser may require Adobe Reader to view and print PDF files. You typically can download plug-ins at no cost from various websites. Some plug-ins run on all sizes of computers and mobile devices; others have special versions for mobile devices. Some mobile devices and browsers, however, do not support plug-ins. For this reason, web designers are using newer technologies to create websites that display correctly in both desktop and mobile browsers; these technologies generally do not require the use of plug-ins to display media. Firefox was first released in 2004 and must be downloaded and installed. It has enhanced privacy and security features, a spelling checker, *tabbed browsing*, and a *password manager*.

*Internet Explorer* is a free browser, available primarily for Microsoft Windows and comes preinstalled. First released in 1995, it features protection against phishing and malware, and settings to delete information about searches performed and webpages visited. Edge is a Microsoft web browser included in the Windows 10 operating system. It is the *default* browser for Windows 10 on most devices, and is not *compatible* with prior versions of Windows. Features include integration with Cortana and OneDrive, along with annotation and reading tools.

The second-oldest browser *Opera*, is free, fast, and small. Used on both computers and mobile devices, Opera must be downloaded and installed. It began as a research project in Norway in 1994 and introduced several features found on most of today's browsers. *Safari*, preinstalled on Apple computers and devices, has been the default browser for Mac OS since 2003 and is relatively new to Windows. The browser has built-in sharing with online social networks, fast performance, *parental controls*, and ease of use.

Many browsers are included by default with some mobile devices and smartphones. Their features vary greatly. Some allow users to *zoom* and use keyboard shortcuts with most websites, while others display only websites optimized for mobile devices. The more popular mobile browsers are Chrome, Firefox, Internet Explorer, Edge, Safari, and Opera Mini.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

b) *Translate the words in italics.*

c) Write a short summary of the text

**List of words and word combinations to Unit 6**

<b>English</b>	<b>Ukrainian</b>
address bar	
blog	
browser	
bulletin board	
compatible	
confidential/sensitive information	
content aggregation website	
default	
domain name	
favorites/bookmarks	
home page	
host name	
HTTP	
Internet	
IP address	
ISP	
parental control	
password manager	
path	
plug-in	
portal	
protocol	
search engine	
social network	
tabbed browsing	
to redirect	
to request	
to zoom	
web address/URL	
web feed	
web server	
webpage static webpage dynamic webpage	
Wi-Fi hot spot	
wiki	
WWW/web	

## Unit 7

### Communication

### Netiquette

#### Pre-Reading Activity

##### 1. Answer the questions.

1. Do you prefer communication on the Internet to the real one? Why? 2. What ways of online communication do you know? 3. How has the communication ways changed over the years? 4. What are the latest trends in the communication? 5. What social networks do you know? Where are you registered? 6. Do you prefer posting the real or fake information about you in social networks? 7. What is instant messaging? What application of IM service do you know and use? How often do you use them?

##### 2. Read and translate the text using the dictionary.

The web is only one of the many services on the Internet. Other Internet services include the following: email, email lists, Internet messaging, chat rooms, online discussions, VoIP, and FTP.

**Email** (short for electronic mail) is the transmission of messages and files via a computer network. Email was one of the original services on the Internet, enabling scientists and researchers working on government-sponsored projects to communicate with colleagues at other locations. You use an email program to create, send, receive, **forward**, store, print, and delete email messages. Email programs are available as desktop apps, web apps, and mobile apps. An email message can be simple text or can include an **attachment** such as a document, a graphic, an audio clip, or a video clip.

Just as you address a letter when using the postal system, you address an email message with the email address of your intended **recipient**. An **email address** is a combination of a user name and a domain name that identifies a user so that he or she can receive Internet email. A **user name** is a unique combination of characters, such as letters of the alphabet and/or numbers that identifies a specific user. Your user name must be different from the other user names in the same domain.

In an Internet email address, an @ (pronounced *at*) symbol separates the user name from the domain name. Your service provider supplies the domain name. Most email programs allow you to create a **contacts folder**, which contains a list of names, addresses, phone numbers, email addresses, and other details about people with whom you communicate. When you send an email message, an **outgoing mail server** determines how to **route** the message through the Internet and then sends the message. As you receive email messages, an **incoming mail server** holds the messages in your mailbox until you use your email program to retrieve them. Most email programs have a mail notification alert that informs you via a message and/or sound when you receive a new email message.

An **email list**, or electronic mailing list, is a group of email addresses used for **mass distribution** of a message. When a message is sent to an email list, each person on the list receives a copy of the message in his or her mailbox. You subscribe to an email list by adding your email address to the mailing list, which is stored on a list server. To remove your name, you **unsubscribe** from the mailing list.

**Internet messaging services**, which often occur in real-time, are communications services that **notify** you when one or more of your established contacts are online and then allow you to exchange messages or files or join a private chat room

with them. Real time means that you and the people with whom you are conversing are online at the same time. Some Internet messaging services support voice and video conversations, allow you to send photos or other documents to a recipient, listen to streaming music, and play games with another online contact.

For real-time Internet messaging to work, both parties must be online at the same time. Also, the receiver of a message must be willing to accept messages. To use an Internet messaging service, you may have to install **messenger software** or an app on the computer or mobile device you plan to use. Many online social networks include a messaging feature. To ensure successful communications, all individuals on the friend list need to use the same or a compatible messenger.

A **chat** is a real-time typed conversation that takes place on a computer or mobile device with many other online users. A **chat room** is a website or application that permits users to chat with others who are online at the same time. A server echoes the user's message to everyone in the chat room. Anyone in the chat room can participate in the conversation, which usually is specific to a particular topic. Businesses sometimes use chat rooms to communicate with customers. As you type on your keyboard, others connected to the same chat room server also see what you have typed. Some chat rooms support voice chats and video chats, in which people hear or see each other as they chat. Most browsers today include the capability to connect to a chat server

An **online discussion**, or **discussion forum**, is an online area in which users have written discussions about a particular subject. To participate in a discussion, a user posts a message, called an article, and other users read and **reply** to the message. A **thread**, or threaded discussion, consists of the original article and all subsequent related replies. Some discussion forums require that you enter a user name and **password** to participate in the discussion.

**VoIP**, short for Voice over IP (Internet Protocol), enables users to speak to other users via their Internet connection. That is, VoIP uses the Internet (instead of the **public switched telephone network**) to connect a calling party to one or more local or long-distance called parties. To place an Internet phone call, you need a broadband Internet connection, a microphone and speaker, both of which are included with a standard computer or mobile device, and VoIP software, such as Skype. Some VoIP services require that you purchase a separate phone and VoIP router, and subscribe to their service. Others offer certain services free and require a subscription for additional services.

An online **social network**, also called a social networking site, is a website that encourages members in its online community to share their interests, ideas, stories, photos, music, and videos with other registered users. Some online social networks have no specialized audience; others are more focused. A photo sharing site, for example, is a specific type of online social network that allows users to create an online photo album and store and share their digital photos. Similarly, a video sharing site is a type of online social network that enables users to store and share their personal videos.

**FTP** (File Transfer Protocol) is an Internet standard that permits file uploading and downloading to and from other computers on the Internet. Webpage developers, for example, often use FTP to upload their webpages to a web server. Many operating systems include FTP capabilities. An FTP site is a collection of files that reside on an FTP server. Many FTP sites have **anonymous FTP**, whereby anyone can transfer some,



if not all, available files. Some FTP sites restrict file transfers to those who have **authorized accounts** (user names and passwords) on the FTP server.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

### **Reading Comprehension**

#### *3. Explain the following words from the text*

To forward, attachment, recipient, to route, mass distribution, to unsubscribe, to notify, messenger software, to reply, anonymous, authorized account

#### *4. Mark the statements true or false. Correct the false ones.*

1. The web is the only one service on the Internet.
2. To ensure successful communications, all individuals on the friend list need to use the same or a compatible messenger.
3. Your user name must be different from the other user names in the same domain.
4. Many operating systems include FTP capabilities.
5. Email programs are available only as desktop apps.
6. You cannot remove your name from the mailing list.
7. For real-time Internet messaging to work, both parties must be online at the same time.
8. Most email programs have a mail notification alert that informs you via a message and/or sound when you receive a new email message.
9. Chat rooms never support voice chats and video chats.
10. In an Internet email address, an @ (pronounced *in*) symbol separates the user name from the domain name.

#### *5. Finish the sentences according to the text*

1. You use an email program to... 2. An email message can be ... 3. An email address is... 4. Your user name must be different from... 5. Most email programs allow you to... 6. When you send an email message... 7. For real-time Internet messaging to work... 8. A chat room is... 9. Some chat rooms support... 10. Some VoIP services require...

#### *6. Write the short summary of the text.*

### **Vocabulary Practice**

#### *7. Translate the following words and word combinations into Ukrainian*

Government-sponsored projects, notification alert, attachment, chat, to participate in the conversation, email address, outgoing mail server, to listen to streaming music, to reply, to separate the user name from the domain name, to route the message, email list, password, social network, anonymous, Internet messaging services, discussion forum, VoIP, authorized account, FTP.

#### *8. Translate the following words and word combinations into English*

Передача повідомлень і файлів; електронна пошта; папка з контактами; пересилати; одержувач; сумісний; широкосмугове з'єднання з Інтернетом; тема (на форумі); ділитися інтересами; визначити конкретного користувача; сповістити; встановити програму месенджер; сервер вхідної пошти; масове

розповсюдження; обмінюватися повідомленнями; опублікувати повідомлення; відписатися; обмежити передачу файлу; передати повідомлення користувача; телефонна мережа загального користування.

#### *9. Translate the following sentences into Ukrainian*

1. To participate in a discussion, a user posts an article about a particular subject, and other users read and reply in a thread. 2. VoIP uses the Internet (instead of the public switched telephone network) to connect a calling party to one or more local or long-distance called parties, so you need a broadband Internet connection, a microphone and speaker, both of which are included with a standard computer or mobile device, and VoIP software, such as Skype. 3. Some Internet messaging services support voice and video conversations, allow you to send photos or other documents to a recipient, listen to streaming music, and play games with another online contact. 4. Most email programs allow you to create a contacts folder, which contains a list of names, addresses, phone numbers, email addresses, and other details about people with whom you communicate. 5. When a message is sent to an email list, each person on the list receives a copy of the message in his or her mailbox. You can subscribe to an email list by adding your email address to the mailing list or unsubscribe from it by removing your name.

#### *10. Match the words and explanations*

1.	email	a.	a list of names, addresses, phone numbers, email addresses, and other details about people with whom you communicate
2.	FTP	b.	a real-time typed conversation that takes place on a computer or mobile device with many other online users
3.	email list	c.	the transmission of messages and files via a computer network
4.	outgoing mail server	d.	an online area in which users have written discussions about a particular subject
5.	thread	e.	a server that determines how to route the message through the Internet and then sends the message
6.	social network	f.	a unique combination of characters, such as letters of the alphabet and/or numbers that identifies a specific user
7.	chat	g.	an Internet standard that permits file uploading and downloading to and from other computers on the Internet
8.	VoIP	h.	communications services that notify you when one or more of your established contacts are online and then allow you to exchange messages or files or join a private chat room with them
9.	contacts folder	i.	a discussion that consists of the original article and all subsequent related replies
10.	discussion forum	j.	a combination of a user name and a domain

			name that identifies a user so that he or she can receive Internet email
11.	incoming mail server	k.	a website that encourages members in its online community to share their interests, ideas, stories, photos, music, and videos with other registered users
12.	Internet messaging services	l.	group of email addresses used for mass distribution of a message
13.	user name	m.	enables users to speak to other users via their Internet connection
14.	chat room	n.	a server that holds the messages in your mailbox until you use your email program to retrieve them
15.	email address	o.	a website or application that permits users to chat with others who are online at the same time

### 11. Translate the following sentences into English

1. Електронною поштою можна надсилати не тільки письмові повідомлення, але й документи, графічні, аудіо-, відеофайли, програми, тощо. Ця універсальна послуга ще й досі є найпопулярнішою у всіх сферах діяльності користувачів. 2. В загальному випадку адреса електронної пошти складається з трьох частин і виглядає приблизно так: user@computer.site.ua, де @ - спеціальний символ притаманний адресам електронної пошти, user - ім'я користувача, computer.site.ua - доменне ім'я комп'ютера. 3. Можна відправити один лист зразу на декілька адрес, в цьому випадку різні адреси повинні розділятися комами. 4. При неможливості доставки листа адресату, або при виникненні якихось проблем з доставкою лист може повернутися назад до відправника. Кожен лист, який повертається містить повідомлення про помилку чи проблеми з доставкою. 5. Хоча кінцевий користувач може сприймати додатки як окремі файли, насправді вони оформлюються як частина поштового повідомлення.

(Based on: lib.if.ua)

### 12. Fill in the gaps with the words from a box

sign off, time-sensitive, email client, signature file, backup copy, blind carbon copy, emoticons, subject line, carbon copy, web-based email

1. It is appropriate to send an email message if the information you want to share is not \_\_\_\_\_. 2. A \_\_\_\_\_ of your e-mail is always stored on a server where it can be easily retrieved by interested parties, even when you have deleted the message and think it is gone forever. 3. \_\_\_\_\_ should convey the main point of your e-mail or the idea that you want the reader to take away from your e-mail. 4. Always \_\_\_\_\_ with your name at the end of your e-mail. 5. When you send a message to more than one address using the \_\_\_\_\_ field, each person who receives the message will be able to see the addresses of everyone else who received it. 6. You can get your email by using an \_\_\_\_\_ installed on your computer. 7. You can make the message more expressive by using \_\_\_\_\_. 8. You may also like to add a \_\_\_\_\_, a pre-written text file appended to the end of the message. 9. If you

don't want any of the recipients to see the e-mail addresses in the list, you can use \_\_\_\_\_. 10. Gmail is a good example of a \_\_\_\_\_, accessible from any web browser.

(Based on: Infotech: English for Computer Users, by Santiago Remacha Esteras; writingcenter.unc.edu)

## Speaking

### 13. Points for discussion.

1. What means do you usually use for online communication? How do you use different forms of communication to share information or communicate with your family, friends, or coworkers?
2. What are good practices to follow when using email?
3. What are examples of apps that provide free text messaging services?
4. What benefits and risks are involved when using online social networks?
5. For what purposes do you generally send email messages or text messages?
6. Under what circumstances is each form of communication most efficient?
7. What is the difference between emoji and emoticon?

### 14. Read the text and answer the questions

#### Who Is Responsible for Monitoring Cyberbullying?

Sending or forwarding threatening text messages, posting embarrassing or altered pictures of someone without his or her permission, or setting up a fake online social network page where others make cruel comments and spread rumors about someone all are examples of cyberbullying. Cyberbullying is harassment using technology, often involving teens and preteens. Unlike verbal bullying, the perpetrators can hide behind the anonymity of the Internet and can reach a wide audience quickly.

Cyberbullying often takes place outside of school hours on personal devices or computers not owned or monitored by a school. Yet the ramifications affect the victim at school. Schools struggle to come up with policies. Many schools are adopting policies that include consequences for any form of student-to-student bullying, even using nonschool resources, if it contributes to a hostile environment for any student or group of students.

Anti-bullying laws vary from state to state and often do not include specific language about cyberbullying. One argument against criminalizing cyberbullying is the protection of free speech. Awareness campaigns, school policies, and parent monitoring of technology use are some ways to attempt to prevent cyberbullying. These methods are not always effective. The impact on the victim can lead to poor grades, health issues, and mental health concerns.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

1. Have you ever got any threatening messages?
2. Have you ever made cruel comments about anyone?
3. Should schools be responsible for punishing students who cyberbully other students outside of school? Why or why not?
4. What role can parents play in reducing cyberbullying?
5. What are the positive and negative aspects of the freedom to be anonymous on the Internet?

*15\*. a) Problem Solving*

1. **Cyberbullying Message.** While reviewing the email messages in your email account, you notice one that you interpret as cyberbullying. You do not recognize the sender of the email message, but still take it seriously. What are your next steps?

2. **Sporadic Email Message Delivery.** The email program on your computer has been displaying new messages only every hour, on the hour. Historically, new email messages would arrive and be displayed immediately upon being sent by the sender. Furthermore, your coworkers claim that they sometimes do not receive your email messages until hours after you send them. What might be the problem?

3. **Unsolicited Friend Requests.** You recently signed up for an account on the Facebook online social network. When you log in periodically, you find that people you do not know are requesting to be your friend. How should you respond?

*b) Topics for research*

1. Every second, an average of 5,700 Tweets and 41,000 Facebook posts are created. With these impressive numbers, it is no wonder that online social media have become ubiquitous throughout the world. Visit two or more different social network websites and compare them. What personal information is required to join? Does either website ask for personal information that you are uncomfortable sharing? How does the content of these two websites differ? Which features are beneficial for casual users, and which are targeted toward business or professional users? Are these websites supported by advertisements? Locate the instructions for posting media. Are these instructions straightforward? Do these websites impose a limit on the number and/or size of media files a user can post?

2. Nowadays different messenger applications are very popular. They are comfortable to use and most of them have both web and mobile versions, so that you are always online. Compare two or more messengers. Do they have both versions? What personal information is required? Do they provide the privacy of your information? Do they need access to your location? What features do they have? What would you like to change?

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

*16\*. Render the following text in English*

У 2016 році популярність соціальних мереж впала на 2%, а от на месенджери користувачі почали витрачати на 3% більше часу. «Споживачі все менше цікавляться додатками, на ринку стало занадто багато різних програм», – повідомила директор з досліджень Gartner Джессіка Екхольм (Jessica Ekholm). Вона також зазначила, що користувачі все рідше завантажують нові програми.

Експерти Gartner опитали три тисячі осіб з США, Китаю і Великобританії. 72% опитаних зізнались, що користуються месенджерами щонайменше раз на день. В цілому результати опитування засвідчили, що месенджери поступово займають все більшу частку на ринку, через що інші додатки втрачають популярність. І пояснення тут досить просте: користувачі схильні ділитися через месенджери більш особистою інформацією. Аналітики SimilarWeb пояснюють, що зростання популярності месенджерів є головною причиною зниження інтересу до додатків соціальних мереж. Зокрема, кількість завантажень Facebook Messenger і WhatsApp збільшилась на 2% і 5% відповідно.

Як пише TechCrunch, компанія Facebook останні роки просуває власний Messenger. Цікаво, що популярність основного додатка впала, при цьому популярність самого месенджера зросла. У Китаї монополістом на ринку месенджерів є WeChat. Платформа пропонує безліч додаткових сервісів. Зокрема, через програму можна викликати таксі, здійснити грошовий переказ чи замовити їжу. Зараз Facebook намагається скопіювати модель WeChat і створити аналогічні багатофункціональні програми для західних користувачів власного месенджера.

(Based on: [watcher.com.ua](http://watcher.com.ua))

### Extended Reading

#### 17. a) Read and translate the text.

##### Netiquette.

What is *Netiquette*? Simply stated, it's network etiquette – that is, the etiquette of *cyberspace*.

Rule 1: Remember the human. When you communicate electronically, all you see is a computer screen. You don't have the opportunity to use facial expressions, gestures, and tone of voice to communicate your meaning; words – lonely written words – are all you've got. And that goes for your correspondent as well. When you're holding a conversation online – whether it's an email exchange or a response to a discussion group posting – it's easy to misinterpret your correspondent's meaning. And it's frighteningly easy to forget that your correspondent is a person with feelings more or less like your own. Humans exchanging email often behave the way some people behind the wheel of a car do: They curse at other drivers, make obscene gestures, and generally behave like savages. Most of them would never act that way at work or at home. But the interposition of the machine seems to make it acceptable. The message of netiquette is that it's not acceptable.

Rule 2: Adhere to the same standards of behavior online that you follow in real life. In real life, most people are fairly law-abiding, either by disposition or because we're afraid of getting caught. In cyberspace, the chances of getting caught sometimes seem slim. And, perhaps because people sometimes forget that there's a human being on the other side of the computer, some people think that a lower standard of ethics or personal behavior is acceptable in cyberspace. Be ethical. If you're tempted to do something that's illegal in cyberspace, chances are it's also bad netiquette.

Rule 3: Know where you are in cyberspace. Netiquette varies from domain to domain. When you enter a domain of cyberspace that's new to you, take a look around. Spend a while listening to the chat or reading the *archives*. Get a sense of how the people who are already there act. Then go ahead and participate.

Rule 4: Respect other people's time and *bandwidth*. It's a cliché that people today seem to have less time than ever before, even though (or perhaps because) we sleep less and have more labor-saving devices than our grandparents did. When you send message or post to a discussion group, you're taking up other people's time (or hoping to). It's your responsibility to ensure that the time they spend reading your posting isn't wasted. Bandwidth is the information-carrying capacity of the wires and channels that connect everyone in cyberspace. There's a limit to the amount of data that any piece of wiring can carry at any given moment – even a state-of-the-art fiber-optic cable. You are not the center of cyberspace. So don't expect instant responses to all your questions, and don't assume that all readers will agree with – or care about – your passionate arguments. To whom should messages be directed? Today, it's as easy to

copy practically anyone on your mail as it is not to. And we sometimes find ourselves copying people almost out of habit. In general, this is rude. People have less time than ever today, precisely because they have so much information to absorb. Before you copy people on your messages, ask yourself whether they really need to know. If the answer is no, don't waste their time.

Rule 5: Make yourself look good online. Take advantage of your anonymity. You can be judged by the quality of your writing. For most people who choose to communicate online, this is an advantage; if they didn't enjoy using the written word, they wouldn't be there. So spelling and grammar do count. Know what you're talking about and make sense. In addition, make sure your notes are clear and logical. It's perfectly possible to write a paragraph that contains no errors in grammar or spelling, but still makes no sense whatsoever. Don't post *flame-bait*. Finally, be pleasant and polite. Don't use offensive language, and don't be confrontational for the sake of confrontation. Usually, if you feel that cursing in some form is required, it's preferable to use amusing euphemisms like "effing" and "sugar." You may also use the classic *asterisk* filler.

Rule 6: Share expert knowledge. The strength of cyberspace is in its numbers. The reason asking questions online works is that a lot of knowledgeable people are reading the questions. Don't be afraid to share what you know.

Rule 7: Help keep *flame wars* under control. Netiquette does forbid the perpetuation of flame wars – series of angry letters, most of them from two or three people directed toward each other that can dominate the tone of a discussion group. It's unfair to the other members of the group. And while flame wars can initially be amusing, they get boring very quickly to people who aren't involved in them.

Rule 8: Respect other people's privacy. Of course, you'd never dream of going through your colleagues' desk drawers. So naturally you wouldn't read their messages either. Failing to respect other people's privacy is bad netiquette.

Rule 9: Don't abuse your power. Some people in cyberspace have more power than others. Knowing more than others, or having more power than they do, does not give you the right to take advantage of them. For example, *system administrators* should never read private email.

Rule 10: Be forgiving of other people's mistakes. When someone makes a mistake – whether it's a spelling error or a spelling flame, a stupid question or an unnecessarily long answer – be kind about it. If it's a minor error, you may not need to say anything. Even if you feel strongly about it, think twice before reacting. Having good manners yourself doesn't give you license to correct everyone else.

(Based on: <http://www.albion.com>)

b) *Translate the words in italics.*

c) *Write a short summary of the text*

#### List of words and word combinations to Unit 7

English	Ukrainian
anonymous	
archive	
asterisk	
attachment	

authorized account	
bandwidth	
blind carbon copy	
carbon copy	
chat room	
comment	
contacts folder	
cyberbullying	
cyberspace	
discussion forum	
email address	
email client	
email list	
emoticons	
fake	
flame war	
flame-bait	
FTP	
incoming mail server	
instant messaging	
Internet messaging services	
mass distribution	
messenger software	
netiquette	
online discussion	
outgoing mail server	
password	
public switched telephone network	
recipient	
signature file	
social network	
system administrator	
thread	
time-sensitive	
to forward	
to notify	
to reply	
to route	
to sign off	
to unsubscribe	
user name	
VoIP	



## Unit 8

### Security Tools

#### Pre-Reading Activity

1. Read and translate the following chains of related words. Determine what part of speech they belong to. Guess their meaning

To protect – protection – protective – protected; secure – security; malicious – malware; to intrude – intruder – intrusive – intrusion; to hack – hacker; corrupt – corrupted – corruptive; virus – antivirus – viral; to replicate – replication; to conceal – concealed – concealment – concealer; to scan – scanning – scanner; to spy – spying – spyglass – spyware; advertisement – ad – adware.

2. Read and translate the text using the dictionary.

To protect your computers and mobile devices, you can use one or more **security tools** that include personal firewalls, antivirus programs, malware removers, and Internet filters. Although some of these tools are included with the operating system, you also can purchase stand-alone programs that offer improvements or added functionality.

A **personal firewall** is a security tool that detects and protects a personal computer and its data from unauthorized intrusions. Personal firewalls constantly monitor all transmissions to and from a computer or mobile device and may inform a user of attempted intrusions. When connected to the Internet, your computer or mobile device is vulnerable to attacks from **hackers** who try to access a computer or network illegally. These attacks may destroy your data, steal information, damage your computer, or carry out some other **malicious** action.

A **computer virus** is a potentially damaging program that affects a computer or device negatively by altering the way it works. This occurs without the user's knowledge or permission. The signs of virus infection can include an unusual message or image, displayed on the computer screen; an unusual sound or music, suddenly missing program or file; sudden lack of memory; an unknown program; disappearance of files; change of file size; corrupted file; change of system properties, or slow operation of your computer. Viruses do not generate by chance. A virus author intentionally writes a virus program making sure that the virus can **replicate** itself, conceal itself, monitor for certain events, and then deliver its payload. A **payload** is the destructive event or prank the virus delivers.

Viruses can infect all types of computers and devices. The most common way viruses spread is by users running infected programs or apps. First, a virus replicates by attaching itself to program files. A **macro virus** hides in a **macro**, which is a standard feature of many productivity applications, such as word processing and spreadsheet apps. A **boot sector virus** targets the computer's **start-up files**. A **file virus** attaches itself to program files. The next time an infected program or app is run, the virus executes and infects the computer or device. Viruses conceal themselves to avoid detection. A **stealth virus** disguises itself by hiding in fake code sections, which it inserts within working code in a file. A **polymorphic virus** actually changes its code as it delivers the infection. Finally, viruses watch for a certain condition or event and activate when that condition or event occurs. The event might be starting the computer or device, or reaching a date on the system clock. A **logic bomb** is activated when it detects a specific condition (say, a name deleted from the employee list). A **time bomb**

is a logic bomb that is activated on a particular date or time. If the triggering condition does not exist, the virus simply replicates. During the delivery phase, the virus unleashes its payload, which might be a harmless prank that displays a meaningless message (**hoax**) — or it might be destructive, **corrupting**, modifying or deleting data and files.

In addition to viruses, other malware includes worms, Trojan horse programs, and rootkits. A **worm** resides in active memory and replicates itself over a network to infect computers and devices, using up system resources and possibly shutting down the system. A **Trojan horse** is a destructive program disguised as a real program, such as a screen saver. When a user runs a seemingly innocent program, a Trojan horse hiding inside can capture information, such as user names and passwords, from your computer or enable someone to control your computer remotely. Unlike viruses, Trojan horses do not replicate themselves. A **rootkit** is a program that easily can hide and allow someone to take full control of your computer from a remote location, often for nefarious purposes. Rootkits can be very dangerous and often require special software to detect and remove.

To protect a computer from virus attacks, users should install an antivirus program and keep it updated. An **antivirus program** protects a computer against viruses by identifying and removing any computer viruses found in memory, on storage media, or on incoming files. Antivirus programs **scan** for programs that attempt to modify a computer's start-up files, the operating system, and other programs that normally are read from but not modified. In addition, many antivirus programs automatically scan files downloaded from the web, email attachments, opened files, and all types of removable media inserted in the computer or mobile device. If an antivirus program identifies an infected file, it attempts to remove the malware. If the antivirus program cannot remove the infection, it often quarantines the infected file. A **quarantine** is a separate area of a hard drive that holds the infected file until the infection can be removed. This step ensures other files will not become infected. Most antivirus programs also include protection against other malware, such as worms, Trojan horses, and spyware.

**Spyware** is a type of program placed on a computer or mobile device without the user's knowledge that secretly collects information about the user and then communicates the information it collects to some outside source while the user is online. **Adware** is a type of program that displays an online advertisement in a banner or **pop-up/pop-under window** on webpages, email messages, or other Internet services. Sometimes, Internet advertising firms hide spyware in adware. **Malware removers (spyware/adware removers)** detect and delete spyware, adware, and other malware.

**Filters** are programs that remove or block certain items from being displayed. Four widely used Internet filters are anti-spam programs, web filters, phishing filters, and pop-up and pop-under blockers. An **anti-spam program** is a filtering program that attempts to remove spam before it reaches your inbox or forum. **Spam** is an unsolicited email message or posting sent to many recipients or forums at once. The content of spam ranges from selling a product or service, to promoting a business opportunity, to advertising offensive material. Spam also may contain links or attachments that contain malware. **Web filtering software** is a program that restricts access to certain material on the web. Some restrict access to specific websites; others filter websites that use certain words or phrases. A **phishing filter** is a program that warns or blocks you from

potentially fraudulent or suspicious websites. **Phishing** is a **scam** in which a perpetrator sends an official looking email message that attempts to obtain your personal and/or financial information. Some phishing messages ask you to reply with your information; others direct you to a phony website or a pop-up or pop-under window that looks like a legitimate website, which then collects your information. A **pop-up ad** is an Internet advertisement that suddenly appears in a new window on top of a webpage. Similarly, a **pop-under ad** is an Internet advertisement that is hidden behind the browser window so that it will be viewed when users close their browser windows. A **pop-up blocker** or **pop-under blocker** is a filtering program that stops pop-up or pop-under ads from displaying on webpages.

Studies show that malware can infect an unprotected computer within minutes after connecting to the Internet. Due to the increasing threat of viruses attacking your computer, it is more important than ever to protect your computer from viruses and other malware.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

### **Reading Comprehension**

#### *3. Answer the questions.*

1. What security tools do you know? 2. What is a firewall? How does it function? 3. Define a word “virus”. What viruses do you know? 4. What are the signs that there is a virus on your computer? 5. What are the stages of virus execution? 6. What examples of viruses were mentioned in the text? 7. What other types of malware do you know? Explain what their function is. 8. What is an antivirus program? How does it work? 9. What is quarantine? 10. What is the difference between a pop-up and pop-under ad? 11. How can you avoid it? 12. What is a filter?

#### *4. Find the words in the text according to the meaning*

1) to discover or notice the existence or presence of something; 2) susceptible to physical harm or damage; 3) capable of operating independently of any other device or system; 4) to duplicate, copy, reproduce, or repeat; 5) a rectangular space with text or graphics, especially an advertisement, running across the top of a webpage or other online document; 6) not authentic; 7) an illegal act of entering or taking possession of another's property; 8) located far away; 9) causing much damage; 10) to keep from being observed or discovered.

#### *5. Finish the sentences according to the text*

1. To protect your computers and mobile devices, you can... 2. A virus author... 3. The most common way viruses spread is... 4. A stealth virus disguises itself by... 5. A logic bomb activates when... 6. A rootkit is... 7. Antivirus programs scan for... 8. If the antivirus program cannot remove the infection... 9. Adware is... 10. Some phishing messages ask you...

#### *6. Write the short summary of the text.*

### **Vocabulary Practice**

#### *7. Translate the following words and word combinations into Ukrainian*

Stand-alone program, computer virus, time bomb, antivirus program, spam, start-up files, personal firewall, hoax, pop-up/pop-under window, web filtering

software, unauthorized intrusions, corrupted file, to conceal, polymorphic virus, file virus, worm, adware, quarantine, malware removers, phishing.

*8. Translate the following words and word combinations into English*

Вразливий до атак; нестача пам'яті; завантажувальний вірус; збирати інформацію; знищувати дані; шпигунське ПЗ; шкідливий; руткіт; копіювати; логічна бомба; шахрайство; повільна робота комп'ютера; сканувати; корисне навантаження; макровірус; троянська програма (троянський кінь); уникати виявлення; вірус-невидимка; обмежити доступ до певного матеріалу; програми для забезпечення захисту.

*9. Translate the following sentences into Ukrainian*

1. There are different types of viruses, e.g. macro virus, boot sector virus, file virus, stealth virus, polymorphic virus, each having its own way of distribution and its own aim. 2. It is important to have an antivirus program that protects a computer against viruses by identifying and removing any computer viruses found in memory, on storage media, or on incoming files. 3. Phishing message attempts to obtain your personal and/or financial information asking you to reply with your information, or directing you to a phony website or a pop-up or pop-under window that looks like a legitimate website, which then collects your information. 4. Many antivirus programs automatically scan files downloaded from the web, email attachments, opened files, and all types of removable media inserted in the computer or mobile device. 5. During the delivery phase, the virus unleashes its payload, which might be a harmless prank that displays a meaningless message — or it might be destructive, corrupting, modifying or deleting data and files.

*10. Match the words and explanations*

1.	computer virus	a.	a type of a virus that changes the code as it delivers the infection
2.	Web filtering software	b.	a separate area of a hard drive that holds the infected file until the infection can be removed
3.	polymorphic virus	c.	a type of program that displays an online advertisement in a banner or pop-up/pop-under window on webpages, email messages, or other Internet services
4.	worm	d.	a potentially damaging program that affects a computer or device negatively by altering the way it works
5.	stealth virus	e.	a type of program placed on a computer or mobile device without the user's knowledge that secretly collects information about the user and then communicates the information it collects to some outside source while the user is online
6.	pop-under ad	f.	a program that protects a computer against viruses by identifying and removing any computer viruses found in memory, on storage media, or on incoming files

7.	adware	g.	a type of malware residing in active memory and replicating itself over a network to infect computers and devices, using up system resources and possibly shutting down the system
8.	spam	h.	a destructive program disguised as a real program, such as a screen saver that can capture information, such as user names and passwords, from your computer or enable someone to control your computer remotely
9.	antivirus program	i.	a program that restricts access to certain material on the web
10.	pop-up ad	j.	a program that easily can hide and allow someone to take full control of your computer from a remote location, often for nefarious purposes
11.	quarantine	k.	an Internet advertisement that suddenly appears in a new window on top of a webpage
12.	rootkit	l.	an unsolicited email message or posting sent to many recipients or forums at once
13.	spyware	m.	a scam in which a perpetrator sends an official looking email message that attempts to obtain your personal and/or financial information
14.	phishing	n.	an Internet advertisement that is hidden behind the browser window so that it will be viewed when users close their browser windows
15.	Trojan horse	o.	a type of a virus that disguises itself by hiding in fake code sections, which it inserts within working code in a file

### 11. Translate the following sentences into English

1. Одночасно зі створенням власних копій віруси можуть завдавати шкоди: знищувати, пошкоджувати, викрадати дані, знижувати або й зовсім унеможлиблювати подальшу працездатність операційної системи комп'ютера. 2. Безпечні віруси не заважають роботі комп'ютера, але зменшують об'єм вільної оперативної пам'яті і пам'яті на дисках; дії таких вірусів виявляються в яких-небудь графічних або звукових ефектах. 3. Найпоширенішим різновидом “троянських програм” є широко відомі програми масового використання (редактори, ігри, транслятори), в які вбудовані, так звані “логічні бомби”, що спрацьовують у випадку виникнення деякої події. 4. У порівнянні з вірусами “троянські коні” не одержали широкого поширення внаслідок досить простих причин: вони або знищують себе разом з іншими даними на диску, або демаскують свою присутність і знищуються користувачем. 5. Відомі віруси-невидимки які дуже важко виявити і знешкоджувати, оскільки вони перехоплюють звернення операційної системи до уражених файлів і секторів дисків і підставляють незаражені ділянки диска.

(Based on: glossary.starbasic.net)

12. Fill in the prepositions where necessary

1. Personal firewalls constantly monitor all transmissions \_\_\_\_ and \_\_\_\_ a computer or mobile device and may inform a user of attempted intrusions. 2. Viruses conceal \_\_\_\_ themselves to avoid detection. 3. When connected \_\_\_\_ the Internet, your computer or mobile device is vulnerable \_\_\_\_ attacks from hackers who try to access a computer or network illegally. 4. A time bomb is a logic bomb that is activated \_\_\_\_ a particular date or time. 5. Antivirus programs scan \_\_\_\_ programs that attempt to modify a computer's start-up files, the operating system, and other programs. 6. A virus replicates \_\_\_\_ attaching itself \_\_\_\_ program files. 7. Sometimes, Internet advertising firms hide spyware \_\_\_\_ adware. 8. Many antivirus programs automatically scan \_\_\_\_ files downloaded \_\_\_\_ the web, email attachments, and opened files. 9. Viruses watch \_\_\_\_ a certain condition or event and activate when that condition or event occurs. 10. Spam is an unsolicited email message or posting sent \_\_\_\_ many recipients or forums at once.

**Speaking**

13. Points for discussion.

1. What is a hardware firewall?
2. How do antivirus programs detect viruses?
3. Are cookies spyware?
4. What are current phishing scams?
5. If your computer or mobile device is infected with a virus or malware, how will you know? How will you find instructions for removing a virus?
6. What antivirus programs do you use?

14. Read the text and answer the questions

**Malware Risks to Mobile Devices**

Practically every smartphone is vulnerable to hacking attacks. Threats to smartphones and mobile devices are growing in record numbers due to the rising popularity of these products and the variety of marketplace sources for downloading apps. Often the malware is disguised as a popular app and steals personal and sensitive information and phone numbers. It also can allow hackers to control the mobile device from remote locations. Once the hacker takes over the device, all the information on it is available, including passwords and account numbers. One of the fastest growing threats within mobile apps is *toll fraud malware*, which is a malicious mobile app that uses a variety of fraudulent schemes to charge unsuspecting users for premium messaging services.

Smartphone users can take several precautions to guard against malware threats. They include reading reviews of apps and the companies that create them before downloading the apps to your mobile device; using mobile malware and antivirus protection; turning off location-based apps that track your movements; avoiding connection with unknown wireless networks; keeping the operating system up to date; enabling the *screen lock* feature, and using a strong password to unlock the device. Don't forget to *reset* the mobile device before selling or trading it in.

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

1. Which of these guidelines do you follow now when using your smartphone or mobile device?
2. How will you modify your usage after reading these tips?
3. How

can you explain the word combination *toll fraud*? 4. Have you ever had a virus on your mobile phone? 5. What other guidelines can you add to the above-mentioned?

*15\*. a) Problem Solving*

1. **Antivirus Program Not Updating.** You are attempting to update your antivirus program with the latest virus definitions, but you receive an error message. What steps will you take to resolve this issue?

2. **Phishing Scam.** You just received an email message from someone requesting personal identification information. Believing the message was legitimate, you provided the requested information to the original sender. You now realize, however, that you might have fallen victim to a phishing scam. What are your next steps?

3. **Antivirus Software Outdated.** After starting your computer and signing in to the operating system, a message is displayed stating that your virus definitions are out of date and need to be updated. What are your next steps?

*b) Topics for research*

1. Make a short list of the most known viruses. Tell about the history of their writing, features and problems they can cause. Have you ever had problems with the viruses? How did you manage to deal with them? Do you know any famous cases of virus attacks?

2. Make a presentation or report about the mostly used antivirus programs nowadays. Who is their developer? Are they free or do you need to pay a fee? What are their features? Study the reviews of other people who have used them. What antivirus program do you use? What antivirus programs did you use in the past? Which one do you prefer and why?

(Based on: Discovering Computers 2017: Enhanced Edition, Shelly Cashman Series, 2016)

*16\*. Render the following text in English*

Комп'ютерний вірус – це невелика програма, що написана програмістом високої кваліфікації, здатна до саморозмноження й виконання різних деструктивних дій. На сьогоднішній день відомо понад 50 тис. комп'ютерних вірусів. Існує багато різних версій стосовно дати народження першого комп'ютерного вірусу. Однак більшість фахівців сходяться на думці, що комп'ютерні віруси, як такі, вперше з'явилися у 1986 році, хоча історично виникнення вірусів тісно пов'язане з ідеєю створення самовідтворюючих програм.

Одним із "піонерів" серед комп'ютерних вірусів вважається вірус "Brain", створений пакистанським програмістом на прізвище Алві. Тільки у США цей вірус вразив понад 18 тис. комп'ютерів. На початку епохи комп'ютерних вірусів розробка вірусоподібних програм носила чисто дослідницький характер, поступово перетворюючись на відверто вороже протистояння користувачів та безвідповідальних, і навіть кримінальних "елементів". В ряді країн карне законодавство передбачає відповідальність за комп'ютерні злочини, в тому числі за створення та розповсюдження вірусів.

Віруси діють тільки програмним шляхом. Вони, як правило, приєднуються до файлу або проникають всередину файлу. У цьому випадку кажуть, що файл заражений вірусом. Вірус потрапляє в комп'ютер тільки разом із

зараженим файлом. Для активізації вірусу потрібно завантажити заражений файл, і тільки після цього вірус починає діяти самостійно. Дія вірусів може проявлятися по-різному: від різних візуальних ефектів, що заважають працювати, до повної втрати інформації. Більшість вірусів заражують виконавчі програми хоча останнім часом все більшої популярності набувають віруси, що розповсюджуються через систему електронної пошти.

(Based on: victoria.lviv.ua)

### Extended Reading

17. a) Read and translate the text.

#### 4 Technologies That Could Pave the Future of Cybersecurity

by Larry Alton

*Cybersecurity* has come a long way over the decades, but hackers and cybersecurity experts are constantly trying to one-up each other in terms of technological sophistication and preparedness. Every time we take a major step forward in terms of reliable security, cybercriminals are there to match us. Accordingly, there will never be an “unhackable” device or piece of software; there will always be vulnerabilities in any system you have in place.

Even so, we can always make forward progress toward building something more reliable—there’s always room for improvement in our existing systems, and new technologies on the horizon.

How might these technologies change the future of cybersecurity? These are some of the most promising technologies coming to keep our digital information and communications safer:

1. Quantum key distribution. It sounds like some kind of superpower, but quantum key distribution could be the future of *encryption* technology. Quantum physics involves the study of subatomic particles, which behave strangely, against our intuitions on small scales. We’re already using quantum computers, which take advantage of particles that can exist in two states at the same time (as a particle in a wave). Quantum entanglement involves two particles that affect each other’s position, even at a distance. Conventional encryption involves a lock-and-key method of creating and then *cracking* a code—but these can be easily copied and cracked. Quantum key distribution relies on quantum entangled particles that are virtually *uncopiable*—and tremendously hard to crack—but it’s still a new technology that demands refinement.

2. *Blockchain* tech. Blockchain isn’t a term familiar to many, but it’s associated with a technology that most have heard of—Bitcoin. Blockchain is a system of collaborative information storage, exchange, and retrieval that maintains a public record of ownership. It’s how Bitcoin transactions are able to take place, and remain consistent, without any single institution defining or monitoring those transactions, and without any outside interference to commit *digital theft*. Shaping Tomorrow predicts that within a few years, most major banks (as well as other financial-related companies like insurance institutions) will be using blockchain to greater secure their financial transactions.

3. DUST. One reason Snapchat became so popular is its ability to have messages self-destruct; this guarantees, to some degree, that your message won’t spread or be committed to public memory, therefore enhancing both privacy and security. Security organization PARC is now working on Disintegration Upon Stress-release Trigger, or DUST technology that mirrors this effect. Instead of photos and videos no



longer being viewable, computer chips will self-destruct after conveying their requisite information.

4. *Biometrics*. In the public eye for decades, biometric technology uses unique personal identifiers to ensure proper identification. For example, your phone may take a thumbprint scan before allowing you to access the data inside, or a device may scan your retina before permitting you access to a building. Since these personal identifiers are incredibly hard to mimic, especially remotely, they could greatly enhance security in a number of different areas. However, there are still a number of important hurdles to overcome before the technology can be adopted on any wide scale.

Some of the biggest challenges include the cost of developing these technologies, which should improve over time, and convincingly demonstrating the reliability of these protocols.

(Based on: [www.computer.org](http://www.computer.org))

b) *Translate the words in italics.*

c) *Write a short summary of the text*

#### List of words and word combinations to Unit 8

English	Ukrainian
adware	
anti-spam program	
antivirus program	
biometrics	
blockchain	
boot sector virus	
computer virus	
cybersecurity	
digital theft	
encryption	
file virus	
filter	
hacker	
hoax	
logic bomb	
macro virus	
mainstream	
malicious	
malware remover	
payload	
personal firewall	
phishing	
phishing filter	
polymorphic virus	
pop-up/pop-under ad/window	
pop-up/pop-under blocker	
quarantine	

rootkit	
scam	
screen lock	
security tools	
spam	
spyware	
start-up file	
stealth virus	
time bomb	
to corrupt	
to crack	
to replicate	
to reset	
to scan	
toll fraud malware	
Trojan horse	
uncopiable	
web filtering software	
worm	

## Appendix 1

### Job Titles and Descriptions

#### **System Development.**

Careers in system development require you to analyze or create software, apps, databases, websites and web-based development platforms, and networks.

Job title	Job description
Cloud architect	identifies business requirements, strategies, and solutions for cloud storage and services that meet a company's goals or needs
Database designer	specifies the structure, interface, and requirements of a large-scale database; determines security and permissions for users
Program and app developer	specifies, designs, implements, tests, and documents programs and apps in a variety of fields, including robotics, operating systems, animation, and applications
Systems analyst	works closely with users to analyze their requirements, designs and develops new information systems, and incorporates new technologies
Systems programmer	installs and maintains operating system software and provides technical support to the programming staff
Web designer	designs the layout, navigation, and overall appearance of a website with a focus on user experience; specifies a website's appearance using HTML5, JavaScript, CSS, media, and other web design technologies
Web Developer	analyzes, develops, and supports the functionality of a website, including applications that often interact with databases or other online resources

#### **Technology Operations.**

Careers in technology operations require you to have knowledge about how hardware, software, and networks function.

Job title	Job description
Computer technician	installs, maintains, and repairs hardware and servers; installs, upgrades, and configures software; troubleshoots hardware problems
Help desk specialist/ help desk technician	answers technology-related questions in person, on the phone, or via email or an online chat room

Network administrator/ engineer	installs, configures, and maintains LANs, WANs, wireless networks, intranets, Internet systems, and network software; identifies and resolves connectivity issues
Technical project manager	guides design, development, and maintenance tasks; serves as interface between programmers/developers and management

### **Web Marketing and Social Media.**

Careers in web marketing and social media require you to be knowledgeable about web-based development platforms, social media apps, and marketing strategies.

Job title	Job description
Customer relationship management (CRM) specialist	integrates apps and data related to customer inquiries, purchases, support requests, and behaviors in order to provide a complete application that manages a company's relationships with its customers
Internet/social media marketing specialist	directs and implements an organization's use of Internet and social media marketing, including Facebook pages, Twitter feeds, blogs, and online advertisements
Search engine optimization (SEO) expert	writes and develops web content and website layouts so that they will appear at the beginning of search results when users search for content
User experience (UX) designer	plans and designs software and apps that consider a user's reaction to a program and its interface, including its efficiency, its effectiveness, and its ease of use

### **Data Storage, Retrieval, and Analysis.**

Careers in data storage and analysis require you to be knowledgeable about collecting, analyzing, and reporting data from databases or the web.

Job title	Job description
Data scientist	uses analytics and other Big Data tools to compile statistics on data that an organization can use to plan product development or create strategies for marketing
Database analyst	uses data modeling techniques and tools to analyze and specify data usage
Database administrator	creates and maintains the data dictionary; monitors database performance
Digital forensics examiner	collects and analyzes evidence found on

	computers, networks, mobile devices, and databases
Web analytics expert	collects and measures Internet data, such as website traffic patterns and advertising, and develops reports that recommend strategies to maximize an organization's web presence

### **Information and Systems Security.**

Careers in information and systems security require you to be knowledgeable about potential threats to a device or network, including viruses and hacking. Security specialists need to know the tools and techniques to protect against threats.

Job title	Job description
Computer security specialist/ mobile security specialist	responsible for the security of data and information stored on computers and mobile devices within an organization
Network security administrator	configures routers and firewalls; specifies web protocols and enterprise technologies
Security analyst	implements security procedures and methods, looks for flaws in security of a company's devices and networks, works with and trains employees at all levels, and assigns permissions and network settings
Security system project manager	develops and maintains programs and tools designed to provide security to a network
Digital forensics analyst	inspects electronic data to recover documents and files from data storage devices that may have been damaged or deleted, in order to use them as evidence in a crime investigation

### **App Development and Mobile Technologies.**

Careers in app development and mobile technologies require you to have knowledge about trends in the desktop and mobile app market, as well as the ability to develop secure apps for a variety of computers and mobile devices.

Job title	Job description
Desktop or mobile application programmer/ developer	converts the system design into the appropriate application development language, such as Visual Basic, Java, C#, and Objective C, and toolkits for various platforms
Games designer/programmer/ developer	designs games and translates designs into a program or app using an appropriate application development language
Mobile strategist	integrates and expands the company's

	initiatives for mobile users
Mobile technology expert	develops and directs an organization's mobile strategy, including marketing and app development

## Appendix 2

### Letter of Application

A **letter of application**, also known as a cover letter, is a job application document sent with your resume to provide additional information about your skills and experience. Your application letter should let the employer know what position you are applying for, what makes you a strong candidate, why they should select you for an interview, and how you will follow up.

#### Parts of a letter of application

1. *Heading*. Your heading should include your name, address, city, state, and zip code, followed by your phone number and email. The date should be on the next line. Then you should list the name of the company contact, their title, the company address and city, state, and zip code. If you are sending your letter via email as an attached document, title the document with your name and the job title.

2. *Greeting*. Begin your letter greeting with "Dr./Mr./Ms. Lastname." If you do not know the employer's last name, simply write "Dear Hiring Manager" or leave the greeting off the letter and start with the first paragraph.

#### 3. *Body of letter*

- First paragraph: Explain why you are writing - mention the job you are applying for and where you found the listing.
- Middle paragraph(s): State what you have to offer the employer - mention why your skills and experiences are a good fit for the job. For each skill or quality you mention, provide a specific example.
- Last paragraph: Say thank you to the hiring manager for considering you and note how you will follow up.

4. *Signature*. End your letter with a polite closing, such as "Sincerely" or "Regards", and your signature (handwritten if you are sending it by post), followed by your typed name. If this is an email, simply include your typed name, followed by your contact information.

#### Tips:

1. Always write one. Unless a job posting specifically says not to send a letter of application or cover letter, you should always send one. Even if the company does not request a letter of application, it never hurts to include one.

2. Show your skills. Throughout the letter, focus on how you would benefit the company. Provide specific examples of times when you demonstrated skills or abilities that would be useful for the job, especially those listed in the job posting or description.

3. Use keywords. Reread the job listing, circling any keywords (such as skills or abilities that are emphasized in the listing). Try to include some of those words in your cover letter. This will help the employer see that you are a strong fit for the job.

4. Keep your letter brief, under a page long, with no more than about four paragraphs. An employer is more likely to read a concise letter.

5. Employers are likely to overlook an application with a lot of errors. Therefore, read through your cover letter, and if possible ask a friend or career counselor to review the letter. Proofread for any grammar or spelling errors.

### **Samples of Cover Letters**

#### **Software Developer Cover Letter**

Your Name

Your Address

Your City, State, Zip Code

Your Phone Number

Your Email

Company Name

Address

City, State, Zip Code

Dear HR Manager,

This letter is to express my interest in your posting on Dice.com for an experienced software developer. With a Bachelor's degree in Computer Science, Master's degree in Information Technology, and hands-on experience using .Net languages to create and implement software applications, I am confident I will be an asset to your organization.

I enjoy being challenged and engaging with projects that require me to work outside my comfort and knowledge set, as continuing to learn new languages and development techniques are important to me and the success of your organization.

Your listed requirements closely match my background and skills. A few I would like to highlight that would enable me to contribute to your bottom line are:

- Highly skilled in designing, testing, and developing software
- Thorough understanding of data structures and algorithms
- Knowledgeable of back-end development best practices
- Hands-on software troubleshooting experience
- Proven track record of proper documentation for future maintenance

and upgrades

I've attached a copy of my resume that details my projects and experience in software development. I can be reached anytime via my cell phone, 555-555-5555 or via email at name@gmail.com.

Thank you for your time and consideration. I look forward to speaking with you about this opportunity.

Sincerely,

Your Signature

Typed Name

### Front End Web Developer Cover Letter

Your Name  
Your Address  
Your City, State, Zip Code  
Your Phone Number  
Your Email

Company Name  
Address  
City, State, Zip Code

Dear HR Manager,

This letter is to express my interest in the job posted on your website for an experienced, detailed-oriented, front-end web developer. As you'll see, I have six years of experience efficiently coding websites and applications using modern HTML, CSS, and JavaScript.

Building state-of-the-art, easy to use, user-friendly websites and applications is truly a passion of mine and I am confident I would be an excellent addition to your organization. In addition to my knowledge base, I actively seek out new technologies and stay up-to-date on industry trends and advancements. This has allowed me to stay ahead of the curve and deliver exceptional work to all of my employers, including those I've worked for on a project basis.

I've attached a copy of my resume detailing my experience, along with links to websites and applications I've had the honor of working on.

I can be reached anytime via my cell phone, 555-555-5555 or by email at name@gmail.com

Thank you for your time and consideration. I look forward to speaking with you about this opportunity.

Best Regards,  
Your Signature  
Typed Name

(Based on: [www.thebalance.com](http://www.thebalance.com))

### Appendix 3 Resume

A **resume** is a document, used to apply for jobs, which includes descriptions of your education, experience, skills, and accomplishments.

In general, resume consists of the following parts:

1. *Identification*: include your name, address, telephone number, and email address at the top of your resume. Use a professional email address (i.e. johnsmith@gmail.com rather than soccerlover@hotmail.com). You can also write a short *profile* mentioning your strengths and skills.

2. *Objective* is optional. If you decide to include a resume objective, keep it concise and specific; state your desired job or field, and what you hope to accomplish in that field.



3. *Education*: include the degrees you have received in reverse chronological order (with the most recent degree listed first). Be sure to include the name of each institution, its location, and your date of graduation (or expected date of graduation). When applicable, include your major/minor fields, and any honors, publications, and projects.

4. *Experience*: include your work experience in reverse chronological order (with the most recent degree listed first). This section can include jobs, internships, and volunteer work. Include the name of the company, the position, and dates of employment. List roughly three important tasks, accomplishments, or skills gained at each job. Use action verbs to describe your achievements. Action verbs show your ability to succeed. For example, words like *accomplished*, *developed*, *managed*, and *handled* describe what you have achieved.

5. *Skills or qualifications (optional)*: include any computer systems with which you are proficient, particularly if they are related to the position for which you are applying. Include foreign languages with which you are familiar; state both the language and your level of familiarity (beginning, intermediate, proficient, fluent). List any other skills you have that relate to the job but are not included elsewhere in your resume. Add some general skills like communication and interpersonal skills. Do not mention obsolete skills, the skills you do not have, and those not relevant for the job. There are also some overused words to avoid, e.g., *leadership*, *specialized*, *passionate*, *strategic*, *expert*, *focused* etc.

6. *Volunteer work (optional)*. You can include a volunteer experience section to convey your leadership, communication skills, etc. List the name of the organization, the dates of your volunteer work, and your achievements.

7. *Hobbies and interests (optional)*. You can also include a section on your hobbies and interests if they relate to the position. For example, if you are applying to work at a sporting goods store, you can include your passion for basketball.

### **Tips:**

1. Your resume should be as concise as possible; two pages is the maximum length, but one page is preferable.

2. Do not use ornate fonts that are difficult to read. Your font size should be between 10 and 12 points although your name and the section headings can be a little larger and/or bold.

3. However you decide to organize the sections of your resume, be sure to keep each section uniform. For example, if you put the name of one company in italics, every company name must be in italics. If you bold one job title, bold them all.

4. Do not include personal information such as birthday, height, weight, marital status, children, etc., unless the position requires it.

5. Be sure to edit your resume before sending it. Check spelling, grammar, tenses, names of companies and people, etc.

6. Use keywords. They are skills, abilities, credentials, and qualities that a hiring manager looks for in a candidate. To find keywords to use, take a look at job postings similar to the positions you are looking for. Search for job listings that match your background and experience. You might also check out the company website for possible keywords.

## Software Engineer Resume Sample

### Firstname Lastname

6 Kent Street

Warren, MI 48088

Home 555-555-5555 | Cell 555-123-4567

lastname.firstname@email.com

Superior knowledge of computer systems, design, and analytical projects, along with first-hand experience with all phases of product development lifecycle.

### Education

Master of Science, University of ABC, Dearborn, MI

Anticipated May 20XX

Major: Computer Science

Bachelor of Science, University of ABC, Ann Arbor, MI

May 20XX

Major: Computer Science

### Experience

June 20XX – Present - Software Engineer, Varys, Detroit, MI

- Analyze, troubleshoot and solve problems in a timely and accurate manner.
- Produce automated test scripts and define environments to conduct test activities
- Extend SDK functionality to new platforms and partners.
- Write clear, concise, and thorough specifications and documentation.

December 20XX - May 20XX - Software Engineer - Intern, Summit Technology, Detroit, MI

- Designed and implemented algorithms for indexing and searching documents.
- Worked with team members to investigate design approaches and evaluate feasibility.
- Developed software architectures and designs based on product requirements.
- Helped improve the reliability and efficiency of Summit's core systems.

### Technical Skills

**Languages:** C++, Java, C#, Net, JavaScript

**Applications:** MS Visual Studio, Eclipse

**Application Server:** JBoss, Tomcat

**Operating Systems:** Windows, Unix, Linux

**Database Systems:** SQL Server, MySQL, Ingres

## Graphic Designer Resume Sample

### Firstname Lastname

6 Kent Street

Warren, MI 48088

Home 555-555-5555 | Cell 555-123-4567

lastname.firstname@email.com

### Professional Profile

Creative IT designer with the technical know-how to make my visions a reality. Detail-oriented perfectionist dedicated to creating the best graphic designs for my clients based on industry standards and corporate personality. Experienced using various software and coding languages to create unique designs and upload those designs to the Internet on fully functional web pages that perform across multiple platforms.

### Work Experience

IT Web Designer

Innovative Solutions

August 2015 – Present

- use HTML and CSS to design and code home pages and display ads;
- collaborate with marketing managers to create conceptual design solutions;
- evaluate web designs produced by others for potential areas of improvement

Web Designer

Westwood Digital Agency

March 2011 – August 2015

- used Adobe Creative Suite software to create innovative graphic designs;
- created high-quality graphics and page layouts optimized for print and web;

### Education and Training

Bachelor of Science in Web Design – June 2009

Santa Fe City University

### Skills

- Proficient in HTML and CSS coding
- Thorough knowledge of Adobe Creative Suite, including Photoshop, Illustrator, InDesign, and Dreamweaver
- Excellent written and verbal communication skills
- Self-motivated and independent worker, able to manage workload and meet tight deadlines
- Knowledge of email marketing systems

### Hobbies and Interests

I spend much of the workweek indoors, so on weekends, I like to get out of town and into nature. I'm an avid rock climber and have visited numerous state and national parks. I am a member of a local rock-climbing club, I organize outings to provide new challenges to experienced climbers and introduce beginning climbers to the hobby.

(Based on: [resume-genius.com](http://resume-genius.com), [www.resume-now.com](http://www.resume-now.com))

## References

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