

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ОДЕСЬКИЙ ДЕРЖАВНИЙ ЕКОЛОГІЧНИЙ УНІВЕРСИТЕТ

English for applied programmers

Навчальний посібник
для студентів вищих навчальних закладів
III-IV рівнів акредитації

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Навчальний посібник призначений для студентів ІТ спеціальностей, зокрема для аудиторної і самостійної роботи студентів у рамках дисципліни «Іноземна мова» (англійська мова за професійним спрямуванням). Посібник спрямований на підготовку студентів ЗВО РВО бакалавр до читання, розуміння та перекладу автентичної англомовної літератури за фахом «Комп'ютерні науки», спілкування англійською мовою в академічному та професійному просторі. У посібнику представлені ключові теми сфери ІТ для тренування навичок роботи з літературою за спеціальністю, формування навичок усного та писемного мовлення з використанням професійної лексики. Кожен розділ представляє собою окрему одиницю і тому можна обирати матеріали для розбору в довільному порядку.

Матеріали можуть бути використані на практичних заняттях з англійської мови професійного спрямування, а також для організації самостійної та індивідуальної роботи студентів.

Р е ц е н з е н т и:

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Передмова

Сучасний етап розвитку внутрішньо національних та міжнародних відносин вимагає покращення рівня соціальної адаптації, загальної культури та спеціальної підготовки майбутнього фахівця шляхом глибшого вивчення англійської мови у немовному ЗВО. Практичне володіння англійською мовою є невід'ємним компонентом сучасної підготовки спеціалістів закладами вищої освіти.

Мета навчального посібника – забезпечити розвиток відповідних лексико-граматичних навичок, навичок читання, аналізу, перекладу, спілкування англійською мовою за фаховим спрямуванням.

Структура. Навчальний посібник складається з 14 розділів із скороченим автентичними текстами з англомовних джерел із вправами до кожного з них. Після кожного розділу є базова теорія з певної граматичної теми і 6-10 вправ на її відпрацювання. Зокрема речення для аналізу використання певного часу чи стану було відібрано з оригінальної художньої літератури.

Кожен урок містить по два тексти:

I. Текст 1 призначений для читання, перекладу, обговорення в аудиторії після виконання 4-х вправ до нього;

II. Текст 2, тематично зв'язаний з текстом 1, призначений для самостійного перекладу поза заняттям з подальшою перевіркою та опрацюванням на практичному занятті, уточненням значень окремих лексичних одиниць.

Лексичні вправи призначено для вивчення та закріплення відповідного лексичного матеріалу кожного розділу, охоплюють лексику основних текстів за фахом. У всіх розділах після двох текстів є стисле теоретичне пояснення граматичного матеріалу, відповідних прикладів і комплексу тренувальних вправ. Характеристика особливостей значення і вживання видо-часових форм англійського дієслова, супроводжується відповідними таблицями. Було представлено наступні видо-часові форми англійського дієслова: Indefinite, Continuous, Perfect, Perfect Continuous, Future-in-the-Past в активному та пасивному стані. Розроблена в навчальному посібнику система вправ забезпечує поступове засвоєння відповідних граматичних явищ, розвиває вміння самостійно орієнтуватися у мовленнєвих ситуаціях під час вживання видо-часових форм англійської мови.

Зазначений граматичний матеріал подається в поєднанні з тренувальними вправами, які спрямовані на аналіз та відпрацювання, закріплення вивченого граматичного матеріалу. Граматичний матеріал

подається в стислому викладенні з відповідними схемами, оскільки, передбачається його повторення, а не первинне вивчення. До окремих граматичних вправ використані уривки з текстів оригінальної англійської та американської літератури (Т. Драйзер, Ч. Діккенс, Дж. Голсуорсі, С. Моем, А. Крісті, Б. Шоу, Марк Твен та ін.), що поглиблюватиме розуміння особливостей морфології англійської мови.

У додатках подано список неправильних дієслів, правила читання найбільш уживаних математичних позначень, список скорочень, характерних для науково-технічної літератури, таблиці утворення множини іменників, запозичених з латинської та грецької мов, тести-завдання для самоконтролю набутих знань з граматики англійської мови, що потребують індивідуальної відповіді.

Відбір матеріалу підказано найбільш типовими помилками в галузі слововживання і труднощами під час вживання деяких граматичних тем. Таким чином, навчальний посібник допомагає запобігти вживанню найбільш типових помилок під час вивчення англійської мови, у процесі усного мовлення.

Після вивчення поданого курсу студенти повинні знати і вміти:

- вільно читати і перекладати науково-технічну англійську літературу за фахом для одержання необхідної інформації;
- брати участь в усному спілкуванні англійською мовою на подані теми;
- визначати за формальними ознаками у спеціальному тексті засвоєні лексичні та граматичні конструкції і перекладати їх;
- за допомогою навичок аналітичного мислення критично оцінювати твердження та відрізняти вірне від невірного, аргументуючи свою думку;
- вміти відповідати по суті на питання до тексту із висловленням своєї думки (при монологічному та діалогічному мовленні);
- розуміти і правильно вживати видо-часові форми англійського дієслова як в усному, так і в писемному мовленні.

Скорочення, що зустрічаються у навчальному посібнику (Abbreviations):

etc.	—	et cetera (і так далі)
Ex.	—	Exercise (вправа)
i.e.	—	that is (тобто)
V	—	Verb (дієслово)
V ¹	—	дієслово у I формі
V ²	—	дієслово у II формі
V ³	—	дієслово у III формі
V _{ing}	—	дієслово із закінченням –ing

Unit 1 A Computer

Text 1. The Modern History of Computing

The earliest computing machines in wide use were not digital but analogue. In analogue representation, properties of the representational medium ape (or model) properties of the represented state-of-affairs.

Charles Babbage's Difference Engine, designed in the 1820s, is considered the first "mechanical" computer in history. Powered by steam with a hand crank, the machine calculated a series of values and printed the results in a table. James Thomson, brother of Lord Kelvin, invented the mechanical wheel-and-disc integrator that became the foundation of analogue computation. The two brothers constructed a device for computing the integral of the product of two given functions, and Kelvin described (although did not construct) general-purpose analogue machines for integrating linear differential equations of any order and for solving simultaneous linear equations. Kelvin's most successful analogue computer was his tide predicting machine, which remained in use at the port of Liverpool until the 1960s. Mechanical analogue devices based on the wheel-and-disc integrator were in use during World War I for gunnery calculations. The first fully functioning electronic digital computer to be built in the U.S. was ENIAC, constructed at the Moore School of Electrical Engineering, University of Pennsylvania, for the Army Ordnance Department, by J. Presper Eckert and John Mauchly. Completed in 1945, ENIAC was somewhat similar to the earlier Colossus, but considerably larger and more flexible (although far from general-purpose). The primary function of ENIAC was the calculation of tables used in aiming artillery. ENIAC was not a stored-program computer, and setting it up for a new job involved reconfiguring the machine by means of plugs and switches. For many years, ENIAC was believed to have been the first functioning electronic digital computer, Colossus being unknown to all but a few. The "five generations of computing" is a framework for assessing the entire history of computing. The first generation, spanning the 1940s to the 1950s, covered vacuum tube-based machines. The second then progressed to incorporate transistor-based computing between the 50s and the 60s. In the 60s and 70s, the third generation gave rise to integrated circuit-based computing. We are now in between the fourth and fifth generations of computing, which are microprocessor-based and AI-based computing.

Exercise 1. Translate the following words:

medium ape, wheel-and-disc integrator, flexible, general-purpose, stored-program computer, reconfiguring, plugs and switches, hand crank, tube-based machines; підключення, гнучкий, спричинити підйом, одночасний, диференційні лінійні рівняння, винаходити, покоління обчислень, вбудований, передбачувати.

Exercise 2. Determine false statements and correct them:

1. Difference Engine is believed to be the first "mechanical" computer in history.
2. ENIAC was a stored-program computer, and setting it up for a new job didn't involve reconfiguring the machine by means of plugs and switches.
3. Kelvin's most successful analogue computer was his tsunami predicting machine.
4. The primary function for which ENIAC was designed was the calculation of tables used in weather forecast.
5. Kelvin described general-purpose analogue machines for integrating rules of any order and for solving different equations.
6. Mechanical analogue devices based on the wheel-and-disc integrator were in use during World War II for gunnery calculations.
7. The earliest computing machines in wide use were digital.
8. The "five generations of computing" represent main stages of the entire history of computing.
9. In the 50s and the 60s, the third generation gave rise to integrated circuit-based computing.
10. We are now in the fifth generation of computing.

Exercise 3. Divide the words from the picture below into categories: principal unit and peripherals, input and output devices.



Exercise 4. Answer the following questions:

1. What is the first computer in history?
2. What are the five generations of computing?
3. Do you have a PC/laptop at home? What is it?
4. What peripherals do you have?
5. Have you ever upgraded your PC/laptop?
6. Do you update regularly the programmes on your PC/laptop?
7. What factors usually make us change a PC/laptop?
8. What characteristics are important for a modern PC and a laptop?
9. What brands are considered to be good?
10. Is it better to have a PC or laptop nowadays?
Tell about advantages of each of them.

Exercise 5. Investigate the development stages of computer in the 21st century and put the right date for each of them:

2001 2004 2005 2006 2009 2010 2011 2015 2016 2017 2022

1. _____ The MacBook Pro from Apple hits the shelves. The Pro is the company's first Intel-based, dual-core mobile computer.
2. _____ The Mozilla Corporation launches Mozilla Firefox 1.0. The Web browser is one of the first major challenges to Internet Explorer, owned by Microsoft

3. _____ Mac OS X, later renamed OS X then simply macOS, is released by Apple as the successor to its standard Mac Operating System. OS X goes through 16 different versions, each with "10" as its title, and the first nine iterations are nicknamed after big cats, with the first being codenamed "Cheetah," TechRadar reported.
4. _____ The first reprogrammable quantum computer was created. The quantum-computing platform has the capability to program new algorithms into their system.
5. _____ The iPad, Apple's flagship handheld tablet, is unveiled.
6. _____ Google buys Android, a Linux-based mobile phone operating system
7. _____ The Defense Advanced Research Projects Agency (DARPA) is developing a new "Molecular Informatics" program that uses molecules as computers.
8. _____ Google releases the Chromebook, which runs on Google Chrome OS.
9. _____ The first exascale supercomputer, and the world's fastest, Frontier. Built by Hewlett Packard Enterprise (HPE) at the cost of \$600 million, Frontier uses nearly 10,000 AMD EPYC 7453 64-core CPUs alongside nearly 40,000 AMD Radeon Instinct MI250X GPUs.
10. _____ Apple releases the Apple Watch. Microsoft releases Windows 10.

Text 2. SSD vs. HDD.

The traditional spinning hard drive is the basic non-volatile storage on a computer. That is, information on it doesn't "go away" when you turn off the system, unlike data stored in RAM. A hard drive is essentially a metal platter with a magnetic coating that stores your data, whether weather reports from the last century, a high-definition copy of the original Star Wars trilogy, or your digital music collection. A read/write head on an arm (or a set of them) accesses the data while the platters are spinning. An SSD performs the same basic function as a hard drive, but data is instead stored on interconnected flash-memory chips that retain the data even when there's no power flowing through them. These flash chips (often dubbed "NAND") are of a different type than the kind used in USB thumb drives, and are typically faster and more reliable. SSDs are consequently more expensive than USB thumb drives of the same capacities.

Consumer SSDs are rarely found in capacities greater than 2TB, and those are expensive. You're more likely to find 500GB to 1TB units as primary drives in systems. While 500GB is considered a "base" hard drive capacity for premium laptops these days, pricing concerns can push that down to 128GB or 256GB for lower-priced SSD-based systems. Users with big media collections or who work in content creation will require even more, with 1TB to 8TB drives available in high-end systems.

Traditional backup is when data is stored on HDDs or flash drives either locally or at a remote location. The best thing is to use HDD backups because it's quick and easy to locate data on disks. For this same reason, HDDs are more secure than off-site tape and cloud backup. In addition, all applications must be checked to ensure they will be able to use the restored data: software used to format the data must be available, and security certificates, permissions, access control and decryption must be applied correctly. Basically, the more storage capacity, the more stuff you can keep on your PC.

Exercise 1. Translate the following words:

Spinning, non-volatile storage, platter, magnetic coating, interconnected, flash-memory chips, off-site tape, primary drives, permissions, access control;

ноутбук, резервне збереження даних, системи вищого рівня, віддалене місце, розшифрування, ємність зберігання, додаток, звернутися, енергія, приводи.

Exercise 2. Determine and correct false sentences:

1. The traditional spinning hard drive is the basic volatile storage on a computer.
2. A hard drive is essentially a plastic platter with a magnetic coating that stores your data.
3. An SSD performs another basic function than a hard drive
4. A special head on an arm reads/writes the data while the platters are spinning.
5. SSDs are less expensive than USB thumb drives of the same capacities.
6. HDDs are less secure than off-site tape and cloud backup.
7. 3 TB is considered a "base" hard drive capacity for premium laptops.

8. An SSD performs the same basic function as a hard drive and its data is stored on interconnected flash-memory chips.
9. Traditional backup is when data is stored on HDDs or flash drives only locally.
10. The less storage capacity, the less information you can keep on your PC.

Exercise 3. Answer the following questions:

1. What are basic functions of a hard drive?
2. What is non-volatile storage of data?
3. What particularity of storage has RAM?
4. What are special features of an SSD?
5. Which memory unit can have more memory?
6. What kind of storage are SSD and HDD?
7. Which backup is better to use?
8. What is more expensive, SSD or HDD? What influences the price of the last?
9. What is dubbed "NAND"?
10. What are main differences between SSD and HDD?

Exercise 4. Insert the missing words from the box below:

flash compares astronomical moving gaming processing contrasts read/write

HDDs have 1 _____ parts while SSDs are essentially advanced 2 _____ memory. Due to their differences, SSD drives have faster 3 _____ rates than hard disk drives, and hard disk drives cost less than SSD drives. Solid State Drives are better for demanding tasks requiring intense read/write speeds, such as 4 _____ and video editing. HDDs are best for data archiving; they perform fine for basic tasks such as word 5 _____.

Except for the last couple of years, SSDs have been out of the price range of most consumers and business owners. In previous years using SSDs had an 6 _____ cost. While SSDs are great, they are not the best option for every scenario. This article 7 _____ the differences between hard disk

drives (HDDs) and solid-state drives (SSDs). This article compares and
8 _____ HDD vs SSD speed, lifespan, and reliability.

THE PRESENT INDEFINITE TENSE

V¹ (V_s¹)

I (you, we, they) write (translate)	
He (she, it) writes (translates)	
Do you write (translate)?	Yes, I do. No, I don't.
Does she write (translate)?	Yes, she does. No, she doesn't.
I do not (don't) write (translate)	
She does not (doesn't) write (translate)	

Теперішній неозначений час утворюється з інфінітива (неозначена форма дієслова) без частки to (to read — I, you we, they read); у третій особі однини до форми інфінітива додається закінчення s / es (to read — he, she, it reads, to wish – he, she, it wishes). **Теперішній неозначений час** вживається для вираження регулярної, повсякденної дії, що відбувається щодня, щотижня, щомісяця, щороку в теперішньому неозначеному часі.

Слова–показники: always, often, seldom, sometimes, every (day, week, month, year).

Структура стверджувального речення

Іменник/ займенник + дієслово + інші частини мови

I (you, we, they) write (translate) a book.

He (she, it) writes (translates) a book.

Структура запитального речення

Допоміжне дієслово (do/does) + іменник/займенник + основне дієслово + інші частини мови

Do you write (translate) a book?	Yes, I do. No, I don't.
Does she write (translate) a book?	Yes, she does. No, she doesn't.

Структура заперечного речення

Іменник/ займенник + допоміжне дієслово (do/does) + частка not + дієслово + інші частини мови

I do not (don't) write (translate) a book.

She does not (doesn't) write (translate) a book.

THE EXERCISES

EX.1 ANSWER THE QUESTIONS ACCORDING TO THE MODEL:

*Model: What does the teacher do?
 — He teaches.*

What does an architect do?

What does a tractor-driver do?

What does a builder do?

What does a type-setter do?

EX.2 ASK QUESTIONS ON THE WORDS IN BOLD TYPE:

*Model: Her parents spend much time at work.
 — Whose parents spend much time at work?*

1. Great Britain lies in the eastern part of the Atlantic Ocean. 2. The sea surrounds the British Isles. 3. The pupils of our form go in for sport. 4. She reads many books. 5. He likes to write long letters. 6. The Severn is the longest river in Great Britain. 7. Usually I clean my room on Saturday. 8. Shakespeare's plays and poems are the monument of a remarkable genius. 9. The sun rises in the East. 10. Water freezes at zero. 11. I hear somebody's voice in the distance.

EX.3 ANSWER THE QUESTIONS:

1. Are you a student? 2. How old are you? 3. What language do you study? 4. What language does your brother (sister) study? 5. Where do you learn to speak English? 6. What do you do at the English classes? 7. How do you work at your English? 8. How often do you have English classes? 9. How many classes a week do you have? 10. Do you learn English poems by heart? 11. Can you speak English well? 12. Do you make many mistakes? 13. When do you take an

exam in English? 14. Can you read in English without the dictionary? 15. Do you like English? Why?

EX.4 MAKE THE SENTENCES NEGATIVE:

1. We study French. 2. Your sister has English classes every day. 3. There are many mistakes in your work. 4. You get up at 10 o'clock. 5. Your friend always does something in the evening. 6. We must go there every day. 7. The girl likes to spend her free time in the yard. 8. You speak Chinese very well.

EX.5 PUT QUESTIONS TO THE MISSING PARTS OF THE FOLLOWING SENTENCES:

Model: *He plays the piano...*
 — *How does he play the piano?*

1. They know 2. We read, translate and do exercises at 3. My friend speaks ... well. 4. I come home from university at.... 5. I learn new material 6. They often write letters to 7. They go to the Crimea ... a year. 8. We speak ... at our English classes. 9. I don't understand him because

EX.6 TRANSLATE THE FOLLOWING INTO ENGLISH:

1. Моя сім'я мешкає в Одесі. 2. Звичайно ми відвідуємо наших родичів влітку. 3. Він добре говорить англійською мовою. 4. Мій брат працює на заводі, а сестра — студентка. 5. Наш сусід добре водить машину. 6. Де Олег? Чому його немає вдома? Він в бібліотеці. Він завжди ходить в бібліотеку по п'ятницях. 7. Хто твоя мати? Лікар. Вона працює у лікарні. 8. Скільки кімнат у вашій квартирі? Три. 9. Яка гора найвища в світі? 10. Дніпро — одна з найдовших річок України, чи не так? 11. Твій батько робочий? 12. Скільки тобі років? 13. Як часто ти відвідуєш свою подругу? 14. Чи буваєш ти у краєзнавчому музеї? Як часто? 15. Столицею якої країни є Лондон? 16 Якою мовою розмовляють у Новій Зеландії? 17. Які п'ять англійських країн ти знаєш? 18. Які книги ти любиш читати? 19. Які книги люблять читати твої батьки? 20. Твоя сестра вчиться чи працює?

EX.7 ASK QUESTIONS AS IN THE MODEL:

Model: *Ask your friend where he lives. — Where do you live?*
 Ask your friend where his aunt lives. — Where does your aunt live?

Ask your friend:

1. when he gets up;
2. where he has his breakfast;
3. when he goes to school;
4. how many classes a day he has;
5. where his brother (sister) study;
6. what kind of books he likes to read;
7. what kind of TV programmes he likes to watch;
8. where his relatives live;
9. when he visits his relatives;
10. where he goes when he has free time;
11. what he usually does in the evening;
12. when he goes to bed.

EX.8 MAKE THE DIALOGUE COMPLETE:

- Is Saturday your day off?
 — ...
 — Do you get up early on your day off?
 — ...
 — Does it take you long?
 — ...
 — Then you wash and dress, don't you?
 — ...
 — Does your mother prepare breakfast for you?
 — ...
 — What do you do when the weather is fine?
 — ...
 — And what do you usually do when the weather is bad?
 — ...
 — Where do you spend your day off in winter?
 — ...
 — Do you have a good time there?
 — ...
 — Do you come home late?
 — ...
 — Do you watch TV or listen to the music in the evening?
 — ...
 — When do you go to bed?
 — ...

EX.9 COMMENT ON THE USE OF THE PRESENT INDEFINITE TENSE:

1. If Shakespeare's plays are the monuments of a remarkable genius, they are also the monument of a remarkable age. (Salinger)
2. "So, it all passes", he was thinking; "passes and begins again". (Galsworthy)
3. Phuong's in the milkbar... She always goes there. At eleven thirty. (Greene)
4. "I suppose the doctor comes?" — "Every morning". (Galsworthy)
5. When we go to the bridge, it will be by another way. (Hemingway)
6. "Edward", said Miss Murdstone, "let there be an end of this. I go tomorrow." (Dickens)
7. "You do not leave tomorrow, sir?" (Meredith)
8. "That's the way she always talks" (Twain)
9. "I'm so careless. I always leave my bag about." (Maugham)
10. "He takes such care of me, besides!" said Barnaby. "Such care, mother! He watches all the time I sleep; and when I shut my eyes and make believe to slumber, he practises new learning softly; but he keeps his eye on me the while, and if he sees me laugh, though never so little, stops directly..." (Dickens)

Unit 2 The Internet

Text 1. The Internet in the modern world

The Internet is without doubt one of the most important inventions in history. It was started in 1968 by the US government, but at first it was used mainly by scientists. Since 1990, when the World Wide Web was created, it has changed the world, and its uses are growing every day. The Internet is a network (several networks, in fact) of millions of computers around the world, connected by phone lines, satellite or cable, so that all the computers on the net can exchange information with each other. The Internet is not the same thing as the Web. The Internet links computers, and the World Wide Web is a system which links the information stored inside these computers. A company or organization stores its information in electronic documents on one of the Internet computers, somewhere in the world. This computer space – the company's web site – has an address, in the same way that every telephone has a number. To visit a web site, you simply enter the address. Your computer is connected to the web site, a document is downloaded, and a page appears on your computer screen.

As more and more technology is integrated into everyday life, it is necessary to be aware of many negative effects of the Internet that can cause personal and professional harm, and may be leading to an erosion of morals, ethics, and basic principles. The Internet's vast reach, constantly changing technologies, and growing social nature have made users vulnerable to identity theft including scam (email fraud to obtain money or valuables), plagiarism (theft of intellectual property), privacy

violations, such as cyberstalking (online harassment or abuse, mainly in chat rooms or newsgroups) and cyberbullying (including slander or libel) addiction (involving online gambling, gaming and shopping and compulsive surfing on the Web) and lack of face-to-face communication. The Internet also exerts negative effects on business. Piracy, the illegal copying and distribution of copyrighted software, information, music and video files, is widespread. The popularity of file swapping networks, where people are able to illegally download music and films onto their home computers for free, has caused sales of music CDs to drop. The music companies have responded by taking the downloaders to court and putting anti-copying software onto their CDs, both of which are very unpopular with the public. Crackers, or black-hat hackers, are computer criminals who use technology to perform a variety of internet-based crimes. The most common type of crime involves malware. Malware (short for malicious software) is a general term used to refer to a variety of forms of hostile, intrusive, or annoying software. It is software created by crackers to disrupt computer operation, gather sensitive information, or gain access to private computer systems. Malware includes computer viruses, spyware, worms, Trojan horses, adware, phishing, pharming, and most rootkits.

Exercise 1. Translate the following words:

malware, anti-copying software, downloader, file swapping network, online gambling, compulsive surfing, cyberstalking, slander, phishing, rootkits;

комп'ютерні злочинці, залежність, брак спілкування віч-на-віч, нав'язливе ПЗ, плагіат, шахрайство, шпигунське ПЗ, професійна шкода, руйнування принципів.

Exercise 2. Determine and correct false sentences:

1. Spyware is a software created by crackers to gather sensitive information and gain access to private computer systems.
2. Scam is an email fraud to obtain money or valuables.
3. Plagiarism is a creation of intellectual property.
4. Cyberstalking is an online harassment or abuse.
5. Cyberbullying is a process of internet-addiction involving online gambling, gaming and shopping.
6. Malware includes different applications like games, weather reports, shops etc.
7. In 2000 the World Wide Web was created.
8. The Internet is the same thing as the Web.

9. Positive effects of the Internet can cause personal and professional harm, and may be leading to an erosion of morals, ethics, and basic principles.
10. The music companies respond to illegal download of music and films by taking the downloaders to court.

Exercise 3. Answer the following questions:

1. When was the Internet started?
2. What is the Internet?
3. What is a relation between the Internet and the World Wide Web?
4. What do you need to enter a web-site?
5. How do you understand compulsive surfing on the Web?
6. How do you understand gambling?
7. What made users vulnerable to identity theft?
8. What are negative effects of the Internet?
9. What is a malware?
10. How do the music companies respond to piracy?

Exercise 4. Insert the missing words from the box below:

wires server website share communities rely on connections
request network features

It's important to realize that the Internet is a global 1 _____ of physical cables, which can include copper telephone 2 _____, TV cables, and fiber optic cables. Even wireless 3 _____ like Wi-Fi and 3G/4G 4 _____ these physical cables to access the Internet.

When you visit a website, your computer sends a 5 _____ over these wires to a server. A 6 _____ is where websites are stored, and it works a lot like your computer's hard drive. Once the request arrives, the server retrieves the 7 _____ and sends the correct data back to your computer. What's amazing is that this all happens in just a few seconds!

One of the best 8 _____ of the Internet is the ability to communicate almost instantly with anyone in the world. Email is one of the oldest and most universal ways to communicate and 9 _____ information on the Internet, and billions of people use it. Social media allows people to connect in a variety of ways and build 10 _____ online.

Text 2. Truth and the Internet

Truth is a powerful solvent. Stone walls melt before its relentless might. The Internet is one of the most powerful agents of freedom. It exposes truth to those who wish to see it. It is no wonder that some governments and organizations fear the Internet and its ability to make the truth known.

But the power of the Internet is like a two-edged sword. It can also deliver misinformation and uncorroborated opinion with equal ease. The thoughtful and the thoughtless co-exist side by side in the Internet's electronic universe.

There are no electronic filters that separate truth from fiction, to sort the gold from the lead. We have but one tool to apply: critical thinking. This truth applies as well to all other communication media, not only the Internet. Perhaps the World Wide Web merely forces us to see this more clearly than other media. The stark juxtaposition of valuable and valueless content sets one to thinking. Here is an opportunity to educate us all. We truly must think about what we see and hear. We must evaluate and select, choose our guides to prepare for a new century of social, economic and technological change.

Let us make a resolution to think more deeply about what they see and hear. That, more than any electronic filter, will build a foundation upon which truth can stand.

Exercise 1. Translate the following words:

solvent, relentless might, uncorroborated opinion, make a resolution, build a foundation, valuable and valueless content; двосічний меч, дезінформація, вдумливий, бездумний, суворе зіставлення, критичне мислення.

Exercise 2. Answer the following questions:

1. Why the Internet is one of the most powerful agents of freedom?
2. Why is the Internet compared to a two-edged sword?
3. What can help us to separate truth from fiction?
4. Do you agree that the World Wide Web forces us to see this more clearly than other media?
5. How can we build a foundation of truth in our thinking?

THE PAST INDEFINITE TENSE

V²

I (you, she, he, it, we, they) wrote (translated)

Did you write (translate)?	Yes, I did.
	No, I didn't.

I did not (didn't) write (translate)

Минулий неозначений час стандартних (правильних) дієслів утворюється шляхом додавання до інфінітива дієслова без частки to закінчення –ed, а нестандартних дієслів шляхом змінювання кореневої голосної або приголосної: to begin-began, to make-made або іншими способами.

Минулий неозначений час вживається для вираження регулярної, повсякденної дії, що відбувалася вчора, на минулому тижні, минулого місяця, минулого року або виражає ряд послідовних дій, що відбувалися у минулому часі.

Слова-показники: yesterday, the day before yesterday, last (day, week, month, year).

Структура стверджувального речення

Іменник/ займенник + дієслово у другій формі+інші частини мови

I (you, we, they) wrote (translated) a book.

He (she, it) wrote (translated) a book.

Структура запитального речення

Допоміжне дієслово (did)+іменник/займенник + основне дієслово+ інші частини мови

Did you write (translate) a book?	Yes, I did
	No, I didn't.
Did she write (translate) a book?	Yes, she did
	No, she didn't.

Структура заперечного речення

Іменник / займенник + допоміжне дієслово did + частка not + дієслово + інші частини мови

I, you, we, they, he, she, it (did not (didn't) write (translate) a book.

THE EXERCISES

Ex. 1 FORM THE PAST INDEFINITE OF THE FOLLOWING VERBS:

Jump	sing	enjoy	cook	read	prepare
Take	carry	hurry	clear	go	make
Sit	look	shout	write	swim	have
Wash	spend	lead	repair	translate	wear
Catch	lend	take	give	find	do

Ex. 2 CHANGE THE PRESENT INDEFINITE INTO THE PAST INDEFINITE:

1. My friend lives in Kiev. 2. I like to spend much time in the open air. 3. I don't know her new address. 4. Does your brother speak English? 5. Do you often go to the theatre? 6. I often visit my grandparents. 7. His relatives live in America. 8. The pupils write dictations twice a week. 9. The librarian gives us interesting books and magazines. 10. Many tourists come to our town in summer. 11. My elder sister is a student. 12. He does his homework after dinner.

Ex. 3 MAKE THE FOLLOWING INTERROGATIVE AND NEGATIVE:

1. The teacher explained a new rule. 2. Yesterday we wrote a dictation. 3. The children spent the whole day in the park. 4. We reached the village before dark. 5. The student passed the examination successfully. 6. The pupils of our form went to the museum last week. 7. I lived in the Crimea last year. 8. We did the work in time. 9. She told us the truth. 10. I could speak and write English perfectly. 11. My friend learned Shakespeare's poem by heart. 12. We worked in the garden two days ago. 13. He was my best friend. 14. There were flowers in her hand.

Ex. 4 ANSWER THE FOLLOWING QUESTIONS:

1. Where were you yesterday? 2. What did you do last Sunday? 3. When were you at the cinema last time? 4. When and where were you born? 5. What did you do in the morning yesterday? 6. Where did you go after dinner yesterday? 7. Did you write a composition at the last English lesson? 8. Did you learn new grammar rules at the last English lesson? 9. Did you get a good or bad mark yesterday?

Ех. 5 TRANSLATE INTO ENGLISH:

1. Вчора я прийшов пізно з бібліотеки. 2. Минулого тижня студенти нашої групи їздили на екскурсію до Львова. 3. Цей письменник написав багато цікавих пригодницьких історій. 4. Що ви робили на занятті з англійської мови вчора? Ми писали диктант, перекладали новий текст і описували картину. 5. Наша команда виграла гру на минулому тижні. 6. Що ти робив увечері вчора? Я допомагав мамі по господарству. 7. Ми їздили в Карпати під час зимових канікул. 8. Вчора мій друг купив декілька нових марок для своєї колекції. 9. Студенти закінчили експеримент вчасно. 10. Я почав вивчати англійську мову три роки тому. 11. Ми склали іспит з історії минулого тижня.

Ех. 6 MAKE THE DIALOGUE COMPLETE:

- When did your working day begin yesterday?
- ...
- When did you get up?
- ...
- Did your mother wake you up?
- ...
- Did you make your bed?
- ...
- What did you do then?
- ...
- What did you have for breakfast?
- ...
- When did you leave home?
- ...
- Did you go to school on foot or by bus?
- ...
- When did your school begin?
- ...
- How many classes did you have yesterday?
- ...
- What marks did you get yesterday?
- ...
- What did you do when your classes were over?
- ...
- When did you come home?
- ...

- Did you go for a walk after dinner?
- ...
- What did you do in the evening?
- ...
- When did you go to bed?
- ...

Ex. 7 PUT QUESTIONS TO THE UNDERLINED WORDS:

1. George Meredith was born in 1828 and died in 1909.
2. When a boy, Rudyard Kipling lived in India.
3. Robert Burns' father worked hard to make both ends meet.
4. Richardson wrote his novels in the form of a series of letters.
5. Shelly and Byron met in Switzerland in 1816.
6. Keats devoted his life entirely and passionately to poetry alone.
7. Daniel Defoe published his famous book "Robinson Crusoe" when an elderly man.

Ex. 8 REPORT ON THE ACTION YOU COMPLETED:

Model: Your mother told you to open the window, dust the things in the room and wash the floor. Say what you did.

— *I opened the window, dusted the things in the room and washed the floor.*

1. You promised to go to the kindergarten, take your little sister (brother) out, walk with her (him) in the park and bring her (him) home. Say what you did.
2. Our teacher asked us to learn a poem by heart, read the text of Lesson 2 and do Exercise 27. Say what we did.
3. I asked my friend to take the prescription, go to the chemist's, get the medicine and give it to my sick sister. Say what he (she) did.
4. Your teacher told you to go to the library, take some books on Ukrainian history and prepare a report about the Great Patriotic War. Say what you did.

Ex. 9 ANSWER THE QUESTIONS:

1. You watched the TV program yesterday, didn't you?
2. What did you have for breakfast?
3. How many pupils took part in your last sport competition?
4. Where did you live 5 years ago?
5. What did you have on yesterday?
6. Who of your friends went to Sochi to rest last summer?
7. How many classes did you have last Wednesday?

Ex.10 TRANSLATE INTO UKRAINIAN. COMMENT ON THE USE OF THE PAST INDEFINITE TENSE:

1. Lord Goring, "My father told me to go to bed an hour ago." (Wilde)
2. They crossed the level at a sharp pace and began mounting the rise. (Galsworthy)
3. Every evening the fisherman went out upon the sea and threw his nets into the water. (Wilde)
4. By April Fools' Day the plum blossom was fully out in all the orchards along the vale. (Moore)
5. The music stopped and Pyle bowed stiffly to Phuong, then led her back and drew out her chair. (Greene)
6. He flung his fists up in the air, cried out, "I won't be mad!" and rolled over on his face. (Galsworthy)
7. While she stood hesitating, the door opened, and an old man came forth shading a candle with one hand. (Hardy)
8. "When did you last see Pyle?"... "When he came here", she said. (Greene)
9. Her lips were soft, trembling. But her eyes smiled. (Cronin)
10. When I stood up the two soldiers stopped eating. (Greene)

Unit 3 IT company

Text 1. Human Resource Management process

Human Resource Management (HRM) process is a strategic approach which helps the business or the organization to achieve the competitive advantage by maximizing the performance of employees. It indirectly contributes achieving the goals of organization. It implies selecting, recruiting, training, appraisals of employees, providing orientation, benefits, compensation, security and safety in compliance with labour laws of the particular country or government. HRM process includes the following:

1. Recruitment: Recruitment process of a company depends on the human resource management which issues recruitment notifications through websites, newspapers & articles. Recruitments are of two types, internal and external. Internal recruitment is when the organization recruits candidates within its workforce. Whereas, external recruitment process refers when the company or organization recruits eligible candidates outside its workforce.

2. Selection: Selection is the second step of the HRM process in which, an organization selects candidates based on eligibility criteria which includes knowing particular work and having particular skill, education, attitude. Selection process often includes two to three stages, such as preliminary interview, screening of applicants, employment tests, selection interview etc.

3. Training: Optimizing cost and helping to maximize the efficiency of selected candidates is one of the prime roles HRM. The HRM process helps to identify the training needs, preparing the training programme and implementing it and also preparing the learners.

Job training are of two types, on the job and off the job training. On the job training is the training which is provided at the workplace and with the equipment which is at the office itself. It includes job rotation, coaching, job instruction through step by step or by assigning particular work.

4. Assessing performance: Assessing performance of an employee is conducted through comparing the efficiency of the present employee and the standard which has already been set previously by the organization itself. The HRM also gives feedback to the employees so that they can improve themselves as per the requirement of the organization. Whereas, performance appraisal is aimed to determine whether the employees will be promoted or demoted.

5. Motivating: Motivating comes under the clause when a person completes the task, he will get a reward of fulfilment. HRM often motivates employees to do better by giving them rewards and recognition and other benefits, such as different allowances and perks other than mentioned in the payslip.

6. Compensating: Before compensating the employees for their work, the HRM needs to assess the work carefully so that it doesn't negatively impact the financial budget of the organization.

7. Maintaining Labour Relations: The management develops the policies related to employee relations that should be proper and healthy. They also take the responsibility of the employee-employer relationship dispute to resolve.

8. Healthy welfare and safety: HRM has to ensure proper safety and healthy environment to work for the employees under law. Such as ensuring proper cleanliness, drinking water, ventilation and temperature, disposal of waste and effluents, lighting, first aid appliances, washing, canteen, lunch room etc.

Lastly, we can conclude that, HRM is an important segment of a company through which new eligible workforce is recruited and trained. It plays a crucial role in almost every aspect and contributes in the overall development of an organization.

Exercise 1. Translate the following words:

recruit, allowances, perks, payslip, effluents, to assess the work, performance appraisal, gives feedback, requirement, demoted, workforce, eligibility, job rotation; призначити роботу, ключова роль, чистота, оцінити роботу, негативно впливати, оцінити продуктивність працівника, обладнання, належні відносини.

Exercise 2. Determine and correct false sentences:

1. HRM often demotivates employees to do better by not giving them rewards and recognition and other benefits.
2. On the job training is the training which is provided at the workplace.
3. HRM doesn't usually contribute achieving the goals of organization.
4. Selection process often includes more than five stages.
5. Internal recruitment is when a manager chooses candidates for a needed position within present employees.
6. Optimizing cost and helping to maximize the efficiency of selected candidates is one of the minor roles of HRM.
7. External recruitment process refers when the company or organization recruits only foreign eligible candidates.
8. The HRM prepares the training programme and implements it, but doesn't prepare the learners.
9. Compensating the employees for their work negatively impacts the financial budget of the organization.
10. HRM develops the policies related to the establishment of proper and healthy relationships in the company.

Exercise 3. Answer the following questions:

1. What is a Human Resource Management process?
2. What are its basic elements?
3. How can you assess the performance of an employee?
4. What is the difference between on the job and off the job training?
5. What are components of healthy work environment?
6. How can you support proper labour relations?
7. What are the stages of a selection process?
8. What are the types of recruitments?
9. How does HRM motivates employees?
10. Why does HRM play a crucial role in the overall development of an organization?

Exercise 4. Insert the missing words from the box in the following text:

Incentive programs	Workforce operations	Professional development
Performance measurement	Job analysis	

Key human resource management functions include:

1. _____ Determining the skills and experience necessary to perform a job well may make it easier to hire the right people, determine appropriate compensation and create training programs.
2. _____ Creating health and safety policies, responding to employee grievances, working with labor unions, etc., can help support regulatory compliance.
3. _____ Evaluating performance is important because it not only fosters employee growth through constructive feedback, but also serves as a guide for raises, promotions and dismissals.
4. _____ Recognizing achievements and rewarding high performers with bonuses and other perks is a proven way of motivating employees to take ownership of business objectives.
5. _____ From orientation to advanced educational programs, employee training serves to improve productivity, reduce turnover and minimize supervisory needs.

Exercise 5. Match the main HRM functions with their definitions:

Employee relations –	a) identifying talent gaps, acquiring applicants, arbitrating contracts, maintaining ethical hiring practices
Compliance and safety –	b) determining pay scales, approving raises, negotiating benefits packages
Training and development –	c) resolving employee conflicts, addressing harassment or abuse allegations, working with union leaders
Compensation and benefits –	d) monitoring legislative changes, implementing safety measures, processing workers' compensation claims
Recruitment –	e) onboarding new hires, making educational opportunities available

Text 2. IT implementation in different spheres

Information technology now has an influence on all aspects of modern business practice, including science, for example medicine, marketing, finance, stock control, communications, human resources, education, traffic control, logistics, show-business, cinema, sport etc.

Medicine Healthcare Information Technology (HIT)

HIT refers to the secure use of technology to manage health-related information. The most common examples of healthcare information technology are e-prescriptions, electronic health records (EHRs), and other tech tools that help patients meet health goals such as managing blood sugar levels or quitting smoking. Information technology has paved the way for more accurate EHRs/ EMRs that help patients gain quick and easy access to various healthcare facilities. Additionally, it has given patients more control over their health through various mobile apps and information platforms.

Healthcare information technology's primary purpose is to maintain privacy while improving patient care. HIT enables medical professionals to not only take better care of patients but also improve their communication with patients.

A few examples of Health IT are: computerized disease registries, consumer health IT applications, electronic prescribing, electronic medical record systems such as EMRs, EHRs, and PHRs etc.

Marketing

The practice computer system can be a valuable marketing tool. Once you have your database, it can be put to many uses, such as: reminders and recalls, personalized letters and handouts, desktop publishing. Mail-merge facilities make it easy to produce personalized handouts and colourful letters. Marketing indices, run by a number of veterinary companies, allow comparison of marketing data with other practices. The 'performance indicators' used include figures such as client retention and turnover, average transaction fees and many more.

Finance

Small practices may manage their finances by using their bank statements and a file of invoices 'to pay'. However, if you are doing any form of management accounting beyond comparing month-end bank balances, at some point you will be adding up payments made. Even if you do not do all the year-end adjustments in-house, you may find significant savings in your accountancy bill if you can send them compatible files by e-mail or disk.

Banking

Banking by computer has become very popular, driven by the need for instant information at any time of day. The ability to check the account balances easily and to know which transactions have been processed allows tight control of cashflow.

Accepting payments by direct debit or swipe machine will save on banking time and charges and reduce the risk of loss or theft of practice funds.

There are two slightly different ways of using computer systems for your practice banking – *computer banking* and *internet banking*.

Computer banking involves directly dialling your bank and transferring information about your account. Your bank will supply you (or sell you!) their specific banking software to install on your computer. This means that you can only access your account from the computer that has this software installed. If you have accounts with several different banks, you need separate software for each one. On the positive side, having the software on the computer means that you can set up all the transactions you want to make before dialling in.

Internet banking works quite differently. You log onto the internet through your normal service provider and then log onto the bank site. The banking software is all held on the bank's own website, so you can access your accounts from any computer. The downside of this method is that you do not have any access to information and cannot set up payments offline. It is also susceptible to any disruptions to your internet connection. At one point, internet banking was viewed as less secure than direct dial-up computer banking. Many banks offer high-interest current or deposit accounts that can only be run using the internet.

Exercise 1. Translate the following words:

e-prescriptions, gain quick access to, healthcare facilities, disease registry, handouts, mail-merge, compatible file, accountancy, dialling in, log onto the site, disruptions;

база даних, рекламні проспекти, комп'ютерна верстка, віддалений банкінг, недолік метода, чутливий до, розглядатися як, високопроцентні рахунки.

Exercise 2. Determine and correct false sentences:

1. The most common examples of healthcare information technology are e-prescriptions, electronic health records.
2. The 'performance indicators' used include figures such as client preferences and maximal transaction fees.
3. First you log onto the bank site and then you log onto the internet through your service provider.
4. Accepting payments by post will save on banking time and charges and reduce the risk of loss or theft of practice funds.
5. The downside of the internet banking is that you can't set up payments offline.
6. Computer banking and internet banking are the same facilities.
7. Internet banking was viewed as less secure than direct dial-up computer banking.
8. Your internet provider will supply you (or sell you!) their specific banking software to install on your computer.
9. If you have accounts with several different banks, you don't need to separate software for each one.

10. The ability to check the account balances easily allows strong control of cashflow.

THE FUTURE INDEFINITE TENSE

shall will + V ¹	
I (we) shall write (translate)	
You (she, he, it, they) will write (translate)	
Will you write (translate)?	Yes, I shall No, I shan't
I shall not (shan't) write (translate)	
You will not (won't) write (translate)	

Майбутній неозначений час виражає одноразову дію або стан, багаторазову дію або ряд послідовних дій, що будуть відбуватися завтра, майбутнього тижня, місяця, року, тобто у майбутньому часі.

Майбутній неозначений час утворюється за допомогою допоміжних дієслів shall для (I, we) will (you, they, he, she, it) та інфінітива основного дієслова без частки to.

Слова–показники: tomorrow, the day after tomorrow, next (day, week, month, year).

Структура стверджувального речення

Іменник/ займенник + shall, will + дієслово + інші частини мови

I (we) shall write (translate) a book.

You (she, he, it, they) will write (translate) a book.

Структура запитального речення

Допоміжне дієслово (shall, will) + іменник/займенник + основне дієслово + інші частини мови

Will you write (translate) a book?

Yes, I shall.

No, I shan't.

Will he, she (they) write (translate) a book?

Yes, he, she (they) will.

No, he, she (they) won't.

Структура заперечного речення

Іменник / займенник + допоміжне дієслово shall, will + частка not + дієслово + інші частини мови

I, we shall not (shan't) write (translate) a book.

You (he, she) will not (won't) write (translate) a book.

THE EXERCISES

Ex. 1 CHANGE THE FOLLOWING INTO THE FUTURE INDEFINITE:

Model: I visit my grandparents on Sunday.

— *I shall visit my grandparents on Sunday.*

She cleaned the flat in the evening.

— *She will clean the flat in the evening.*

1. I go to the theatre on Sunday. 2. My father works at a big plant. 3. We left for the North in autumn. 4. She spent much time in the library. 5. I help my parents in the afternoon. 6. We began the work in time. 7. My cousin helped me much with this article's translation. 8. The pupils wrote a composition at the last English lesson. 9. I plant a lot of flowers in spring. 10. She visits her aunt on Saturday.

Ex. 2 MAKE THE FOLLOWING INTERROGATIVE AND NEGATIVE:

Model: They will plant a lot of trees in spring.

— *Will they plant a lot of trees in spring?*

— *They won't plant a lot of trees in spring.*

1. We shall meet them at the railway station. 2. She will give you a good advice. 3. They will go to Poland next month. 4. My brother will be on leave in May. 5. He will go to the post-office to wire to his mother. 6. Tomorrow they will be far from here. 7. I shall give her a valuable present. 8. It will rain hard in the afternoon. 9. You will see a beautiful park near the lake. 10. I shall be glad to see you again.

Ex. 3 ANSWER THE FOLLOWING QUESTIONS:

1. At what time will you get up tomorrow?
2. When will you go to school?
3. How many classes will you have tomorrow?
4. What will you do after dinner?
5. When will you have dinner?
6. What will you do after dinner?
7. Will you help your mother about the house in the afternoon?
8. What will you do in the evening?
9. When will you go to bed?

Ex. 4 COMMENT ON THE USE OF THE FUTURE INDEFINITE AND THE PRESENT INDEFINITE AFTER IF AND WHEN IN THE FOLLOWING SENTENCES. TRANSLATE THE SENTENCES INTO UKRAINIAN:

1. When will he come home?
2. I shall be very glad if he comes soon.
3. If he comes home early, we shall go to the cinema.
4. I don't know when he will come home.
5. I want to know if he will come home early today.
6. I am interested to know when he will do it.
7. When will he do it?
8. If she does her work well, everybody will praise her.
9. When she finishes her work, she will have a good rest.
10. I don't know if she will do her work in time.
11. If you learn about it, tell me at once.
12. When will you learn about it?

Ex. 5 TRANSLATE INTO ENGLISH:

1. Ми підемо на концерт сьогодні ввечері. 2. Наступного тижня наша футбольна команда братиме участь у міських змаганнях. 3. Я прийду сюди за годину. 4. Моя сестра закінчить університет наступного року. 5. Де ти проведеш зимові канікули? 6. Я подзвоню тобі, якщо матиму час. 7. Наступного місяця мій брат отримає паспорт. 8. Ми писатимемо твір на наступному уроці англійської мови. 9. Після обіду я пограю на піаніно. 10. Багато туристів відвідає наше місто влітку. 11. Після закінчення школи я працюватиму на текстильній фабриці. 12. Декілька концертів цього відомого співака відбудеться наступного місяця у Києві.

Ex. 6 TRANSLATE INTO UKRAINIAN. COMMENT ON THE USE OF THE FUTURE INDEFINITE TENSE:

1. "If you eat, I shall eat with you; if you don't, neither shall I." (Stevenson)
2. "I'll give you the address of someone who will help you when you get to Cape Town." (Abrahams)
3. We'll leave the minute you're ready.
4. "We'll take a holiday when we sell out here." (Cronin)
5. "How will you get on without a team?" Roy said unhappily. "I won't get on unless you give me a hand." (Aldridge)
6. "Alice has unpacked for you and will look after you until your maid arrives," said Mrs. Danvers. (Du Maurier)
7. "I'll come when you have no one else." (Eliot)
8. "I shall leave it to the boatswain to do that when you're in the navy," said Clara. (Meredith)
9. "I'll see you before I go, Pyle." (Greene)
10. "He won't surprise me till he's perfect." (Dickens)

Unit 4. IT professions

Text 1. Professions in IT

IT and its underlying infrastructure power every aspect of modern businesses, governments, militaries and economies. IT infrastructure professionals are in high demand, and those interested in pursuing that career path can expect to enjoy highly rewarding careers if they develop the right skills and abilities.

IT infrastructure includes various operational areas that usually require specific knowledge and skill sets, including: server management, storage management, security management, IT help desk, application support, IT asset management, monitoring and maintenance. Actual job titles in each of these areas often vary by organization, with each title frequently carrying its own set of responsibilities.

- **Application support analyst.** Supports end users in the use of applications relevant to a business.
- **Systems operator.** Contributes to the day-to-day operations of the IT infrastructure; provides troubleshooting support.
- **System analyst.** Analyses IT hardware and software to make relevant recommendations to optimize performance.
- **Service desk/help desk/support agent specialist.** First point of contact for end-user (customer, employee, partner, etc.) support, fault reporting, ticket creation and problem resolution.
- **Network engineer/architect.** Designs and sets up networks like LANs, WANs, intranets and external connections.
- **Network/systems administrator.** Manages hardware/software installation, maintenance and data recovery.
- **Database administrator (DBA).** Sets up and maintains databases to store, organize and protect data.
- **Security management specialist.** Assesses current security posture, design systems and processes to improve security, and oversees security operations.

• **IT infrastructure project manager.** Coordinates projects to architect, design and implement enterprise infrastructure.

• **Infrastructure software manager.** Roles and responsibilities include managing and optimizing infrastructure software to support functions such as business transactions and internal services.

• **Infrastructure analyst.** Implements, maintains and tests hardware and software to ensure high availability; creates backups and redundancies; implements security checks.

• **Cloud architect.** Manages the cloud infrastructure, and designs implementation architectures and solutions.

A wide variety of organizations employ IT professionals in infrastructure jobs, including for-profit companies in every industry (start-ups, SMBs and large enterprises), telecommunications and software development companies, managed service providers (MSPs), government agencies, not-for-profit organizations, stock, security and commodities exchanges and educational institutions.

Exercise 1. Translate the following words:

fault reporting, to improve security, redundancy, SMBs, not-for-profit organizations, to be in high demand, to pursue a career path, rewarding career, IT asset management;

встановлення програмного забезпечення, зовнішні з'єднання, вирішення проблем, служба технічної підтримки ІТ, аналітик технічної підтримки додатків.

Exercise 2. Determine and correct false sentences:

1. Application support analyst supports an end-user, reports fault, resolves other problems.
2. Systems operator contributes to the day-to-day operations of the IT infrastructure; provides troubleshooting support.
3. System analyst analyses IT hardware and software to make relevant recommendations to optimize performance.
4. Service desk support agent specialist supports end users in the use of applications relevant to a business.
5. Network engineer sets up and maintains databases to store, organize and protect data.
6. Network administrator manages hardware/software installation, maintenance and data recovery.

7. Database administrator designs and sets up networks like LANs, WANs, intranets and external connections.
8. Security management specialist coordinates projects to architect, design and implement enterprise infrastructure.
9. IT infrastructure project manager assesses current security posture, design systems and processes to improve security, and oversees security operations.
10. Cloud architect runs the cloud infrastructure and designs architectures.

Exercise 3. Answer the following questions:

1. What specialities were new for you and which ones you knew before?
2. What are the most attractive ones for you?
3. Why are IT infrastructure professionals in high demand?
4. Which specific knowledge and skill sets does IT infrastructure usually require?
5. Do professions in IT vary by organization?
6. What is the difference between systems operator and systems administrator?
7. What is the difference between system analyst and infrastructure analyst?
8. What is the difference between IT infrastructure project manager and infrastructure software manager?
9. What is the difference between support agent specialist and security management specialist?
10. What is the difference between network architect and cloud architect?

Exercise 4. Insert the missing words from the box below:

***to keep up with require programs validates information certified
to take courses systems***

To enter the occupation, network and computer systems administrators typically need a bachelor's degree in a field related to computer or 1 _____ science, engineering.

These programs usually include courses in computer programming, networking, and 2 _____ design.

Network and computer systems administrators need 3 _____ developments in the constantly changing field of information technology (IT). They may continue 4 _____ throughout their careers and attend IT conferences.

Employers may 5 _____ their network and computer systems administrators to be 6 _____ in the products they use. Certification 7 _____ usually are offered directly from vendors or from vendor-neutral

certification providers. Certification 8_____ the knowledge and the use of best practices that are required of network and computer systems administrators.

Text 2. Key skills required for a successful career in IT infrastructure

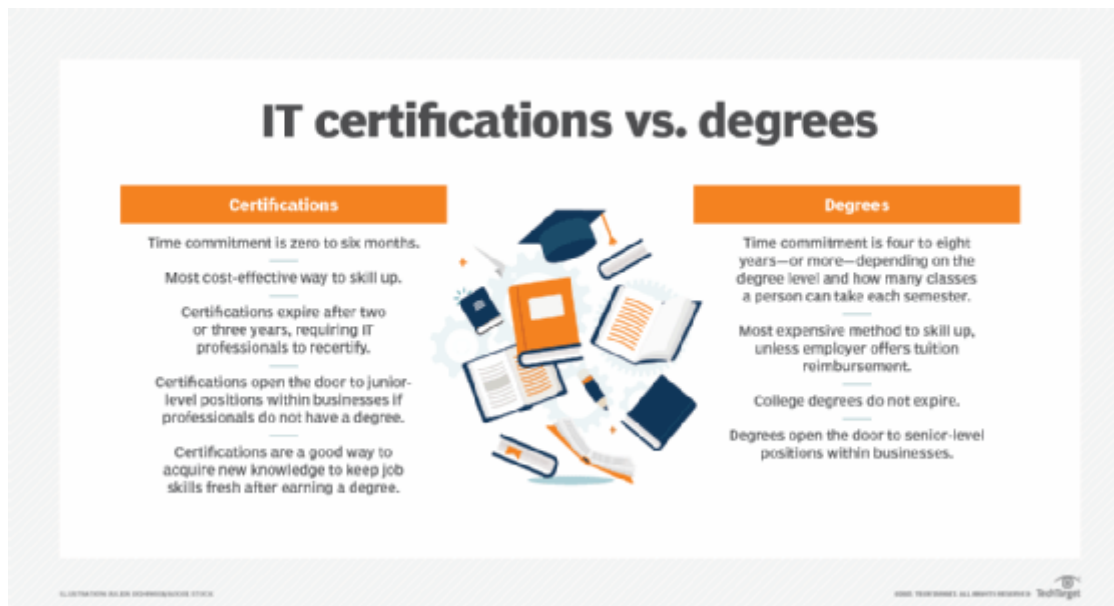
Although IT infrastructure professionals work *with* servers, switches, networks and devices, they work *for* the people who use these servers, switches, networks and devices. That's why soft skills like people management and relationship-building are equally important. These professionals - particularly those interested in pursuing a management career path - must also have these three critical skills:

Analytical and critical thinking. IT infrastructure is never a problem-free space. Issues can crop up at any time, and if they affect business continuity those issues must be addressed quickly. IT professionals with analytical and critical thinking skills can analyse these problems, find root causes and identify the best way to solve them in the fastest time possible. They can also identify patterns and trends to predict potential future issues or risks and take proactive action to mitigate these before they become truly damaging.

Problem-solving and decision-making. In addition to the ability to quickly and competently address general or one-off issues or problems, IT infrastructure professionals with broader problem-solving and decision-making skills are highly valuable. This includes the ability to gather information about issues of various complexities, understanding their technical and wider business impact and anticipating the probability of recurrence. They can also create a plan to either prevent these issues from recurring or address them quickly if they do, ensuring there is minimal impact on users and the business.

Process management. As the business landscape becomes more complex, organizations require tailored IT platforms and products to maintain operations, serve customers and gain a competitive edge. Today's IT infrastructure professionals must understand their company's specific technical and business needs, and then design and deploy technologies that can best meet those needs efficiently, affordably and with minimal downtime. Business process management skills play an important role here.

Popular IT infrastructure certificates, certifications and degrees



Because IT infrastructure professionals are in such high demand, numerous certifications, certificate programs and degree programs are available to further their knowledge and prepare them for the rigors of a career in this field. 7. Other considerations include time commitment required, potential cost and knowledge areas covered.

Degree programs cost more than certificate programs and certifications. They also take more (usually far more) time to complete. Some of the top degree programs in IT infrastructure cover: computer networking, database management, data analytics.

Certificate programs often include a series of courses, and usually cost more than certifications but less than degree programs and take longer to complete than the former but less time than the latter.

Certifications are awarded based on a candidate's knowledge and skills in a particular area of technology, so they usually require prior professional experience.

Exercise 1. Translate the following words:

relationship-building, critical skills, to crop up, identify patterns, one-off issues, anticipating the probability of recurrence, tailored IT platforms, gain a competitive edge, to further one's knowledge; кореневі причини, з мінімальним простоем, труднощі кар'єри, зобов'язання щодо часу, нагороджений, попередній професійний досвід, безпроблемний простір.

Exercise 2. Determine and correct false sentences:

1. Tech skills are more important than soft skills.
2. IT infrastructure is a problem-free space.
3. IT professionals with analytical and critical thinking skills can analyse problems, find root causes and identify the best way to solve them.
4. Decision-making skills include the ability to gather information about all possible issues even not related to the topic and drawing conclusion from it.
5. If you create a plan to prevent these issues from recurring or address them quickly, you will ensure the minimal impact on users.
6. Even if IT professionals don't understand their company's specific technical and business needs, they can design technologies that can best meet those needs efficiently.
7. IT certifications or degree programs are chosen depending on the current job, previous experience and future of a person.
8. Degree programs cost less than certificate programs and certifications.
9. Certificate programs usually cost less than certifications.
10. Certifications are given after some upgrade of a candidate's knowledge and skills in a particular area of technology.

THE PRESENT CONTINUOUS TENSE

am	
is	+V _{ing}
are	

I am writing (translating) You (we, they) are writing (translating) He (she, it) is writing (translating)

Are you writing (translating)?	Yes, I am. No, I am not.
--------------------------------	-----------------------------

You are not (aren't) writing (translating) She is not (isn't) writing (translating)
--

Теперішній продовжений (тривалий) час вживається для вираження **процесу дії**, в її розвитку, що відбувається в дану хвилину, момент, який може виражатись контекстом, ситуацією або прислівником now (зараз).

Слова-показники: at this moment, now.

Структура стверджувального речення

Іменник/ займенник + to be (am, are, is) + основне дієслово із закінченням –ing + інші частини мови

I am writing (translating) a book.

You (we, they) are writing (translating) a book.

He (she, it) is writing (translating) a book.

Структура запитального речення

Допоміжне дієслово to be (am, are, is) + іменник/займенник + основне дієслово із закінченням –ing + інші частини мови

Are you writing (translating) a book? Yes, I am.
No, I am not.

Is he (she) writing (translating) a book? Yes, he (she) is.
No, he (she) is not.

Структура заперечного речення

Іменник / займенник + дієслово to be (am, are, is) + частка not + основне дієслово із закінченням - ing + інші частини мови

I, you, we, they are not (aren't) writing (translating) a book.

She, he is not (isn't) writing (translating) a book.

THE EXERCISES

Ex. 1 MAKE THE FOLLOWING INTERROGATIVE AND NEGATIVE:

Model: *The children are watching TV.*
— *Are the children watching TV?*
— *What are the children doing?*
— *The children are not watching TV.*

1. She is playing the piano. 2. I am repeating my homework. 3. The dog is barking. 4. The mother is cooking dinner. 5. He is working in the kitchen-garden. 6. We are skating. 7. The sun is shining brightly. 8. It is raining hard.

Ex. 2 REPLACE THE INFINITIVE IN BRACKETS BY THE PRESENT INDEFINITE OR THE PRESENT CONTINUOUS:

1. Usually we (to pass) our examinations in June. 2. Where is Ania? She is in the library. She (to prepare) her report for tomorrow. 3. As a rule I (to come) to university at 9 o'clock. 4. My friend always (to help) her mother in the kitchen. 5. The pupils of our form (to take part) in the sport competition once a month. 6. She (to visit) me from time to time. 7. Look! The bus (to come) up. 8. When will you come? I (to be going) down on Friday. 9. Where are the children? They are in the yard. They (to play) ball there. 10. Why she (to cry)? 11. Where you (to go)? 12. I often (to spend) my day off in the village where my old granny (to live).

Ex. 3 TRANSLATE INTO ENGLISH:

1. Що робить черговий студент? Він витирає дошку. Зараз він поливає квіти. 2. Куди ти йдеш? Я йду в театр. Я завжди ходжу в театр у неділю. 4. Оксана — в бібліотеці. Вона готується до екзамену з англійської мови. 5. Подивись. Іде сильний дощ. Тобі треба взяти парасольку. 6. Тихо. Іде екзамен. Наша група складає іспит з історії України. 7. Мій друг збирається стати архітектором. 8. Олег вдома? Ні. Він бере участь у спортивних змаганнях. Він дуже любить спорт. 9. Батько зараз ремонтує велосипед, а мати готує вечерю. 10. Послухай! Яка чудова музика звучить по радіо! Я часто слухаю музичні програми ввечері.

Ex. 4 MAKE UP YOUR OWN SENTENCES WITH THE GIVEN WORD COMBINATIONS:

is going to
are listening to
am playing
is speaking with
are walking
is swimming
are learning
is looking for
am speaking over
is expecting

is examining
are preparing for
am consulting
is watching
is giving
am giving
are drawing
am looking up
is not feeling
are talking

Ex. 5 ANSWER THE QUESTIONS:

1. Are you answering the teacher's questions?
2. Is your sister sleeping?
3. Is your mother preparing dinner?
4. Are you playing the piano?
5. Are your friends playing chess?
6. Is your father looking through the newspapers?
7. Is the dog barking in the yard?
8. Are you doing your homework?
9. Is the sun shining in the sky?
10. Are you listening to the radio?

Ex. 6 COMMENT ON THE USE OF THE PRESENT CONTINUOUS TENSE:

1. "Are you enjoying the show?" I asked Susan. (Braine)
2. "I'm thinking about Maxim all the time," I said. (Du Maurier)
3. "Go on, Frank," he said, "What are you waiting for?" (Du Maurier)
4. "What?" he said. "I'm getting very deaf. I suppose I don't hear people ..."
(Galsworthy)
5. "Young Mako and Lanny Swartz are coming here tonight," said Isaac.
(Abrahams)
6. "Miss Dale is looking well," he said. (Meredith)
7. "I am asking Sissy a few questions, Tom," observed his sister ... "Don't interrupt us for a moment, Tom, dear." (Dickens)
8. "Surely you might give me a word of hope," he pleaded; "I am willing to wait — months — or years — if you wish it." (S. K. Hocking)
9. "And then somehow I am beginning to dread that long journey up the country." (S. K. Hocking)
10. "You are not overlooking the possibility that the husband was deliberately got out of the way — by someone who wanted to murder Mrs. Spenslow?" "You are thinking of young Ted Gerard, aren't you, sir?" (A. Christie)

Unit 5 Work in a tech company

Text 1. Top Advantages of Working in a Tech Company

Few things I enjoy as a junior developer working in a tech environment, is that I get to learn new skills every day. Upskilling, cross-skilling and new-skilling is an integral part of our everyday life as techies. Think about it as levelling up your skills. Aside from the skilling bit of it, there are other important gains that play a big role in our lives:

Teamwork. Like with any business there's always an internal competition for recognition and promotions, but that doesn't mean you and your co-workers will be spending hours scheming against each other for one of the gains one finds. Through teamwork, you can really find your tribe, either based on your role, industry or things you are passionate about.

Inclusivity. If you're worried about being cut off from the decision-makers in the organisation, you might be surprised to learn that techies often interact and collaborate with people from all levels in their organisation including senior management. This provides multiple opportunities to be in the room with a group of executives to explain business problems and share advice on how to solve them and even learn a lot from them.

Creativity. Technology may seem cut and dry at first glance, with little wiggle room for creativity. That means letting your creative side shine as you explore new approaches and ideas. Creativity and creative problem-solving can easily rival any artistic endeavours the world may put on. The tech world welcomes a passion in pursuing new ideas and finding new and best ways to accomplish a goal.

Exercise 1. Translate the following words:

junior developer, upskilling, cross-skilling, new-skilling, techies, levelling up a skill, gains, scheme against each other, inclusivity, wiggle room, artistic endeavours; командна робота, відповідальна особа, численні можливості, досліджувати нові підходи, вирішення проблем, співпрацювати з людьми, шукати ідеї, досягати мети.

Exercise 2. Determine whether these statements are true or false:

1. Upskilling, cross-skilling and new-skilling is levelling up your skills.
2. There's always an internal competition for recognition and promotions in any company and you can't find people with common interests with you.
3. Techies interact and collaborate with people from all levels in their organisation.

4. Technical creativity and creative problem-solving can't rival with any artistic endeavours from other spheres.
5. The tech world doesn't welcome a passion in finding new ideas or new ways to achieve a goal.

Exercise 3. Answer the following questions:

1. Is it possible to learn new skills every day in a tech company?
2. What is a teamwork and how can you fit in the group better?
3. What is an inclusivity and which opportunities does it provide?
4. Are all employees able to communicate with decision-makers in the organisation?
5. What is a technical creativity? How easily can you get new ideas and ways to solve a problem?

Exercise 4. Insert the missing words from the box below:

<i>meritocracy software inbound commitment e-commerce entry-level</i>

The tech industry encompasses several business sectors, like 1 _____, internet 2 _____ and services, financial technology, consumer electronics, programming or digital communications. Many 3 _____ positions are technical support roles, so you may be responsible for answering 4 _____ calls and performing troubleshooting to assist users remotely. This may involve collaborating with other IT specialists on projects or for user issue resolution.

The tech industry mainly favours 5 _____, which encourages employees to focus on their abilities as opposed to their experience level. This concept can promote a positive and collaborative workplace and show a company's 6 _____ to employee satisfaction.

Text 2. Considerations for Working in Tech

1. Industry growth which may offer professionals an opportunity to advance their careers and enjoy job security.

2. Company culture includes a commitment to and prioritization of each employee's happiness.

3. Opportunity to develop skills working on a variety of projects.

4. Meritocracy refers to the effort and value that people can make notwithstanding their origin. There's a need for new leaders and innovative thinkers.

5. Real-world change. You're able to solve real-world problems to make an impact on the world.

6. Ability to work anywhere as there are tech jobs all over the country offline or remotely, individually or in a team.

7. Good benefits. Many tech companies provide great benefits, such as paid time off, paid volunteer time, insurance and flexible work hours.

8. Shared goals. Many tech companies emphasize the importance of working together and supporting each other's work and abilities.

Exercise 1. Translate the following words:

job security, to advance careers, commitment, innovative thinkers, paid time off, insurance, flexible work hours, shared goals, to make an impact on.

Exercise 2. Determine whether these statements are true or false:

1. Meritocracy means that merit prevails over their origin.
2. Company culture refers to chief's benefits, e.g. his wealth and prosperity.
3. When working in Tech you don't get much benefits.
4. You can develop skills working on a variety of projects.
5. In many tech companies each other's work is supported.

THE PAST CONTINUOUS TENSE

was were	+ V ing
-------------	---------

I (he, she, it) was writing (translating) You (we, they) were writing (translating)
--

Were you writing (translating)?	Yes, I was. No, I wasn't.
---------------------------------	------------------------------

I was not (wasn't) writing (translating) You were not (weren't) writing (translating)
--

Минулий продовжений (тривалий) час вказує на **процес дії**, що відбувався, тривав в певну хвилину, момент у минулому часі.

Слова-показники: at that time, at ... (5) o'clock yesterday.

Структура стверджувального речення

Іменник / займенник + to be (was,were) + основне дієслово із закінченням –ing + інші частини мови

I was writing (translating) a book.

You (we, they) were writing (translating) a book.

He (she, it) was writing (translating) a book.

Структура запитального речення

Допоміжне дієслово to be (was, were) + іменник/займенник + основне дієслово із закінченням –ing + інші частини мови

Were you (we, they) writing
translating) a book?

Yes, I was.

No, I was not.

Is he (she) writing (translating) a book?

Yes, he (she) was.

No, he (she) was not.

Структура заперечного речення

Іменник / займенник + дієслово to be (was, were) + частка not +
+ основне дієслово із закінченням - ing + інші частини мови
I, you, we, they were not (weren't) writing (translating) a book.
She, he was not (wasn't) writing (translating) a book.

THE EXERCISES

Ex. 1 MAKE THE FOLLOWING INTERROGATIVE AND NEGATIVE:

1. It was raining hard. 2. I was playing the violin when she came in. 3. She was writing a report in the library at that time. 4. The doctor was examining the patients at 10 o'clock. 5. Their daughter was going to be a nurse. 6. They were talking about that day's weather. 7. We were preparing for the English examination the whole day. 8. My brother was speaking over the telephone when I came in. 9. The mother was knitting a pullover when her little son broke a new cup.

Ex. 2 GIVE ANSWERS TO THE FOLLOWING QUESTIONS:

1. Were you having tea when your parents came home from work?
Were you doing your homework when they came home?
What were you doing when your parents came home from work?

2. Was your father reading a newspaper when your friend rang you up?
Was your father having dinner when your friend rang you up?
What was your father doing when your friend rang you up?

3. Were you going to school when your school-mate met you in the street yesterday?
Were you going to the library when your school-mate met you in the street yesterday?
Where were you going when your school-mate met you in the street yesterday?

Ex. 3 MAKE UP SENTENCES USING THE WORDS FROM THE TABLE:

I	were listening to the music	at 3 o'clock.
The children	was reading a book	at that time.
The mother	was cooking dinner	when somebody knocked at the door.
The teacher	were passing the exam	the whole day yesterday.
The students	was watching TV	at 11 o'clock.
My friend	were doing the room	when she came in.

His parents	was explaining a new rule	when I looked through the window.
It	was raining	at this time on Sunday.

Ex. 4 TRANSLATE INTO ENGLISH:

1. Був ранок. Мама готувала сніданок, а тато читав газету. 2. Коли я прийшов додому, брат готував доповідь до уроку з історії. 3. Учні складали екзамен з англійської мови об 11 годині ранку. 4. Вчора цілий день йшов сніг. 5. В той час, як я готував вечерю, моя маленька сестричка грала на піаніно. 6. Що ти робив о п'ятій годині вечора? Я садив квіти позаду будинку. 7. Коли мати подзвонила додому, Катя поливала квіти. 8. Що робив професор о дванадцятій годині ранку? Він проводив консультацію для хворих. 9. Коли я вийшов з будинку, йшов сильний дощ.

EX. 5 RESPOND TO THE QUESTIONS ACCORDING TO THE MODEL:

Model: What was Mary doing when the phone rang? (to watch TV)
Mary was watching TV when the phone rang.

1. What was Ann doing when her parents came from work? (to prepare dinner).
2. What was Pete doing when his friend came to him? (to do homework).
3. What were Kate and Nick doing when the teacher came into the classroom? (to water the flowers).
4. What was the girl doing when you saw her in the street? (to look through a newspaper).
5. What were the children doing when their mother came home? (to play in the yard).
6. What was Mr. White doing at 7 o'clock yesterday? (to have breakfast).
7. What was your teacher doing when you came to school yesterday? (to check up tests).

Ex. 6 TRANSLATE INTO UKRAINIAN. COMMENT ON THE USE OF PAST CONTINUOUS:

1. My mother was sitting by the fire that bright, windy March afternoon, very timid and sad. (Dickens)
2. She was weeping now...; her whole body trembling. (Bennett)
3. The weeks were passing, his money was going, and there was no money coming in. (London)
4. Some were working short hours, some were turning off hands, and for weeks Barton was out of work, living on credit. (Gaskell)
5. Through the open door came the low voice of his father. The old man was singing. (Abrahams)
6. All the time she was talking she was patting my arm reassuringly. (Walsh)

7. Phuong was drinking a glass of orange juice and I was having a beer and we sat in silence, content to be together. (Greene)
8. Old Stephen was standing in the street, ... (Dickens)
9. They were now in the black by-road near the place, and the Hands were crowding in. The bell was ringing, and the Serpent was a Serpent of many coils, and the Elephant was getting ready. (Dickens)
10. The wonder was, it was there at all. It (the town) had been ruined so often, that it was amazing how it had borne so many shocks. (Dickens)

Unit 6 Smart devices

Text 1. Smartphone

A combination of cellphone and handheld computer created the greatest tech revolution since the Internet. The two smartphone platforms are iPhone and Android. Each year since 2014, more than a billion smartphones have been sold.

A smartphone does everything a personal computer can do, and because of its mobility, a whole lot more. Although screen size is a limitation, increasingly higher resolutions and pixel density make text quite readable. Although typing is more cumbersome than with a desktop keyboard, voice recognition continues to eliminate much of the tedium. Though the first one is used more often.

A smartphone combines a cellphone with email and Web, music and movie player, camera, camcorder, GPS navigation, alarm clock, flashlight, photo album, address book and more. It is also a personal assistant. Because a smartphone is generally within reach 24/7, it is a lot more personal than a personal computer, and much more versatile. For the first time in history, systems can be designed that allow people to control many things in the world. The least spectacular thing about a smartphone is the phone. A smartphone can cut out and drop calls like any cellphone, and the more users within a cell tower's reach at a given moment, the more likely the interruptions.

Exercise 1. Translate the following words:

handheld computer, resolutions, pixel density, cumbersome, to eliminate tedium, camcorder, flashlight, versatile; розробити систему, вражаючий, розпізнавання голосу, переривання, башта мобільного зв'язку, будильник, читабельний.

Exercise 2. Determine whether these statements are true or false:

1. A combination of cellphone and PC created the greatest tech revolution.
2. A smartphone can't do everything a personal computer can do.

3. Voice recognition helps to eliminate difficulties with typing.
4. A smartphone isn't as personal as a personal computer
5. The more users within a cell tower's reach at a given moment, the more likely the failures in connection.
6. The most spectacular thing about a smartphone is the phone.
7. Typing is more helpful and commonly used than voice recognition.

Exercise 3. Answer the following questions:

1. Which are the two smartphone platforms?
2. Can a smartphone do more than a personal computer can?
3. What limits a smartphone capacity?
4. Why typing is more cumbersome than a voice recognition?
5. What things are common and which are different between a smartphone and a cellphone?

Exercise 4. Insert the missing words from the box below:

to recharge emission assigned cyber radio etiquette damaging staring

Challenges associated with smartphones include the following:

Overuse. It's common to see people 1 _____ at their phones when walking on the street and in the middle of meetings.

Social 2 _____. It's considered rude to use a phone while others are talking.

Battery life. On the technical side, battery life is a concern. Despite advances in battery technology, people often forget 3 _____ their phones.

Health issues. When viewing smartphone display up close, that is, less than six inches away, energy 4 _____ from the display has been described as potentially 5 _____ vision. Also, 6 _____ emissions from cell phones have been an ongoing health concern.

Security. Smartphone security has always been a concern, and vendors have worked to protect their devices. With an increase in 7 _____ attacks, smartphone users must make sure that their devices have strong security. Many IT organizations update their smartphones with company-approved security functions before the smartphone is 8 _____ to an employee.

Text 2. Smartwatch

A smartwatch is a portable and wearable computer device in a form of a watch; modern smartwatches provide a local touchscreen interface for daily use, while an associated smartphone app provides management and telemetry, such as long-term biomonitoring. While early models could perform basic tasks such as calculations, digital time telling, translations, and game-playing, smartwatches released since 2015 have more general functionality closer to smartphones, including mobile apps, a mobile OS and WiFi/Bluetooth connectivity. Some smartwatches function as portable media players, with FM radio and playback of digital audio and video files via a Bluetooth headset and mobile phones. While internal hardware varies, most have an electronic visual display, either a backlit LCD or an OLED. Some use transfective or electronic paper to consume less power. They are usually powered by a rechargeable lithium-ion battery. Peripheral devices may include digital cameras, thermometers, accelerometers, pedometers, heart rate monitors, altimeters, barometers, Gyroscope, Ambient Light sensor, Galvanic Skin Response (GSR) Sensor, Electrocardiogram (ECG or EKG) Sensor, UV Sensor, compasses, GPS receivers, tiny speakers, and microSD cards.

Software may include digital maps, schedulers and personal organizers, calculators, and various kinds of watch faces. Smartwatches are advancing, especially in terms of design, battery capacity, and health-related applications.

Exercise 1. Translate the following words:

transflective, touchscreen interface, telemetry, playback, be powered by, backlit LCD, Ambient Light sensor, battery capacity; крихітні динаміки, датчик гальванічної реакції шкіри, ультрафіолетовий сенсор, планувальник, шагометр, акумуляторний, сполучення WiFi.

Exercise 2. Determine false statements and correct them:

1. An associated smartphone app provides a touchscreen interface for daily use.
2. Early models could perform basic tasks such as calculations, digital time telling, translations
3. Smartwatches released since 2015 have more functions closer to smartphones.
4. Smartwatches don't include digital maps, schedulers and personal organizers.
5. They are usually powered by a rechargeable alkaline battery.
6. An electronic visual display is presented by a backlit LCD or an OLED.
7. Peripheral devices can't include storage devices.
8. Smartwatches can't function as portable media players.

9. Watch phones permit to make telephone calls.
 10. The battery capacity of smartwatches isn't developed anymore.

THE FUTURE CONTINUOUS TENSE

shall be	+ V _{ing}
will be	

I (we) shall be writing (translating)
You (he, she, it, they) will be writing (translating)

Will you be writing (translating)?	Yes, I shall.
	No, I shan't.

I shall not (shan't) be writing (translating)
You will not (won't) be writing (translating)

Майбутній (продовжений) тривалий час вживається для вираження **процесу дії**, що відбуватиметься в певний момент або період часу в майбутньому часі.

Слова-показники: at . . . (5) o'clock tomorrow, at this time tomorrow.

Структура стверджувального речення

Іменник/ займенник + shall, will + be + основне дієслово із закінченням –ing + інші частини мови

I (we) shall be writing (translating) a book.

You (he, she, it, they) will be writing (translating) a book.

Структура запитального речення

Дієслово to be (was, were) + іменник/займенник + основне дієслово із закінченням –ing + інші частини мови

Will you be writing (translating) a book?

Yes, I shall.
 No, I shan't.

Структура заперечного речення

Іменник / займник + допоміжне дієслово shall be, will be + частка not + основне дієслово із закінченням - ing + інші частини мови

I shall not (shan't) be writing (translating) a book.

You will not (won't) be writing (translating) a book.

THE EXERCISES

Ex. 1 MAKE THE FOLLOWING INTERROGATIVE AND NEGATIVE:

1. We shall be passing our English examination at this time tomorrow. 2. She will be preparing dinner at 3 o'clock. 3. I'll be cleaning my room when you come. 4. He'll be taking a walk in the park at 10 o'clock. 5. They will be flying to America at this time on Saturday. 6. I'll be skating the whole day tomorrow.

Ex. 2 PUT QUESTIONS TO THE WORDS IN BOLD TYPE:

1. We shall be working hard this time tomorrow.
2. She will be taking a music lesson at 10 o'clock on Sunday.
3. They will be building a new club when you are in the country in summer.
4. The boys will be playing football when you come home.
5. He will be skiing at 5 o'clock tomorrow.

Ex. 3 TRANSLATE INTO ENGLISH:

1. Я складатиму екзамен з фізики о п'ятнадцятій годині завтра. 2. Ми будемо саджати квіти в саду, коли ти прийдеш. 3. Студенти будуть працювати на комп'ютерах у цей час у п'ятницю. 4. Вони будуть обговорювати проблему збереження природи в області об 11-й годині ранку. 5. Я буду снідати, коли ти прийдеш. 6. Що ти будеш робити завтра в цей час? Буду готуватися до концерту. 7. У неї буде урок співу о 10-й годині в суботу. 8. Ми будемо вчитись вишивати, коли ти завітаєш до нас. 9. Я буду писати твір, коли ти подзвониш мені.

Ex. 4 TRANSFORM THE SENTENCES ACCORDING TO THE MODEL:

Model: a) *Are you going to clean the flat?*
 — *Will you be cleaning the flat?*

1. Are you going to stay in Kyiv for a month?
2. Are you going to have vegetables for supper?

3. When are they going back to the University?
4. Is she going to visit you once more?
5. What are they going to do in the evening?

Model: b) You will call him up in a week.

— Will you be calling him up in a week?

1. She will write to her grandmother tomorrow. 2. The mother is going to take her son to the circus. 4. The man will read these magazines. 5. They are going to have dinner.

Ex. 5 ANSWER THE QUESTIONS:

1. What will you be doing at 10 a.m. tomorrow?
2. What will your mother be doing at this time on Sunday?
3. What will your friend be doing when you come to him tomorrow?
4. What will your little sister/brother be doing when you come home from university?
5. What will you be doing when the teacher comes into the classroom?

Ex. 6 COMMENT ON THE USE OF THE FUTURE CONTINUOUS TENSE.

TRANSLATE THE SENTENCES INTO UKRAINIAN:

1. "There is one thing to be said of it," Louisa repeated in her former curious tone: "it will be getting away from home. Yes." "Not, but what I shall be very unwilling, both to leave you, Loo, and to leave you here." (Dickens)
2. "... I shall be worrying myself, morning, noon, and night to know what I am to call him!" (Dickens)
3. "I feel I shall be asking you the same question tomorrow." (Dreiser)
4. "But me dear Ann Veronica, you will be getting into debt." (Wells)
5. "Pearl, be quick and go. Minnie will be wondering why you don't come." (Maugham)
6. "I am not going to play at all, I must see to the tea, and I dare say some more people will be coming in presently." (Maugham)
7. "Well, so long, anyway, Gretta," Royd called to her. He waved his hand in her direction. "I'll be seeing you again, too. Maybe I'll be seeing you at the Round-about some night soon." (Caldwell)
8. "I shall be having a quiet day with Antonia." (Murdoch)
9. "We'll be leaving for the North tomorrow." (London)

Unit 7 Programming languages

Text 1. Programming languages

Different programming languages are in fact like different tools designed to fulfil different purposes. Some of them are general, meaning that you can use them for a wide variety of applications like C++, C#, Java, and Python which are also generally more massive and hence it takes more time to become fluent in them, but others c, like HTML and CSS, PHP, SQL and lots of others. They also can be categorized based on the programming style(s) they support, like OOP (Object-oriented programming), Procedural programming, Generic programming and so on. For a general scripting language Python is recommended, for web HTML+CSS+PHP.

1 – JavaScript / TypeScript. Since its creation to make the firsts websites dynamic, JavaScript hasn't stopped gaining popularity over the years. With that being said, currently JavaScript is the most demanded programming language in the entire market. Also, the arrival of TypeScript (a JavaScript superset with type safety) may also help to achieve this milestone. TypeScript popularity has only increased in recent years.

2 – Python. Without making much noise, Python has made its journey to be the second most demanded programming language in 2022. Its versatility, from scripting, running servers or for data analysis, has been key to achieving this milestone. Also, Python has one of the greatest and bigger communities out there.

3 – Java. In the top three spot, as the third most demanded programming language, we found Java. Java language has been really popular since its creation in 1995. Even though this popularity has been decreasing over the last years with the appearance of more modern languages like Kotlin, it still holds a solid top three spot.

4 – C#. The top four spot goes to C#. C# is a general purpose, multi-paradigm, object-oriented programming language, created mainly to address some of the weaknesses of C++. The most common usage of C# is with the .NET framework. Both .NET framework and Unity are popular among top tier companies.

5 – PHP. The language that started as a simple “Personal Home Page Tool”, here the name PHP, has made an incredible journey since then. Twenty-seven years since its creation, PHP is still the fifth top most demanded language. PHP is mainly used for web development, in conjunction with frameworks like Laravel or Wordpress.

6 - C/C++. Fifty years have passed since the first release of C, and 37 years from the later appearance of C++, which was firstly named “C with Classes”. In this long window of time, C/C++ has maintained its popularity with regular additions and improvements to the language. Modern C++ includes object-oriented, generics and also functional features.

It also facilitates low level memory manipulation. Its usage in the industry is widely extended, C++ can be found on video games, servers, databases, space probes etc.

7 – Ruby. Ruby holds the top seven most demanded programming language with 70K jobs found (5% from the total job demand). Its most popular usage comes in conjunction with the web framework Ruby on Rails. Ruby runs some of the top tech companies nowadays, like Twitter, Crunchbase or Github.

8 – GO. Google designed Go to improve programming productivity in an era of multicore, networked machines and large codebases. Top tier companies like Uber or Twitch are using Go.

Exercise 1. Translate the following words:

object-oriented programming, generic programming, to achieve this milestone, scripting, tier companies space probes; популярність знижується, йти у поєднанні з, багатоядерний, бази кодів, займати тверде третє місце.

Exercise 2. Determine false statements and correct them:

1. Programming languages can be categorized basing on the programming style.
2. C/C++ are recommended for a general scripting language.
3. C# replaced C++ because of large amount of weaknesses in the last one.
4. PHP can be found on video games, servers, databases, space probes
5. Ruby is the most demanded programming language in the entire market.
6. NET framework and Unity aren't popular among top tier companies.
7. Modern C++ is object-oriented, generic and also very functional.
8. JavaScript is a full name of Java.
9. Python was designed by Google to improve programming productivity.
10. The popularity of Java decreased over the last years with the appearance of more modern languages like Kotlin.

Exercise 3. Answer the following questions:

1. Which languages need more time to become more fluent in them?
2. Which language started as a simple “Personal Home Page Tool”?
3. Which language do Twitter, Crunchbase or Github use?
4. How C++ was firstly named?
5. When was Java language created?
6. Which languages are general-purpose and multifunctional?
7. Which languages are limited to a specific domain?

8. Which top tier companies are using Go?
9. What object-oriented programming languages do you know?
10. What generic programming languages do you know?

Exercise 4. Insert the missing words from the box below:

to execute Object-oriented functionality Scripting invoked Logic Functional to convey restrictions Procedural encapsulating

Types of Programming Languages

1 _____ programming language is a language which follows a systematic approach consisting of statements, functions and commands 2 _____ a computational task (BASIC, C, FORTRAN, Java, Pascal).

3 _____ programming languages use the concept of reusability. This means each program consists of a set of functions that can be 4 _____ to repeat a task until a condition is met (Common Lisp, Haskell, F#, Clojure, Elm).

5 _____ programming language or OOP relies on organising and 6 _____ data in terms of objects instead of depending on functions and logic. With concepts like inheritance and polymorphism, this language encourages reusability, thus lessening the complexity of the code (Python, Java, C#, Ruby, PHP).

7 _____ programming languages are used to design, develop and enhance an application's or operating system's features. Mainly it is used to provide the 8 _____ to the characteristics of a system. Scripting languages are interpreted quickly and can swiftly execute code (JavaScript/ECMAScript, PHP, Python, Ruby).

9 _____ programming languages are slightly different. They aim 10 _____ to the system about statements the developer uses to consider the possible outcomes of other actions adeptly (ALF (algebraic logic functional programming language), ASP (Answer Set Programming), Alice, Alma-0).

Text 2. 7 Tips and Tricks to Learn Programming Faster

1. Make Your Fundamentals Clear

To understand the advanced concepts of programming you need to be very clear about the fundamentals of programming: data structures, variables, control structures, syntax, tools, and text editors. Pick one programming language, stick with it, and clear all the basics of programming first before going to the next level.

2. Learn by Doing, Practicing, and Not Just Reading

When you start coding, practice the same code or sample again and again until or unless you don't need to refer to the same book or resource from where you have

learned. Also, build your own project, participate in coding challenges, play coding-related games, and practice it at your own end every single day.

3. Code by Hand

When you will apply for jobs in programming, the technical evaluation process usually includes writing code using pen and paper or a whiteboard. Coding by hand is something old-school technique but it actually involves a test for a programmer's proficiency. It gives you a clear understanding of syntax and algorithms, you make a deeper connection in your brain.

4. Share, Teach, Discuss and Ask for Help

Teaching someone, sharing your knowledge, and doing discussions with other programmers will make you a better programmer quickly. You can also participate in open source projects, discuss your code with your co-programmers.

5. Use Online Resources

There are plenty of online resources available paid or unpaid. You can subscribe to youtube channels or try coding boot camps to learn to program quickly and effectively. Also, you can read programming-related blogs or online communities.

6. Take Breaks

If you want to learn programming it's not good to sit in front of a computer for hours and try to grasp everything in one go. You will be exhausted by doing this so it's better to learn coding in chunks. Take some short breaks to get refreshed. Also, try to eliminate all kinds of distractions. Turn off your phone notification, and email notifications, and try to isolate yourself to be focused. By doing this you will save a lot of time and will stay away from headaches or frustration.

7. Learn to Use Debugger

You will save a lot of time using a debugger or a tool to fix the errors in your code. If you are good at debugging, it will be easier to learn to program. So learn to use some good debugging techniques or use tools to check your piece of code.

Exercise 1. Translate the following words:

variables, text editors, sample, coding challenges, proficiency, to grasp something in one go, to get refreshed, to eliminate all kinds of distractions, boot camps.

Exercise 2. Answer the following questions:

1. What are the fundamentals of programming?
2. Why do you need to practice the same code or sample many times when you learn coding?

3. Why coding by hand in written form is important?
4. Why teaching someone is helpful in becoming a better programmer?
5. Which online resources are great to learn to program quickly?
6. What would happen if you sit in front of a computer for hours?
7. Why is it necessary to be good at debugging?
8. How to eliminate distractions when coding?

The Perfect Tenses

THE PRESENT PERFECT TENSE

have	+ V ³
Has	

I (you, we, they) have written (translated)
He (she, it) has written (translated)

Have you written (translated)?	Yes, I have.
	No, I haven't.

Has she written (translated)?	Yes, she has.
	No, she hasn't.

I have not (haven't) written (translated)
She has not (hasn't) written (translated)

Теперешній завершений час вживається для вираження дії, яка вказує на **результат**, який відбувся/завершився у минулому, що має зв'язок з теперешнім часом. **Слова-показники:** today, this week, this month, this year, this morning, just, already, not yet, ever, never, since, for, lately, recently.

Структура стверджувального речення

Іменник/ займенник + допоміжне дієслово (has, have) + основне дієслово у **III формі** / або із закінченням – **ed** + інші частини мови

I (you, we, they) have written (translated) a book.
 He (she, it) has written (translated) a book.

Структура запитального речення

Допоміжне дієслово (has, have) + іменник/займенник + основне дієслово у **III формі** / або із закінченням – **ed** + інші частини мови

Have you written (translated) a book? Yes, I have.
No, I haven't.

Has she written (translated) a book? Yes, she has.
No, she hasn't.

Структура заперечного речення

Іменник / займенник + допоміжне дієслово (has, have) + частка not + основне дієслово у **III формі** / або із закінченням – **ed** + інші частини мови

I have not (haven't) written (translated) a book.

She has not (hasn't) written (translated) a book.

THE EXERCISES

Ex. 1 MAKE THE FOLLOWING INTERROGATIVE AND NEGATIVE:

1. She has done the work.
2. The postman has brought us two letters from our relatives.
3. I have just washed the dishes.
4. We have written a long dictation.
5. Ann has left the house.
6. The children have cleaned the room.
7. I have shown him my collection of stamps.
8. The teacher has opened the window to air the room.

EX. 2 INSERT THE PRESENT INDEFINITE OR THE PRESENT PERFECT:

1. When I ... with real poetry, I cannot rest till I ... it by heart, (to meet, to learn).
2. She ... just... from Canada, (to return).
3. You ever ... to Kyiv? (to be).
4. I often ... my granny in summer, (to visit).
5. You ... this film? (to see).
6. She always... to me on Sunday. (to come).
7. We ... him since March. (not to see).

EX. 3 TRANSLATE INTO UKRAINIAN:

1. Misha says he has received a letter from his brother.
2. He says they have brought a parcel from his parents.
3. I am sure she has not read this article.
4. He says they have not yet given him her address.
5. I say I have just talked to him over the telephone.
6. My friend says he has never been there.
7. She says she has just had a telephone call from home.

Ex. 4 TRANSLATE INTO ENGLISH:

1. Ти вже помив посуд? Так. 2. Нарешті я зробив переклад цього важкого тексту. 3. Я не можу прийти до тебе. Я ще не зробив уроки. 4. Чому ніхто не прибрав аудиторію? 5. Поштар тільки що приніс газети. 6. Ти отримав мою телеграму? 7. Я ніколи не був за кордоном. 8. Ти читав фантастичні оповідання Гамільтона? 9. Подивись. Вона розбила твою улюблену чашку.

Ex. 5 MAKE UP SENTENCES USING THE FOLLOWING WORD COMBINATIONS:

Model: *has finished — She has finished the work.*

has told	have drawn
have written	has cooked
have left	has taken
have given	have had
has sent	has arrived

Ex. 6 ASK QUESTIONS AS IN THE MODEL:

Model: *Ask me:*
 if I have read this book.
 — *Have you read this book?*

Ask me:

if I have ever been to Warsaw;
if I have ever played the violin;
where I have lost my bag;
if I have done my homework;
if I have seen this film;
if I have read many books by Defoe;
how many poems I have learnt by heart;
if I have bought a present for your birthday.

Ex. 7 RESPOND TO THESE REQUESTS ACCORDING TO THE MODELS:

Model: *a) Would you open the window, please?*
 — *I've just opened it.*

1. Would you write the letter, please? 2. Would you clean the room, please?
3. Would you ring Mary up, please? 4. Would you help your brother with his homework, please?

Model: *b) Is Ann going to prepare dinner now?*
 — *She's already prepared it.*

1. Are you going to have a talk with your teacher? 2. Is your friend going to enter the Institute? 3. Is your brother going to pass the exam in English? 4. Are you going to help your mother about the house?

Model: c) I read this interesting book yesterday.

— I've read it too.

1. I wrote some exercises this morning. 2. I finished the work an hour ago. 3. I asked my friend to help me yesterday. 4. I bought new stamps for my collection.

Model: d) I haven't finished my work yet. Have you?

— No, I haven't finished it either. (No, I haven't either).

1. The mother hasn't prepared breakfast yet. Have you? 2. I haven't done my homework yet. Have you? 3. Ann hasn't been to Kyiv yet. Has your friend? 4. She hasn't learned this poem by heart yet. Have you?

EX. 8 OPEN THE BRACKETS AND PUT THE VERBS IN THE PRESENT PERFECT OR PAST INDEFINITE TENSE:

1. "Where's Ann?" "She (to prepare supper) just. 2. "How long you (to live) in this house?" 3. "You ever (to have any trouble with) Spanish?" "No, I never (to have any trouble with) it. 4. She (to do) a lot of things yesterday. 5. I (to be) in Kyiv this month. 6. The children (to make) much noise in the room two hours ago. 7. She (to write) the test already. 8. My mother (to clean) the flat today. 9. The student (to pass) the examinations last week.

EX. 9 INSERT THE PAST CONTINUOUS, THE PAST INDEFINITE OR THE PRESENT PERFECT TENSE INSTEAD OF THE INFINITIVE:

1. He (to be) abroad all this time. 2. (To be) you in the Caucasus last year? 3. They (to leave) England when he (to be) still a child. 4. What he (to do) when you (to come) here? 5. He not yet (to come) back. 6. He (to come) already? 7. When you (to see) him last? 8. I not (to see) him for a very long time. 9. His health (to improve) greatly since I (to see) him last. 10. Last night I (to feel) tired and (to go) to bed very early. 11. Where you (to spend) your holidays? 12. You ever (to spend) your holidays in the Crimea? 13. While travelling in the Crimea I (to meet) your friend who (to spend) his holidays there. 14. I (to visit) never this place. 15. I (to visit) this place last year.

EX. 10 COMMENT ON THE USE OF THE PRESENT PERFECT TENSE:

1. "Have you ever thought about the future?" he asked me. (Du Maurier)
2. "... I'm sure I don't know what has come over her lately ..." (Joyce)
3. "I've seen very little Wilfred since he went East ..." (Galsworthy)
4. "You will blow the bridge after the attack has started." (Hemingway)

5. "Oh, have I hurt you?" he cried. (Wells)
6. "Mrs. de Winter has been dead for over a year ..." (Du Maurier)
7. "Now," said Keawe, "I have sold for sixty which I bought for fifty, ..." (Stevenson)
8. "It is what I feared," he thought. "It is she who has bought it." (Stevenson)
9. "If I have been too ready to accept your friendship," she said, the colour deepening on her cheeks, "my ignorance must be my excuse." (S. K. Hocking)
10. "You have been so true a friend to me during all the voyage," she went on, ... (S. K. Hocking)
11. "I'm not sure you haven't done it on purpose — to stimulate our curiosity." (A. Christie)
12. "But, my dear lady," remonstrated Sir Henry, "it can't be all. What you have related is a tragic occurrence but not in any sense of the word a problem." (A. Christie)
13. "What man?" "The robber; him that the stars winked at. We have waited for him after dark these many nights, and we shall have him." (Dickens)
14. "...But it's too bad a night for that. The rain falls very heavy, and the wind has risen." (Dickens)
15. "I have come to speak to you, in consequence of what passed just now." (Dickens)

Ex. 11 COMMENT ON THE USE OF THE PRESENT INDEFINITE, THE PRESENT CONTINUOUS, THE PRESENT PERFECT:

1. ... she has come in from scullery and is knitting a scarf for Adam. (Cronin)
2. "Why not join us? ..." "I'm so sorry," he said, "tomorrow I am probably driving to Sospel ..." (Du Maurier)
3. "Davy! What's happened? What are you doing?" he shouted angrily. (Aldridge)
4. "That is the way all men end," Anselmo said. "That is the way men have always ended ..." (Hemingway)
5. "Oh, but I understand she isn't really English. I've always heard her real name is Mademoiselle de la Ramee." (Maugham)
6. "My dear sir, that is just where you are wrong. That is just where the whole world has gone wrong. We are always getting away from the present moment." (Wells)
7. "Why doesn't Gladys answer the door?" She demanded. "Oh, no, of course, it's Thursday — Gladys's day out. I expect Mrs. Spenslow has fallen asleep. I don't expect you've made enough noise with this thing." (A. Christie)

8. He said, "I have always intended, ever since I was a small boy, to live in the country some day and have a garden of my own. I have always been very much attached to flowers ..." (A. Christie)
9. "You mean you really want to know what people are saying?" (A. Christie)
10. Women are constantly trying to commit suicide for love, but generally they take care not to succeed. (Maugham)

Unit 8 Operating system

Text 1. What is an Operating system?

Operating system is a system software that is extremely important to activate and co-ordinate the activities of various hardware resources like the processor, input output devices etc. It also controls the movement of information in the computer system. It is the first program who loaded into the computer memory when we boot our computer system. It provides a standard to its application software so that application software can talk to operating system or each other easily.

Types of OS

Single-user Operating System allows only one user to work on a computer at a time, is known as single user operating system (MS-DOS, Windows 9x etc).

Multuser Operating System allows a number of users to work together on a single computer. UNIX is a multuser operation system. Each user will be provided with a terminal and all such terminals will be connected to the single computer. Multuser operating system running on a computer will manage the work of all users, without letting them know that they all are actually working on a single computer.

Single - tasking Operating System can execute a single job at a time. For example, MS-DOS is a single tasking operating system because you can open and run only one application in DOS, at one time.

Multitasking Operating System allows the user to perform more than one job at the same time on a computer. Most of today's operating systems such as Windows 9x, OS/2, UNIX, LINUX etc. support it. If you open MS-Word and Internet Explorer at the same time, the Windows Operating system is doing multitasking. The operating system is able to keep track of where you are in each of these applications and switch from one to another without losing track.

Real- time Operating System works towards providing immediate processing and also responding to user's commands in a very short time. Such an

operating system is more commonly used in chemical industry for process control and scientific processing like airplane control and space vehicle control operations. Success of a real time system does not depend only on the correctness of the result, but also on the timeliness of the result. A correct answer obtained after the expiration of time limit is as bad as a wrong answer. Some examples of real time operating systems are HP-RT and VT- works.

Network Operating System (NOS) is an operating system specifically designed to support interconnection of several computers. NOS provide support for multiuser operations as well as administrative, security and network management functions. Some examples of NOSs are Novell's Netware, Microsoft's Windows NT, Artisoft's LAN tactic etc. NOS has to acknowledge and respond to requests from many workstations, managing network access, resource allocation and sharing, data protection as well as error control. It provides for printer, file system, database and application sharing.

Distributed Operating system hides the existence of multiple computers (interconnected by a network) from the user. That is, the user remains unaware of the fact that many computers and being used to process the data. These computers may be located at many places around the globe. Distributed Operating System provides single-system image to its users. Each computer in a distributed computing system processes a part of the global distributed operating system. All these computers work in close coordination with each other. Processes and system resources are managed globally, and controlled from specific locations.

Exercise 1. Translate the following words:

multiuser OS, run an application, timeliness of the result, workstations, resource allocation, to manage globally, to respond to user's commands, boot;

багатозадачність, негайна обробка, відслідковувати, перемикатися з одного на інше, космічний корабель, з'єднання комп'ютерів, відповідати на запити.

Exercise 2. Answer the following questions:

1. What is an operating system?
2. Name and explain its main functions.
3. Name Types of OS and their examples.
4. What's the difference between multiuser operating system and multitasking

operating system?

5. What's the difference between network operating system and distributed operating system?

6. What's the difference between single-user and single - tasking operating systems?

7. Why a correct answer obtained after the expiration of time limit is as bad as a wrong answer in a real- time operating system?

8. Which system is able to keep track of where you are in different applications?

9. In which system the user remains unaware of the fact that many computers and being used to process the data?

10. In which system the user is provided with a terminal and all such terminals are connected to the single computer?

Exercise 3. Determine false statements and correct them:

1. Virtual memory space is always smaller than physical memory space.
2. Segmentation avoids external memory fragmentation.
3. An inverted page table keeps track of one entry per virtual page per process.
4. If a deadlock is detected, the OS should always kill the process in the deadlock.
5. An error is reported when the compiler cannot resolve the address when compiling a code module.
6. In a non-distributed system, deadlock is rare enough that most systems just ignore it.
7. In the working set model, exceeding the balance set leads to thrashing.
8. If an OS designer does not like page size, he/she just picks a new one.
9. Interrupts can be shut off by user processes.
10. A paging scheme does not suffer from external fragmentation.
11. By default, threads share global memory.
12. In the remote procedure call (RPC) paradigm, data is not translated if the client and the server are running on the same architecture and using the same operation.
13. Usually, there's one I/O queue for the system.
14. A segmented memory model is good for separating code from data.
15. When a new process is forked in UNIX, it retains access to the parent's open files.

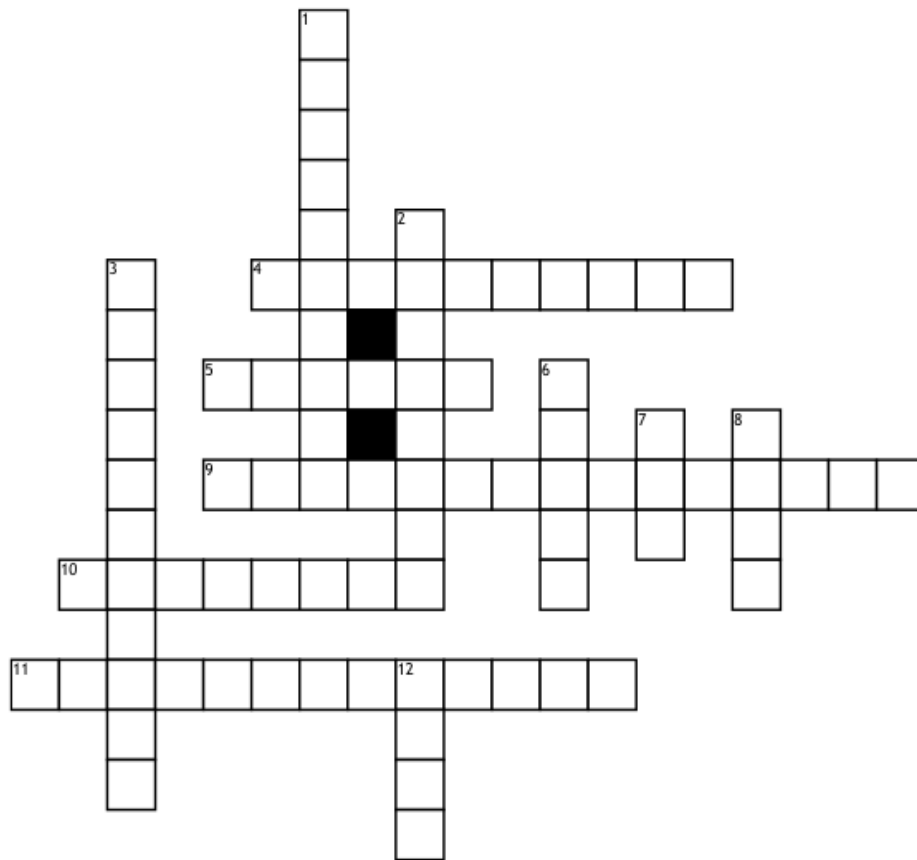
Exercise 4. Insert the missing words from the box below:

<i>manages</i>	<i>establishes (x2)</i>	<i>carries</i>	<i>assigns</i>	<i>allocates</i>	<i>transfers</i>
<i>produces</i>	<i>maintains</i>	<i>facilitates</i>			

The main functions of an operating system

1. It _____ a processor to different tasks being performed by the computer system.
2. It _____ the main memory and other storage areas to the system programs as well as user programs and data.
3. It _____ out the input-output management and co-ordinates different input-output devices while one or more program is being executed.
4. It _____ file on various storage devices and their transfer from one to another devices. It also allows modification through text editor or any other program.
5. It _____ and enforces the job priority.
6. It automatically _____ control from one program to another as per control signal supply by user.
7. It _____ and maintains data security and integrity.
8. It _____ also error messages and other debugging codes.
9. It _____ log of users in multi-user operating system.
10. It _____ easy communications between the computer system and the computer operator.

Operating Systems



Across

4. programming code that has to be processed by a compiler to make object code for use in a computer
5. the core of an operating system dealing with allocating hardware resources and the application program
9. the set of programs providing communications between the application programs and the hardware
10. the physical components of a computer system

11. a complete operating system kit with the utilities and applications you need to make it do useful things

Down

1. part of a system software development where anyone is free to take a copy of source code, extend, and fix bugs in it
2. computer program that are made available no cost to the use
3. Word processor, spreadsheet, or database program

6. a clone of Unix operating system created by Linus Torvalds for use on PC

7. version 10 of the Apple McIntosh operating system

8. the person using a computer

12. a popular multi-user multitasking operating system originally designed for mainframe computer.

Text 2. Modern Operating Systems

A modern computer consists of one or more processors, some amount of main memory, hard disks or flash drives, printers, a keyboard, a mouse, a display, network interfaces, and various other input/output devices. All in all, a complex system. For this reason, computers are equipped with a layer of software called the operating system, whose job is to provide user programs with a better, simpler, cleaner, model of the computer and to handle managing all the resources just mentioned.

It is important to realize that smart phones and tablets (like the Apple iPad) are just computers in a smaller package with a touch screen. They all have operating systems. In fact, Apple's iOS is fairly similar to macOS, which runs on Apple's desktop and MacBook systems.

It is hard to pin down what an operating system is other than saying it is the software that runs in kernel mode — and even that is not always true. Part of the problem is that operating systems perform two essentially unrelated functions: providing application programmers (and application programs, naturally) a clean abstract set of resources instead of the messy hardware ones and managing these hardware resources. The architecture (instruction set, memory organization, I/O, and bus structure) of most computers at the machine-language level is primitive and awkward to program, especially for input/output. Operating systems contain many drivers for controlling I/O devices. But even this level is much too low for most applications. For this reason, all operating systems provide yet another layer of abstraction for using disks: files. Using this abstraction, programs can create, write, and read files, without having to deal with the messy details of how the hardware actually works. This abstraction is the key to managing all this complexity.

Exercise 1. Translate the following words:

To be equipped with, desktop, to run in kernel mode, to handle managing, messy details, to pin down, tablet; рівень машинної мови, набір ресурсів, непов'язані функції, сенсорний екран.

Exercise 2. Answer the following questions:

1. Why a modern computer is a complex system?
2. What does a modern computer consist of?
3. What is the main job of an operating system?
4. Which two functions does an operating system perform?
5. What is a computer architecture?

6. What layer of abstraction for using disks does an operating system provide?
7. Does an operating system contain many drivers for controlling I/O devices?
8. Is Apple's iOS fairly similar to MacOS?

THE PAST PERFECT TENSE

had + V³

I (you, he, she, it, we, they) had written (translated)

Had you written (translated)?

Yes, I had.

No, I hadn't.

I had not (hadn't) written (translated)

Минулий завершений час виражає результат, що вже завершився до певного моменту в минулому або до початку іншої дії в минулому. **Слова-показники:** by 2 o'clock, by the time, by the 1st of January.

Структура стверджувального речення

Іменник/ займенник + допоміжне дієслово (had) + основне дієслово у **III формі** / або із закінченням **-ed** + інші частини мови

I (you, he, she, it, we, they) had written (translated) a book.

Структура запитального речення

Допоміжне дієслово (had) + іменник/займенник + основне дієслово у **III формі** / або із закінченням **-ed** + інші частини мови

Had you written (translated) a book?

Yes, I had.

No, I hadn't.

Структура заперечного речення

Іменник / займенник + допоміжне дієслово (had) + частка not + основне дієслово у **III формі** / або із закінченням **-ed** + інші частини мови

I (you, he, she, it, we, you, they) had not (hadn't) written (translated) a book.

THE EXERCISES

Ex. 1 COMPLETE THE SENTENCES ACCORDING TO THE MODEL:

Model: I had already finished my work...

— *I had already finished my work before you asked me about it.*

— *had already finished my work by 7 o'clock.*

1. He had consulted the doctor ... 2. They had left for the USA ... 3. We had returned the book to the library ... 4. The pupils had passed their exam in English ... 5. The boy had watered the flowers ... 6. Our family had left the town ... 7. The brigade had built the bridge ... 8. We had done the work ... 9. The scientists had finished the experiment ...

Ex. 2 REPLACE THE INFINITIVES IN BRACKETS BY THE PAST INDEFINITE OR THE PAST PERFECT:

1. Last week we (to discuss) the performance which we (to see) at our drama theatre.
2. When I (to clean) the flat I (to begin) to watch TV. 3. The mother (to prepare) dinner by 3 o'clock. 4. My friend (to tell) me a lot of interesting he (to see) in London. 5. She (to show) me the new dress she (to sew) herself. 6. The rain (to stop) before we (to come) home. 7. The students (to write) a difficult test by 12 o'clock.

Ex. 3 TRANSLATE INTO ENGLISH:

1. Коли я повернувся додому, моя маленька сестра вже заснула. 2. Ми закінчили цей важкий експеримент до 11-ї години. 3. Вона працювала на заводі допочатку війни. 4. Я переклав текст до того, як мій друг подзвонив мені. 5. Експедиція виїхала у гори до весни. 6. Наша група склала екзамен із фізики до другої години. 7. Я показав другу нові журнали, які я купив у Києві. 8. Дівчина розбила чашку, яку їй подарували на день народження. 9. Вона одягнула нове плаття, яке пошила сама. 10. Я написав твір до приходу батьків з роботи. 11. Викладач пояснив нам помилки, які ми зробили у диктанті.

Ex. 4 READ THE SENTENCES AND SAY WHICH ACTIONS WERE DONE FIRST:

1. I had to buy a new pen because I had lost the old one. 2. The last electric train had gone when we got to the station. 3. After I had left for work I remembered that I had forgotten to ring you up. 4. We had collected our things and got into the bus before it started raining.

Ex. 5 ANSWER THE QUESTIONS:

1. What had you done before you left the house?
2. By what time had you done your homework yesterday?

3. What did you do after you had done your homework?
4. What had you done before you went to bed?
5. Where had you lived before your family moved to this place?

Ex. 6 TRANSLATE INTO UKRAINIAN. COMMENT ON THE USE OF THE PAST PERFECT TENSE:

1. George made no answer, and we found, on going over, that he had been asleep for some time. (Jerome K. Jerome)
2. When they had waved good-night, Michael stopped on the steps and called to them. (Carter)
3. Osborn fully believed that Dobbin had come to announce his son's surrender. (Thackeray)
4. The other children who had grown up with him were still the same. (Abrahams)
5. Hardly had she sat down when a very stout gentleman ... flopped into the chair opposite hers. (Mansfield)
6. Very coolly she reviewed the scene she had been through. (Galsworthy)
7. The Infanta had never before seen this wonderful ceremony. (Wilde)
8. Ben was sorry then that he had brought his son. (Aldridge)
9. It had long been her pet plan that her uncles should benefit themselves and Bosinney by building country-houses. (Galsworthy)
10. "... — yes, I really do wish that I had never had a family, and then you would have known what it was to do without me!" (Dickens)

Unit 9 Artificial Intelligence

Text 1. AI development and modern use

Let's take a look at the benefits which we can gain from AI, analyse the current state of affairs, and discover future perspectives of its evolution.

AI was born in 1956 during the Dartmouth conference. During the 20th century, AI faced lots of falls and rises. Lack of data, slow computers, high expectations, and wrong paradigms resulted in several events called AI winters. The low performance was caused by slow computers; they didn't have graphics processing units (GPUs) or powerful central processing unit (CPUs). One of the other main reasons why AI failed is a Symbolic AI and its paradigm. Researchers thought that people operated by symbols and words; hence, they tried to use such an approach for machines. Despite all these negative results, that century created a base for new technologies. Biology investigations allowed us to build neural networks; expert systems, in turn, gifted us a machine learning and a knowledge-based approach.

Further improvements in hardware allowed to build and test more powerful algorithms than ever before. It opened the door to new experiments and future breakthroughs in the AI sphere. AI has almost reached the humans' level in areas such as natural language processing (NLP) and computer vision (CV).

However, even though new programming libraries allow us to develop AI applications without any preparation, the industry lacks specialists drastically. The modern algorithms owe their success to a significant amount of available data. Hence, let's take a look at the phenomenon of large amounts of data and the techniques for its processing.

Big data

What does big data mean? This term describes not only the zettabytes of data but also the tools for its processing. Nowadays, we have access to any desirable data. As a result, we can test our algorithms on large sets of data. Since big dataset doesn't always mean a good algorithm, it's also required to have tools which are able to process a vast amount of data, such as Spark, Hadoop, Storm, etc. They allow us to extract all the information we require from chunks of unprocessed raw data.

Uses of artificial intelligence

TRANSPORT

Artificial intelligence is capable of plate recognition, which automates car account in traffic and at checkpoints. For example, Automarshall system uses surveillance cameras to identify car plates. It also stores special databases with a date, direction and time of the ride. Such a smart system is applied to automate parking lots. The technologies recognize cars with a parking ticket and automatically give a signal to gates and barrier arms. Such a recognition system allows to track transport and control traffic.

NATURE PROTECTION

Some organizations have already introduced AI as a system that can predict and localise accidents of different kinds. For instance, AI is widely used to localise and predict a forest wildfire. It assists in saving both nature and money because it has become possible to prevent a wildfire or at least stop it as soon as possible. Another good example is using AI as a pollution detector. Researchers from Stanford University developed a system that can recognise large animal facilities that pollute water and air, and it will allow governments to do better management of the agricultural industry and reduce the harm caused by such facilities.

ENTERTAINMENT

Almost all modern phones have an inbuilt smart assistant based on ideas and technologies of artificial intelligence. The recent breakthrough in generative adversarial

networks gave machines an ability to copy artists so that it becomes tough to differentiate artificial art or photos from real ones. Neural networks can generate very realistic images, videos, and music starting a new industry of generated art. This fact also played a black joke by giving birth to deep fakes. Deep fakes are so detailed that governments and companies spend tons of money to fight this phenomenon because of its possible harm.

BUSINESS

Nowadays, among various uses of artificial intelligence in daily life, business sphere is the one where AI can bring a plethora of benefits. Firstly, AI is creating lots of working places for talented people from the whole world, such as programmers, managers and scientists. Secondly, AI contributed to the emergence of data engineers, and data scientists who operate complex data structures and create large algorithm ensembles.

Considering practical use cases, they depend on the type of business. For instance, recommendation systems give you possibilities to build a profile of business clients and recommend them something that will meet their needs. Such systems are widely used by different kinds of retailers (Amazon), streaming platforms (Netflix), and advertisement platforms (Google). These algorithms are based on the idea that similar people like similar products.

Neural networks for making decisions and predictions are becoming increasingly popular. For example, Google uses AI to check Play Market applications; banks use algorithms to determine whether credit should be approved or not; logistics use AI to optimize their delivery management. For instance, Tesla integrated AI into their business to create self-driven innovative cars.

Another good way of AI implementation is to exploit it as a tool for the analysis of the market dynamics and prediction of changes within it. Such technology will enable people with simplified ways to find unrecognised and hidden trends that will give a huge advantage over other business competitors.

AI technologies boost the efficiency of ads – marketers better understand customers by analysing their behaviour. Moreover, artificial intelligence allows to fine tune advertising campaigns, which helps attract new users. For example, the technology uses Independent Media (IM) with the aim of ad sales optimization. AI analyses ad auctions and identifies the amount of money an ad maker will pay for the banner demonstration using predictive technologies.

MANUFACTURING

A human factor and different sorts of frauds are the main cause of manufacturing accidents. It's possible to reduce it by implementing smart data-driven algorithms that will

automatically check all sensors and control the process of manufacturing that may result in saved money, products, and possibly human lives.

It can be useful not only to find and detect fraud but also to predict its appearing to protect manufacturers from possible asset failures. It will also greatly reduce the chance of costly downtime and extend the remaining useful life of the equipment. *Robotics giants* have recently shown robots that have an embedded AI that can be trained. The integration of such AI-driven robots can result in a more accurate manufacturing process.

SCIENCE

In addition to observation and simulation, generative modelling became the third scientific approach to discovering the world. This method questions how likely it is to observe Y when you have some X solely. Generative modelling takes some data and breaks it into minimal elements, namely, latent spaces. Scientists can understand physical processes occurring in a system by manipulating such latent spaces.

Such an approach looks very similar to the simulation, but the difference is significant. If you take on the second approach, you have basic assumptions about some system, and you test them using a simulation. In generative modelling, you have nothing except your data, and you want your data to describe its internal processes and dependencies.

For instance, one of the most famous cases of AI usage in science occurred in the astronomy area when “Deep-CEE” (Deep Learning for Galaxy Cluster Extraction and Evaluation) was created for a more accelerated process of finding galaxy clusters.

HEALTHCARE

Although AI can use sophisticated algorithms and methods to simplify work for physicians, it will never replace them in the near future (AI isn't able to generalise to the whole number of tasks yet). On the other hand, AI can already replace real doctors in some particular areas (radiology). The big boom of medical data allowed us to build tools that can extract hidden data granting doctors possibilities to make more accurate decisions. Remarkable progress was made in the sphere of drug development. A drug development process takes years and costs billions of dollars. It also requires lots of testing that starts on animals and then proceed with patients. Such procedures are required to find different side effects that are likely to appear during the development.

Conclusion. AI has started a new era in every sphere of human activity by replacing people working on low paid routine jobs, granting us the possibility to make smart decisions. The process of transformations isn't quick, but it may even seem dangerous, as something that can threaten humanity because of its unlimited possibilities. However, the AI development has already resulted in its beneficial implementation in many different spheres.

Exercise 1. Translate the following words:

Безліч переваг, високі очікування, прориви, комп'ютерний зір, розпізнавання мовлення, запровадження ШІ, камери спостереження, потокові платформи; neural networks, machine learning, knowledge-based approach, chunks of unprocessed raw data, plate recognition, generative adversarial networks, latent spaces, to fine tune.

Exercise 2. Determine false statements and correct them:

1. AI tools have been built that can extract hidden data from some amounts of medical data granting doctors possibilities to make more accurate decisions.
2. AI isn't dangerous and can't threaten humanity because of its limited possibilities.
3. AI can use sophisticated algorithms and methods to simplify work for physicians, it will replace them in the near future.
4. AI doesn't create working places for talented people, even in IT sphere.
5. Generative modelling takes some data and breaks it into latent spaces.
6. The analysis of the market dynamics enables people with simplified ways to find unrecognised and hidden trends.
7. Recommendation systems use algorithms which are based on the idea that even different people like similar products.
8. Neural networks can generate very realistic images, videos, and music which gave birth to deep fakes.
9. AI is unhelpful in advertising campaigns.
10. Automarshall system uses surveillance cameras to identify car drivers.

Exercise 3. Answer the following questions:

1. What do recommendation systems do and where are they used?
2. Why neural networks for making decisions and predictions are popular?
3. What is the third scientific approach to discovering the world?
4. What is the main cause of manufacturing accidents?
5. What is IM and what is it used for?
6. How is AI used at parking lots?
7. Which jobs in IT has AI helped to create?
8. Could you describe the phenomenon of deep fakes generated by neural networks?
9. How is AI used in nature protection?
10. What are positive and dangerous aspects of AI implementation?

Exercise 4. Insert the missing words from the box below:

<i>squishable</i> <i>repair</i> <i>puttering around</i> <i>approach</i> <i>squirm</i>

Robots That Slink and Squirm

Robots, once the stuff of science fiction, are everywhere. Robotic geologists are 1 _____ on Mars, little Roombas suck up dirt in the breakfast nook. But most robots are made up of hard components and don't much resemble the creatures that walk, crawl and 2 _____ all around us.

At Tufts University, a multidisciplinary team of researchers wants to take a softer 3 _____. The Biomimetic Technologies for Soft-bodied Robots project is trying to make an ersatz caterpillar that will move around in pretty much the same way as the real thing. The researchers see the potential to use the 4 _____, relatively simple creations to find land mines, 5 _____ machinery in hard-to-reach spots and even diagnose and treat diseases.

Text 2. Risks and concerns of AI

Despite a huge impact of artificial intelligence on everyday life and its endless benefits, AI has its risks for business. They are strongly related to the current state of the industry and its development. They also can be grouped in accordance with the following aspects:

1. *Complexity.* AI algorithms are considered very complex and vary from problem to problem. Hence, they require highly educated developers and scientists for development and maintenance. However, remarkable progress in the industry resulted in the appearance of multiple high-level frameworks that don't require strong knowledge, such as Keras, TensorFlow, Caffe, etc.

2. *Cost.* This problem intertwines with the previous one. High complexity resulted in a higher price and a lack of developers. Also, a high price depends on the computational complexity of modern algorithms and the accessibility of data required to train such models. Considering the computational complexity, it's not possible to reduce its influence on hardware. It's some complexity-performance trade-off. Lower complexity results in lower performance and price, while higher complexity results in higher performance and price.

3. *Time.* AI projects require a huge amount of time to be developed because of model development and training processes. It's possible to reduce the time by using pre-trained models and open datasets. This problem is also directly related to the complexity of the algorithm as higher complexity requires more time to develop. It should be noticed that all AI projects bring long-term benefits; however, not all businesses are able to wait until AI returns all invested money.

4. *Quality*. Model quality depends on many parameters, such as an amount of data and complexity. Early models and AI techniques were elementary to catch all connections between data and give a good result. Recent advances in algorithms allowed AI to surpass human-level performance. However, there are still such tasks that can't be automated even by artificial intelligence.

Exercise 1. Translate the following words:

high-level frameworks, to intertwine, computational complexity, trade-off, open dataset, to catch all connections between, to surpass human-level performance.

Exercise 2. Answer the following questions:

1. Why does the AI have a huge impact on everyday life?
2. Why do AI algorithms require highly educated developers and scientists for their development and maintenance?
3. What is the cause of a high price of AI products?
4. How can be reduced the time spent on training processes of the AI?
5. Does AI always surpass human-level performance?

THE FUTURE PERFECT TENSE

shall have	+ V ³
will have	

I (we) shall have written (translated)	
You (he, she, it, they) will have written (translated)	
Will you have written (translated)?	Yes, I shall. No, I shan't.

I shall not (shan't) have written (translated)
He will not (won't) have written (translated)

Майбутній завершений час вживається для вираження результату, який завершиться до певного моменту або до початку іншої дії в майбутньому.

— *She will have done the work before you come.*

1. They will have come ... 2. The manager will have begun the meeting ... 3. I shall have started the work ... 4. My friend will have left school ... 5. Our family will have left for Canada ... 6. My little brother will have had breakfast ...

Ex. 3 PUT QUESTIONS TO THE WORDS IN BOLD TYPE:

1. My elder brother will have translated the text by 10 o'clock. 2. We shall have prepared supper before you come from work. 3. I shall have written the report by this time tomorrow. 4. The pupils of our form will have passed the exam in English by 12 o'clock. 5. The teacher will have checked up our tests by that time. 6. The expedition will have left for the North by April. 7. By 6 she will have taken her exam in English.

Ex. 4 MAKE UP YOUR OWN SENTENCES USING THE FOLLOWING WORD COMBINATIONS:

I	shall have given	a text	by 10 o'clock.
You	will have left	a present	before the mother comes home.
She	will have begun	the work	by spring.
He	shall have written	the town	by 11 o'clock.
It	will have done	an exercise	before you ring up.
We	will have translated	an experiment	by tomorrow.
They	will have stopped	raining	by the next week.

Ex. 5 COMMENT ON THE USE OF THE FUTURE PERFECT TENSE:

1. "She will have given the answer by this time tomorrow", he replied. (Greene)
2. "I'll have come back before you finish your tea, Emily." (Maugham)
3. "We shall have returned from East by spring." (Hemingway)
4. "My sister will have reached the continent by the next month, I think." (S. K. Hocking)
5. "I suppose he will have started the travel before she returns home." (Maugham)
6. I shall be back by six, and I hope you will have had a good sleep by that time. (Marryat)
7. "I don't think Mrs. Bantry will have told us this story by that time," said Sir Henry gently. (A. Christie)
8. I shall have started out on my round by the time you go ... (Maugham)
9. "Another month will make seven weeks," she said bitterly. — "Seven weeks for what?" — "Seven weeks that I shan't have seen you ..." (Wilson)

Ex. 6 COMMENT ON THE USE OF TENSES EXPRESSING FUTURE ACTIONS OR STATES:

1. I'm going to Bertha; I'm going to Graddock direct and I mean to give him a piece of my mind. (Maugham)
2. "Dr. Ramsay is coming to luncheon tomorrow," she said. (Maugham)
3. Promise you won't do anything, Jean, till everything else has failed. (Galsworthy)
4. I'll see you before I go, Pyle. (Greene)
5. I'll come when you have no one else. (Eliot)
6. "Are you going out again, Miss Jane?" "Not me, I'm off to bed soon with a good book." (Hilton)
7. I shall tell them both that I'm going to be married with you. (Maugham)
8. I'm terribly sorry not to be able to ask you to lunch, but we're having it in rather a rush and leaving immediately after. (Murdoch)

Unit 10 Ethical issues in IT

Text 1. Data privacy

Privacy, trust and security are closely intertwined, as are law and ethics. Privacy preservation and security provisions rely on trust. Law provides a resolution when ethics cannot (e.g., ethics knows that stealing is wrong; the law punishes thieves). Privacy breaches disturb trust and run the risk of diluting or losing security; it is a show of disrespect to the law and a violation of ethical principles. Data privacy (or information privacy or data protection) is about access, use and collection of data, and the data subject's legal right to the data. This refers to:

- Freedom from unauthorized access to private data
- Inappropriate use of data
- Accuracy and completeness when collecting data about a person or persons (corporations included) by technology
 - Availability of data content and the data subject's legal right to access; ownership
 - The rights to inspect, update or correct these data

Data privacy is also concerned with the costs if data privacy is breached, and such costs include the so-called hard costs (e.g., financial penalties imposed by regulators, compensation payments in lawsuits such as noncompliance with contractual principles) and the soft costs (e.g., reputational damage, loss of client trust). Data privacy can be achieved through technical and social solutions. Technical solutions

include safeguarding data from unauthorized or accidental access or loss. Social solutions include creating acceptability and awareness among customers about whether and how their data are being used, and doing so in a transparent and confidential way. Employees must commit to complying with corporate privacy rules, and organizations should instruct them in how to actively avoid activities that may compromise privacy.

Next to technical and social solutions, the third element of achieving privacy is complying with data protection laws and regulations, which involves two issues. The first concern is that legal regulation is slow and, thus, unable to keep up with the rapid developments of information technology. Legal solutions are usually at least one step behind technological developments. Data privacy by electronic means should, therefore, be based not only on traditional jurisdiction, but also on soft law, i.e., self-binding policies such as the existing data privacy principles. Soft law may be more effective than hard law.

Exercise 1. Translate the following words:

privacy preservation, security provisions, ownership, to breach data privacy, financial penalties, lawsuits, noncompliance with principles, soft costs, reputational damage, in a transparent and confidential way; положення безпеки, послаблення конфіденційності, несанкціонований доступ, невиконання (недотримання), витрати, охорона даних, неналежне використання, прийнятність, саморегулюючі стратегії, випадковий доступ, досягти за допомогою, порушити (поставити під загрозу), дотримуватися.

Exercise 2. Determine and correct false sentences:

1. Privacy breaches make users lose their security and show disrespect to the law.
2. Data privacy is about a hidden collection of data with access only to the owner.
3. Hard costs refer to reputational damage and loss of client trust.
4. Soft costs may include financial penalties imposed by regulators or compensation payments in lawsuits.
5. Social solutions include creating awareness among customers about whether and how their data are being used in a transparent and confidential way.
6. Employees can choose which corporate privacy rules they want to comply with.
7. Legal solutions are usually at least one step forward technological developments.
8. Complying with data protection laws and regulations, which involves 5 issues.

Exercise 3. Answer the following questions:

1. What is a data privacy?
2. What does it refer to?
3. What should data privacy by electronic means be based on?
4. How can data privacy be achieved?
5. What harmful effect do Privacy breaches have?
6. What do technical solutions include?
7. What do social solutions include?
8. What do social solutions include?
9. What does complying with data protection laws and regulations involve?
10. What are self-binding policies?

Exercise 4. Connect the Six Data Protection Principles with their definitions:

- | | |
|--|---|
| a) Accuracy and Retention Principle | e) Data Access and Correction Principle |
| b) Data Security Principle | f) Data Use Principle |
| c) Openness principle | |
| d) Data Collection and Purpose Principle | |

1 _____ Personal data must be collected in a lawful and fair way for a purpose directly related to a function/activity of the data user (i.e., those who collect personal data). Data subjects (i.e., individuals from whom personal data are collected) must be notified of the purpose and the classes of persons to whom the data may be transferred. Data collected should be necessary, but not excessive.

2 _____ Personal data must be accurate and should not be kept for a period longer than is necessary to fulfill the purpose for which they are used.

3 _____ Personal data must be used for the purpose for which the data are collected or for a directly related purpose, unless voluntary and explicit consent with a new purpose is obtained from the data subject.

4 _____ A data user needs to take reasonably practical steps to safeguard personal data from unauthorized or accidental access, processing, erasure, loss or use, while taking into account the harm that would affect the individual should there be a breach.

5 _____ A data user must make personal data policies and practices known to the public regarding the types of personal data it holds and how the data are used.

6 _____ Data subjects must be given access to their personal data and allowed to make corrections if the data are inaccurate.

Text 2. 5 Ethical Issues in Technology to Watch for in 2024

Critical decisions have to be made to ensure we are protecting personal freedoms and using data appropriately. Here are the top five most important ethical issues in 2024.

1. Misuse of Personal Information. One of the primary ethical dilemmas in our technologically empowered age revolves around how businesses use personal information. As we browse internet sites, make online purchases, enter our information on websites, engage with different businesses online and participate in social media, we are constantly providing personal details. Companies often gather information to hyper-personalize our online experiences.

Personal information is the new gold, as the saying goes. We have commoditized data because of the value it provides to businesses attempting to reach their consumer base. But when does it go too far? For businesses, it's extremely valuable to know what kind of products are being searched for and what type of content people are consuming the most. Facebook in particular has come under fire several times over the years for selling personal data it gathers on its platform.

2. Misinformation and Deep Fakes. We used to believe that video told a story that was undeniably rooted in truth. But deep fake technology now allows such a sophisticated manipulation of digital imagery that people appear to be saying and doing things that never happened. The potential for privacy invasion and misuse of identity is very high with the use of this technology.

3. Lack of Oversight and Acceptance of Responsibility. Most companies operate with a hybrid stack, comprised of a blend of third-party and owned technology. As a result, there is often some confusion about where responsibility lies when it comes to governance, use of big data, cybersecurity concerns and managing personally identifiable information or PII. Whose responsibility is it really to ensure data is protected? If you engage a third party for software that processes payments, do you bear any responsibility if credit card details are breached? The fact is that it's everyone's job. Businesses need to adopt a perspective where all collective parties share responsibility.

4. Use of AI. Artificial intelligence certainly offers great business potential.

Facial recognition: Use of software to find individuals can quickly become a less-than-ethical problem. According to the *NY Times*, there are various concerns about facial recognition, such as misuse, racial bias and restriction of personal freedoms. The ability to track movements and activity quickly morphs into a lack of privacy. Facial recognition also isn't foolproof and can create bias in certain situations.

Replacement of jobs: While this is anticipated to a certain degree, AI is meant to increase automation of low-level tasks in many situations so that human resources can be used on more strategic initiatives and complicated job duties. The large-scale elimination of jobs has many workers concerned about job security, but AI is more likely to lead to job creation.

Health tracking: The pandemic brought contact tracing into the mainstream. Is it ethical to track the health status of people and what the limitations do we place on them?

Bias in AI technology: Technology is built by programmers and inherits the bias of its creators. “Technology is inherently flawed. AI systems learn to make decisions based on training and coding data, which can be tainted by human bias or reflect historical or social inequities,” according to *Forbes*. Leading AI developer Google has even experienced an issue where AI software believes male nurses and female historians do not exist.

5. *Autonomous Technology*. Self-driving cars, robotic weapons and unmanned drones for service are a thing of the present and they come with ethical dilemmas. Autonomous technology packs a punch when it comes to business potential, but there is significant concern that comes with allowing programmed technology to operate seemingly without needed oversight. It’s a frequently mentioned ethical concern that we trust our technology too much without fully understanding it.

Ethical Practices in Technology are about ensuring there is a moral relationship that exists between technology and users.

1. *Respect for Employees and Customers*. Businesses that engage in ethical technology have a firm moral sense of employee rights and customer protections. Data is valuable, but the employees and customers who power your business are undoubtedly the greatest asset.

2. *Moral Use of Data and Resources*. Data can also undergo an invasive use of privacy bringing many ethical considerations to the forefront. Data protection measures and compliance procedures can help ensure that data isn’t leaked or used inappropriately.

3. *Responsible Adoption of Disruptive Tech*. Disruptive tech often isn’t just a way to outpace the competition – it’s the only way to break even. But embracing new technologies doesn’t have to coincide with an ethical challenge. Do your due diligence to ensure that the technology you adopt has protections in place and you’ll be well on your way to practicing ethical tech.

4. *Create a Culture of Responsibility*. Ultimately, we need to create a culture of responsibility within technology. If the information technology workforce and industry giants believe they are responsible for the safe and ethical usage of technology, then we will see more governance and fair use of data.

Exercise 1. Translate the following words:

technologically empowered age, impede the right to privacy, to commoditize data, to come under fire, privacy invasion and misuse of identity, lack of oversight, cybersecurity concerns; руйнівна технологія, чесне використання даних, перетворюватися на, надійний, широкомасштабне усунування, залучити в основне русло, соціальні нерівності, наражатися на агресивне використання, процедури відповідності.

Exercise 2. Answer the following questions:

1. What are the top five most important ethical issues?
2. To what extent does the information gathered by companies about us actually impedes our right to privacy?
3. What is deep fake technology?
4. In which points may AI systems cross an ethical line into dangerous territory?
5. What is a significant concern about using an autonomous technology?
6. What are ethical practices in technology?
7. Are employee rights and customer protections really more important than data?
8. How can we use morally data and resources?
9. What is a disruptive tech?
10. How can we create a culture of responsibility?

The Perfect Continuous Tenses

THE PRESENT PERFECT CONTINUOUS TENSE

have been	+ V _{ing}
has been	

I (you, we, they) have been writing (translating)
He (she, it) has been writing (translating)

Have you been writing (translating)?	Yes, I have.
	No, I haven't.
Has he (she, it) been writing (translating)?	Yes, she has.
	No, she hasn't.

I have not (haven't) been writing (translating)
He (she, it) has not (hasn't) been writing (translating)

Теперішній завершено-тривалий час виражає дію, яка почалася до теперішнього моменту, тривала протягом деякого періоду часу і продовжувалася у момент мовлення або щойно завершилася безпосередньо перед моментом мовлення. **Слова-показники:** for 2 hours, for a month, for the last two days (years, weeks), since 5 o'clock; у питаннях, які починаються зі слів: **How long? Since when?**

Структура стверджувального речення

Іменник/ займенник + допоміжне дієслово (has, have) + been + основне дієслово із закінченням – **ing** + інші частини мови

I (you, we, they) have been writing (translating) a book.

He (she, it) has been writing (translating) a book.

Структура запитального речення

Допоміжне дієслово (has, have) + been + іменник/займенник + основне дієслово із закінченням – **ing** + інші частини мови

Have you been writing (translating) a book? Yes, I have.

No, I haven't.

Has he (she, it) been writing (translating) a book? Yes, she has.

No, she hasn't.

Структура заперечного речення

Іменник / займенник + допоміжне дієслово (has, have) + been + частка not + основне дієслово із закінченням – **ing** + інші частини мови

I have not (haven't) been writing (translating) a book.

He (she, it) has not (hasn't) been writing (translating) a book.

THE EXERCISES

Ex. 1 TRANSLATE THE SENTENCES INTO UKRAINIAN:

1. She has been writing a composition for an hour already. 2. I have been reading an interesting book since I returned home. 3. My brother has been working at English translation since the very morning. 4. He has been suffering from a headache all day long. 5. We have been gathering mushrooms ever since sunrise. 6. I have been listening to the music since 5 o'clock. 7. My friend has been training his dog for 3 years already. 8. The gardener has been sorting the apples since morning. 9. The children have been playing football since the mother came home.

EX. 2 COMPLETE THE FOLLOWING SENTENCES ADDING SUITABLE ADVERBIAL MODIFIERS AS IN THE MODEL:

Model: I have been reading ...
— I have been reading since 7 o'clock.
— I have been reading for 2 hours already.

1. He was been ill... 2. She has been working in the garden ... 3. ... have you been here? 4. The baby has been crying ... 5. The students have been passing their exam ... 6. The workers have been building the new bridge ... 7. I have been listening to the music ... 8. My sister has been cleaning the room ... 9. They have been playing tennis ...

EX. 3 ANSWER THE FOLLOWING QUESTIONS:

1. How long have you been learning English? 2. How long have you been reading this book? 3. Do you play chess? How long have you been playing it? 4. How long has your sister (brother) been studying at school? 5. How long have you been doing these exercises? 6. Has it been raining since the very morning? 7. Have you been living in this town for 5 years?

EX. 4 PUT QUESTIONS TO THE WORDS IN BOLD TYPE:

1. My elder brother has been playing football since the childhood. 2. The boy has been doing his homework for 2 hours already. 3. The pupils have been writing a dictation for 40 minutes. 4. My mother has been preparing dinner since 11 o'clock. 5. The girls have been watching TV since they came home.

EX. 5 COMMENT ON THE USE OF THE PRESENT PERFECT CONTINUOUS TENSE:

1. "I have been drinking all day and making merry," said Keawe. (Stevenson)
2. "You look very tired," he said sympathetically. "I am afraid you have been overdoing yourself." (S. K. Hocking)
3. "I am afraid I have been making an awful simpleton of myself," she said shyly. (S. K. Hocking)
4. "I don't see anything in it (fire), Tom, particularly. But since I have been looking at it, I have been wondering about you and me grown up." (Dickens)
5. "Now who has been talking? I suppose the girl has." (A. Christie)
6. Dr. Lloyd cleared his throat. "I've been thinking," he said rather diffidently. "Do you say, Mrs. Bantry, that you yourself were ill?" (A.Christie)

7. "My-my lord," said Gashford, starting and looking round as though in great surprise. "I have disturbed you!" "I have not been sleeping." (Dickens)
8. "I have been telling Miss Meadows that civilisation has extended over all these regions, ..." (S. K. Hocking)

Ex. 6 TRANSLATE INTO UKRAINIAN. COMMENT ON THE USE OF THE PRESENT PERFECT AND PRESENT PERFECT CONTINUOUS TENSES.

1. Ever since I saw you last I have been thinking, thinking. (Dreiser)
2. She did not look at him, "I've been trying to tell you all day ..." (Cronin)
3. She's been married happily now these past four years ... (Braine)
4. He has been studying at the University for 6 years.
5. "I've been thinking it over, Mr. Holmes, and I feel that I have been hasty in taking your remarks amiss." (Conan Doyle)
6. "I've had nothing to eat all day," the large boy said mournfully. (Coppard)
7. "So, here you are! And I've been looking for you everywhere." (Bennett)
8. "By the way, you've been talking about me. I see it written in your faces. Your silence tells me all. I could even guess what you've been saying ...", Gladys cried, making a face at him. (Priestley)
9. Years have passed since we began this life. (Dickens)
10. I've been making some sandwiches. Won't you come up and have some? (A. Christie)

Unit 11 General safety principles of IT technologies security.

Text 1. Data damage and restore

Data restore is the process of copying backup data from secondary storage and restoring it to its original location or a new location. There are several circumstances for it:

1. Human error, where data is accidentally deleted or damaged.
2. Malicious attacks where data is exposed, stolen or infected.
3. Power cuts.
4. Human-made or natural disasters.
5. Equipment theft, malfunctions or failures;
6. Firmware corruption.

Data restore makes a usable copy of the data available to replace lost or damaged data and ensures the data backup is consistent with the state of the data at a specific point in time before the damage occurred.

In the case of file data corruption, a user might accidentally delete a file or overwrite important data within a file. File system corruption can also result in lost data. Corruption can render data files unreadable. It can also break the structure. Data can also be lost as a result of malicious activity. A disgruntled user, for instance, might delete or password lock some of the organization's most sensitive data. Similarly, data loss might occur if data becomes encrypted by ransomware or infected by a virus. Data loss can also occur due to various types of hardware failures. If enough disks within a storage array were to simultaneously fail, for instance, data loss will occur. Similarly, it's possible for a disk controller to fail in a way that results in corrupt data being written to a storage array. Of course, physical disasters can also result in data loss. An organization's data centre might, for example, be destroyed by fire or by flood. Backups can be written to a backup device like PC or a laptop, to cloud storage or to an external drive. Data are usually protected by traditional backup, snapshots or continuous data protection (CDP).

Exercise 1. Translate the following words and expressions:

Equipment theft, malfunctions, firmware corruption, malicious attacks, malicious activity, unreadable, disgruntled user, ransomware, snapshots, cloud storage;

резервні дані, відключення електроенергії, пошкоджені дані, пошкодження файлової системи, зашифрований, захистити паролем, масив зберігання даних, вразливі дані, апаратний збій, резервний пристрій, безперервний захист даних.

Exercise 2. Determine the false statements and correct them:

1. Data restore is the process of creating similar data basing on backed up data.
2. Corruption can render data files unreadable.
3. Hardware failures cannot provoke data loss.
4. Backups cannot be written to a laptop.
5. When data becomes encrypted by ransomware it is always infected by a virus.
6. Data can be lost as a result of malicious activity, software or hardware failures.
7. CDP means continuous data protection.
8. Some of the organization's most sensitive data can't be deleted by a disgruntled user.
9. Data are often protected by traditional backup and snapshots.
10. If a disk controller fails, the results in corrupt data are written to a storage array.

Exercise 3. Answer the following questions:

1. What are the circumstances for a data restore?
2. What is a data restore?
3. What example of a malicious activity can you name?
4. Which types of data protection are mentioned in the text?
5. What example of a hardware failure can you name?
6. What kinds of backups do you know?
7. What happens if a disk controller fails?
8. What may a user do in the case of file data corruption?
9. What would happen if enough disks within a storage array were to simultaneously fail?
10. Which physical disasters can result in data loss?

Exercise 4. Insert the missing words from the box below:

<i>Internet security</i>	<i>Application security</i>	<i>Network security</i>
<i>Cloud security</i>	<i>IoT and OT security</i>	<i>Endpoint security</i>

Types of IT security

1 _____ addresses external and internal cyberthreats to an organization's cloud-based infrastructure, applications and data. It operates on the shared responsibility model: Generally speaking, the cloud service provider (CSP) is responsible for securing the infrastructure with which it delivers cloud services, and the customer is responsible for securing whatever it runs on that infrastructure.

2 _____ protects end-users and endpoint devices, like desktops, laptops, cellphones and servers, against cyberattacks. Endpoint security also protects networks against cybercriminals who try to use endpoint devices to launch cyberattacks on their sensitive data and other assets.

3 _____ has three chief objectives: The first objective is to prevent unauthorized access to network resources. Second, it aims to detect and stop cyberattacks and security breaches in real-time. Third, it ensures that authorized users have secure access to the network resources they need when needed.

4 _____ refers to measures developers take while building an app. These steps address potential vulnerabilities, and protect customer data and their own code from being stolen, leaked or compromised.

5 _____ protects data and sensitive information transmitted, stored or processed by browsers or apps. Internet security involves a range of security practices and technologies that monitor incoming internet traffic for malware and other malicious content. Technologies in this area include authentication mechanisms, web gateways, encryption protocols and, most notably, firewalls.

6 _____ focuses on preventing Internet-connected sensors and devices, for example doorbell cameras, smart appliances, modern automobiles. It aims to stop hackers from taking control of these devices. It also prevents hackers from using these devices to infiltrate an organization's network. Operational technology security focuses more specifically on connected devices that monitor or control processes within a company—for example, sensors on an automated assembly line.

Text 2. Information Security

Information security (sometimes referred to as InfoSec) covers the tools and processes that organizations use to protect business or personal information. InfoSec is a growing and evolving field that covers a wide range of fields, from network and infrastructure security to testing and auditing. Information security protects sensitive information from unauthorized activities, including inspection, modification, recording, and any disruption or destruction. The goal is to ensure the safety and privacy of critical data such as customer account details, financial data or intellectual property.

The consequences of security incidents include theft of private information, data tampering, and data deletion. Attacks can disrupt work processes and damage a company's reputation, and also have a tangible cost.

Organizations must allocate funds for security and ensure that they are ready to detect, respond to, and proactively prevent attacks such as phishing, malware, viruses, malicious insiders, and ransomware.

The basic tenets of information security are confidentiality, integrity and availability. Every element of the information security program must be designed to implement one or more of these principles. Together they are called the CIA Triad.

1. Confidentiality measures are designed to prevent unauthorized disclosure of information. The purpose of the confidentiality principle is to keep personal information private and to ensure that it is visible and accessible only to those individuals who own it or need it to perform their organizational functions.

2. Integrity includes protection against unauthorized changes (additions, deletions, alterations, etc.) to data. The principle of integrity ensures that data is accurate and reliable and is not modified incorrectly, whether accidentally or maliciously.

3. Availability is the protection of a system's ability to make software systems and data fully available when a user needs it (or at a specified time). The purpose of availability is to make the technology infrastructure, the applications and the data available when they are needed for an organizational process or for an organization's customers.

Exercise 1. Translate the following words:

policy settings, evolving field, disruption, basic tenets of, data tampering, tangible cost; видалення даних, виділяти кошти на безпеку, інтелектуальна власність, цілісність, несанкціоноване розголошення інформації, змінити випадково або зловмисно.

Exercise 2. Answer the following questions:

1. What is information security?
2. Which fields does it cover?
3. What kinds of unauthorized activities does it protect the information from?
4. What is the goal of information security?
5. What security attacks and their consequences do you know?
6. How can organizations proactively prevent them?
7. What is the CIA Triad?
8. How can you explain the purpose of the confidentiality principle?
9. What does the principle of integrity ensure?
10. How do you understand the availability principle?

THE PAST PERFECT CONTINUOUS TENSE

had been + V_{ing}

I (you, he, she, it, we, they) had been writing (translating)

Had you been writing (translating)?	Yes, I had.
	No, I hadn't.

I had not (hadn't) been writing (translating)

Минулий завершено-тривалий час вказує на тривалу дію, що почалася раніше іншої дії, яка зазвичай виражається формою Past Perfect, і під час настання цієї дії все ще деякий час тривала.

Слова-показники: for two hours, for a month, since 5 o'clock, by last month.

Структура стверджувального речення

Іменник/ займенник + допоміжне дієслово (had) + been + основне дієслово із закінченням – **ing** + інші частини мови

I (you, we, they) had been writing (translating) a book.

He (she, it) had been writing (translating) a book.

Структура питального речення

Допоміжне дієслово (had) + been + іменник/займенник + основне дієслово із закінченням – **ing** + інші частини мови

Had you been writing (translating) a book?

Yes, I had.

No, I hadn't.

Had he (she, it) been writing (translating) a book?

Yes, she had.

No, she hadn't.

Структура заперечного речення

Іменник / займенник + допоміжне дієслово (had) + been + частка not + основне дієслово із закінченням – **ing** + інші частини мови

I had not (hadn't) been writing (translating) a book.

He (she, it) had not (hadn't) been writing (translating) a book.

THE EXERCISES

Ex. 1 COMPLETE THE SENTENCES ACCORDING TO THE MODEL:

Model: She had been reading a book ...

— She had been reading a book for an hour before her mother came home.

— She had been reading a book for two hours when her parents returned home from work.

1. She had been working here ...
2. The teacher had been explaining the rule ...
3. Our family had been living in that house ...
4. I had been waiting for my friend ...
5. The boys had been playing chess ...
6. The girl had been sleeping ...
7. The orchestra had been playing ...

Ex. 2 ASK QUESTIONS TO THE WORDS IN BOLD TYPE:

Model: *She had been listening to the music for two hours when her friend came to her.*

— *What had she been doing for two hours when her friend came to her?*

1. The young man had been working at the laboratory for two years before he decided to enter the University.
2. We had been packing up our things for two hours when it was time to go to the railway station.
3. The scientist had been working at the experiment for about a year before the problem was solved.
4. They had been sailing for about a month when they saw a small island.
5. It had been snowing all day when I left home.
6. I had been dusting the room for half an hour when my mother came home.
7. She had been waiting for forty minutes before the taxi came.
8. The girl had been listening to the music/or two hours before her brother brought her an interesting book from the library.

Ex. 3 TRANSLATE INTO UKRAINIAN. COMMENT ON THE USE OF THE PAST PERFECT CONTINUOUS TENSE:

1. He was laughing heartily in a high key at a story which he had been telling Gabriel on the stairs... (Joyce)
2. Over tea Lanny told her about Cape Town and what he had been doing. (Abrahams)
3. The children who had been playing in front of the little church... stopped and drew near to watch the spectacle. (Abrahams)
4. Peggotty and I were sitting one night by the parlour fire, alone, I had been reading to Peggotty about crocodiles. (Dickens)
5. One night when Miss Murdstone had been developing certain household plans to her brother, ... my mother suddenly began to cry. (Dickens)
6. They had been quarrelling now for nearly three quarters of one hour... the voices floated down the corridor, from the other end of the flat. (Huxley)
7. Tom blew his smoke aside, after he had been smoking a little while, and took an observation of his friend. (Dickens)
8. We had been sitting there an hour and a half. (DM Maurier)
9. Rainborough noticed that she had been crying, her face was stained with tears... (Murdoch)
10. There were bits of work that, because I had been doing them so long, I knew better than anyone else. (Snow)

11. Rosa had been working in the factory for about two years. Before that she had been a journalist. (Murdoch)
12. As he was in dinner dress, Fanny asked where he had been dining. (Dickens)
13. He turned off the electric light. The electric light had been burning all night. (Hemingway)
14. I realized that he had come away with me in order to discuss once more what he had been already discussing for hours with his sister-in-law. (Maugham)
15. She wasn't there, ... her dress she had been wearing was lying across the chair. (A. Christie)
16. Here I saw the man, whom I had lost sight of some time; for I had been travelling in the provinces. (Dickens)

Ex. 4 COMMENT ON THE USE OF THE PAST CONTINUOUS AND THE PAST PERFECT CONTINUOUS TENSES:

1. He was hitting at my door, but I lay possum ... (Greene)
2. He liked music, but the piece she was playing had no melody for him ... (Joyce)
3. Michael rose and clutched his hat. Wilfrid had said exactly what he himself had really been thinking ever since he came. (Galsworthy)
4. He hadn't published one thing that Eric had seen, but Eric decided not to ask what he had been doing. (Wilson)
5. When the first dinner-bell went, he was pacing the deck with a cigar in his mouth, ... (S. K. Hocking)
6. "... and they gave me up with a sort of joyous exultation, though I know their hearts were breaking all the time." (S. K. Hocking)
7. The wind was freshening without; it drove the snow before it, ... (Stevenson)
8. The cold was growing sharper as the night went on. (Stevenson)
9. "It had been snowing all day when I left home. (A. Christie)
10. They had been sailing for about a month when they saw a small island. (Stevenson)

Unit 12 Work Instructions

Text 1. A Brief Guide to Writing Effective Instructions

To produce effective instructions for your warehouse workers, you should consider writing them in simple language. By doing so, you can make sure that everybody understands properly what to do at work and why. No matter what's their cognitive level or how long they've been learning the local language.

The development of Simplified Technical English (short: STE) goes back to the early 1980s. The developers' aim was to form a language that makes technical matters understandable for speakers of English as their second language. It is based on a restricted set of language rules and a dictionary with words and word forms to use and those to avoid. Technical writers still use this set of rules for their work.

Originally, STE was developed for aerospace industry maintenance manuals. Maybe you've also come across the so-called plain language more and more administrative and government-related texts are written in.

Tips for Writing Effective Work Instructions in Simplified Technical English

Not only professional technical writers can make your instructional documents fit STE standards but there are also software solutions that may guide you on your way to efficient instructional texts. In addition to that, there are products that provide you with your instructions in the right language for your workers right away. If you want to try enhancing the understandability of your instructions by yourself, try our 12 tips:

1. Put important messages at the start.
2. Use short and simple words (no hard words!).
3. Write short sentences (about 15-25 words).
4. Put one step in one sentence.
5. Divide your instructions into small chunks (make step-by-step instructions)
6. Avoid words with several meanings. However, if you have to use ambiguous words, only use them with ONE of their meanings.
7. Avoid long words. Use words with common use, i.e. *use* instead of *utilize*.
8. Avoid abbreviations (If you do use them, explain them!).
9. Delete all redundant words.
10. Use the active voice. Never use the passive voice!
11. Use simple tenses (past, present, and future).
12. Put the action in a command, then explain why you want your workers to do it.

Exercise 1. Translate the following words:

aerospace industry, maintenance manual, efficient instructional text, ambiguous words, step-by-step instructions, divide instructions into small chunks, abbreviations; спрощена технічна англійська мова, обмежений набір мовних правил, інструкція з обслуговування, пласка мова, зрозумілість.

Exercise 2. Determine false statements and correct them:

1. The Simplified Technical English requires the usage of complex tenses.
2. The Simplified Technical English is a recent creation.
3. The original usage of the Simplified Technical English was in the Royal Navy.
4. There are software solutions that guide you on your way to efficient instructional texts.
5. In STE we put one step in one sentence.
6. We can use words with several meanings and ambiguous words in instructions.
7. We may use both the active voice and the passive voice.
8. Don't use long and complex words.
9. We have to divide our instructions into big chunks to make step-by-step instructions.
10. Only professional technical writers can make your instructional documents fit STE standards.

Exercise 3. Answer the following questions:

1. What is STE?
2. What was the developers' aim when forming a technical language?
3. What was STE originally developed for?
4. Which characteristics are proper to the STE?
5. Who uses STE?
6. Is STE widening its sphere of usage?
7. What will happen if you use many redundant words in the text?
8. What kind of tenses should you use in the instructions?
9. What should you do when using abbreviations?
10. Why do you have to explain your command to your workers?

Exercise 4. Insert the missing words from the box below:

*instructive wordless written familiar consistent conveyed flowcharts numbered
step-by-step technical*

How to Use English Grammar for Writing Instructions

In business writing, 1 _____ writing, and other forms of composition, instructions are 2 _____ or spoken directions for carrying out a procedure or performing a task. It is also called 3 _____ writing.

4 _____ instructions typically use the second-person point of view (you, your, yours). Instructions are usually 5 _____ in the active voice and the imperative mood: Address your audience directly.

Instructions are often written in the form of a 6 _____ list so that users can clearly recognize the sequence of the tasks. Effective instructions commonly include visual elements (such as pictures, diagrams, and 7 _____) that illustrate and clarify the text. Instructions intended for an international audience may rely entirely on pictures and 8 _____ symbols. (These are called 9 _____ instructions.) Good instructions are unambiguous, understandable, complete, 10 _____, and efficient.

Text 2. Basic Features of instructions

Instructions tend to follow a consistent step-by-step pattern, whatever you are describing. Here are the basic features:

1. Specific and precise title
2. Introduction with background information
3. List of parts, tools, and conditions required
4. Sequentially ordered steps
5. Graphics
6. Safety information
7. Conclusion that signals completion of task

Instructions can be either freestanding documents or part of another document. In either case, the most common error is to make them too complicated for the audience. Carefully consider the technical level of your readers. Use white space, graphics, and other design elements to make the instructions appealing. Most important, be sure to include Caution, Warning, and Danger references before the steps to which they apply.

To evaluate the accuracy and clarity of a set of instructions, invite one or more individuals to follow your directions. Observe their progress to determine if all steps are completed correctly in a reasonable amount of time. Once the procedure has been completed, ask this test group to report on any problems they may have encountered and to offer recommendations for improving the instructions.

Exercise 1. Translate the following words:

Sequentially ordered, freestanding documents, to make the instructions appealing, caution, warning, to complete steps, in a reasonable amount of time;

покрокова схема, фонові інформація, покращити інструкції, стикнутися з проблемами, доповісти, точність, ясність, запропонувати рекомендації.

Exercise 2. Answer the following questions:

1. What are the basic features of instructions?
2. What are common errors in making instructions?
3. How can we make the instructions appealing?
4. How can we evaluate the accuracy and clarity of a set of instructions?
5. What should a test group report on?

THE FUTURE PERFECT CONTINUOUS TENSE

shall have been will have been	+ V _{ing}
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I (we) shall have been writing (translating)
You (he, she, it, they) will have been writing (translating)

Will you have been writing (translating)?	Yes, I shall. No, I shan't.
---	--------------------------------

I shall not (shan't) have been writing (translating)
He will not (won't) have been writing (translating)

Майбутній завершено-тривалий час виражає дію, яка почнеться до певного моменту у майбутньому і буде тривати саме до цього моменту. **Слова-показники:** for two hours, for a month, by September, since 2 o'clock; How long?

Структура стверджувального речення

Іменник/ займенник + допоміжне дієслово (shall, will) + been + основне дієслово із закінченням – **ing** + інші частини мови

I (we) shall have been writing (translating) a book.

You (he, she, it, they) will have been writing (translating) a book.

Структура запитального речення

Допоміжне дієслово (shall, will) + been + іменник/займенник + основне дієслово із закінченням – **ing** + інші частини мови

Will you have been writing (translating)? Yes, I shall.
No, I shan't.

Структура заперечного речення

Іменник / займенник + допоміжне дієслово (shall, will) + been + частка not + основне дієслово із закінченням – **ing** + інші частини мови

I shall not (shan't) have been writing (translating) a book.

He will not (won't) have been writing (translating) a book.

THE EXERCISES

Ex. 1 TRANSLATE INTO UKRAINIAN:

1. I shall have been translating this difficult article for two hours before you come. 2. He will have been skating with his friends for more than an hour before his parents come home. 3. They will have been listening to the music for some time when you ring them up. 4. We shall have been travelling by sea for several weeks before you join us. 5. The young man will have been making the plan of the journey for some hours by 6 o'clock in the evening.

Ex. 2 COMPLETE THE SENTENCES ACCORDING TO THE MODEL:

Model: She will have been listening to the music ...

— *She will have been listening to the music for 40 minutes before her brother comes home from school.*

— *She will have been listening to the music for some time by 12 o'clock.*

1. I shall have been writing ... 2. Our family will have been living in this house ...
 3. They will have been learning German and English ... 4. The students of our group
 will have been taking their lesson ... 5. The child will have been sleeping ... 6. The
 farmers will have been working in the field ... 7. They will have been building this
 bridge ... 8. She will have been taking her English lesson ... 9. The students will have
 been planting the trees ... 10. The little girl will have been watering the flowers ... 11.
 I shall have been doing my homework ... 12. The students will have been taking part
 in the concert ... 13. I shall have been preparing for our family party ... 14. The
 teacher will have been explaining ...

Ex. 3 MAKE UP YOUR OWN SENTENCES USING THE FOLLOWING WORDS AND WORD COMBINATIONS. USE THE FUTURE PERFECT CONTINUOUS TENSE:

*Model: clean the room / for three hours / before the mother comes home.
 — She will have been cleaning the room for three hours before the
 mother comes home.*

I	write exercises	for two hours	when you visit me.
My friend	pass the exam	for about an hour	before you come.
She	plant trees	for half an hour	by Sunday.
The pupils	have dinner	for a week	by the 1st of May.
The children	rain	for three hours	before the father returns home.
It	listen to the radio	for twenty minutes	by 6 p.m.
The boy	do homework	for two days	before the teacher looks them through.

Ex. 4 TRANSLATE INTO UKRAINIAN. COMMENT ON THE USE OF THE FUTURE CONTINUOUS, FUTURE PERFECT, FUTURE PERFECT CONTINUOUS TENSES:

- "I shan't be seeing him again, but you'll be going, Dinny ..." (Galsworthy)
- "... You wait, the sun will be shining for you when we come to Manderley." (Du Maurier)
- "I shall have started out my round by the time you go ..." (Maugham)
- Sarie's eyes passed over Lanny's face. "I'll be waiting," she said. "Good- bye." (Abrahams)
- "...all the things of Maggie's knitting will be gone and you will not have bought one ..." (Eliot)

6. "Fair cousin," said young Tasburgh, "I shall be thinking of you day and night ..."
(Galsworthy)
7. Next June I shall have been living in this house for six weeks. (H. Palmer)
8. Now it's twelve o'clock. I started writing at nine o'clock and I shall continue until three o'clock or later. Now I have been writing for three hours, and at three o'clock I shall have been writing for six hours. (H. Palmer)

Unit 13. PEOPLE WITH DISABILITIES AND COMPUTER TECHNOLOGY

Text 1. Assistive technologies for disabled people

A wide variety of technology has been created to diminish or eliminate barriers faced by people with disabilities. Hardware and software tools – known as assistive technology – can aid in tasks such as reading and writing documents, communicating with others, and searching for information online. Let's observe which technological help can be available for people with mobility disabilities, low vision, visual and hearing impairment.

Mobility disabilities can affect both fine and gross motor control. For example, Standard height computer tables may be too low for some wheelchair users or a standard keyboard or mouse may be inoperable for someone who does not have use of their arms and/or hands.

Input: equipment that provides flexibility in the positioning of monitors, keyboards, documentation, and tabletops is useful for many individuals with disabilities. Plugging all computer components into power outlet strips with accessible on and off switches makes it possible for some individuals to turn equipment on and off independently.

Individuals who have use of a finger, or who can use a mouth- or head-stick or another pointing device, control the computer by pressing keys with the pointing device. Software utilities can create "sticky keys" that electronically latch the SHIFT, CONTROL, and other keys to allow sequential keystrokes to input commands that normally require two or more keys to be pressed simultaneously. Keyboard guards (solid templates with holes over each key to assist with precise selection) can be used by those with limited fine motor control.

Left- and right-handed keyboards are available for individuals who need to operate the computer with one hand. They provide more efficient key arrangements than standard keyboards designed for two-handed users. Track balls and specialized input devices can replace a mouse.

For those who find the above options burdensome, virtual keyboards are available. Virtual keyboards can be accessed via eye gaze tracking or via switches. Eye gaze tracking devices allow the user to type by looking at different locations on the screen. Switches, meanwhile, make use of at least one muscle over which the individual has voluntary control (e.g., head, finger, knee, mouth).

Speech input provides another option for individuals with disabilities. Speech recognition systems allow users to control computers by speaking words and letters. A particular system can be trained to recognize specific voices.

Software can further aid those with mobility-related disabilities. Abbreviation expansion (macro) and word prediction software can reduce input demands for commonly used text and keyboard commands. They expand an abbreviation (such as a person's name and title) into a longer string of text and anticipate entire words after several keystrokes, respectively.

Low Vision. For some people with visual disabilities, the standard size of letters on the screen or printed in documents are usually too small for them to read. Some people cannot distinguish specific colors from others.

Input: most individuals who have visual disabilities can use standard keyboards, but large print keytop labels are sometimes useful. Output: special equipment for individuals who are visually impaired can modify display or printer output. Computer-generated content can be enlarged on the monitor or printer, thereby allowing individuals with low vision to use standard word processing, spreadsheets, email, and other software applications. For individuals with some visual disabilities, the ability to adjust the color of the monitor or change the foreground and background colors is also of value. For example, special software can reverse the screen from black on white to white on black for people who are light sensitive. Anti-glare screens can make screens easier to read. Voice output systems are also used by people with low vision.

Visual impairment. Individuals who are visually impaired cannot access visual materials. Input: most such individuals use standard keyboards, however, braille input devices are available. Braille key labels can assist with keyboard use. Output: speech output systems are used to read screen text to computer users. Special software programs (called screen readers) "read" computer screens and speech synthesizers "speak" the text. Refreshable braille displays allow line-by-line translation of screen text on a display area where vertical pins move into braille configurations as screen text is scanned. Braille displays can be read quickly by those with advanced skills, are good for editing (e.g., programming and final editing of papers), and do not

disrupt others in work areas because they are quiet. Braille printers provide "hard copy" output for users who are blind.

Deaf or Hard of Hearing. Some individuals face barriers to content presented orally. Input: students with hearing impairments use standard keyboards and mice. Output: audio output should be captioned or transcribed.

Exercise 1. Translate the following words:

fine and gross motor control, inoperable, power outlet strips, latch, keyboard guards, sip-and-puff switch registers, key labels, hard copy, foreground, to caption; зменшити бар'єри, допоміжна технологія, незрячість, глухота, послідовні натискання клавіш, розлади рухомості, користувачі інвалідних колясок, синтезатори мовлення, оновлювані дисплеї, розпізнавання мовлення.

Exercise 2. Determine false statements and correct them:

1. Mobility disabilities affects only fine motor control.
2. Keyboard guards can be used by those with limited gross motor control.
3. Power outlet strips make it possible for some individuals to turn equipment on and off independently.
4. Right-handed keyboard was made for an individual who needs to operate the computer with one hand.
5. Abbreviation expansion (macro) and word prediction software can reduce sentences into short ones.
6. Light sensitive people need special software which can reverse the screen from black on white to white on black.
7. Braille displays can be read only slowly by users and are loud.
8. Computer-generated content can be enlarged on the monitor or printer.
9. Screen readers "read" computer screens and speech synthesizers "speak" the text
10. Students with hearing impairments can't use standard keyboards and mice.

Exercise 3. Answer the following questions:

1. What is an assistive technology?
2. Which input devices are available for people with mobility disabilities?
3. What are keyboard guards?
4. Whom do left- and right-handed keyboards serve?
5. Which devices can replace a mouse?

6. How can virtual keyboards be accessed?
7. What does speech recognition systems allow users to do?
8. Which input and output devices are available for users with low vision?
9. How do braille displays work?
10. Which input and output devices do deaf people use?

Exercise 4. Insert the missing words from the box below:

Customization to consume audible response screen magnification software screen readers trackball raised dots Braille embossers refreshable braille display limited mobility

Top 10 Technologies For People With Disabilities

1 _____ are software programs available to those who are visually impaired. They make it possible to read text or understand the imagery displayed on a screen through either an 2 _____ or by displaying the text in braille. A synthetic voice often translates what is on the screen by reading the original text or reading the alternative text of images, charts, graphics, and more.

3 _____ exists to enlarge the text, images, and graphics on a user's screen. As you navigate on the screen, it moves with you, enlarging what is being worked on to help those who may not be able to see the smaller text. Because vision differs from person to person, it allows for 4 _____, making it exactly what the user needs.

5 _____ serves the same purpose as a mouse. Rather than moving the entire mouse around to move the cursor it moves in any direction to complete the same task. They are used by people who have 6 _____ in their hands and wrists.

7 _____ are printers that print documents for people who are visually impaired. The devices easily connect to one's computer to produce printed material. Instead of using ink, they create 8 _____ on the paper to make documents accessible to all.

9 _____ connects to your computer and provides output for people who are visually impaired. As the user moves the mouse along the screen, it refreshes with the most current information, allowing the users 10 _____ everything on the computer at any given time.

Text 2. Educational software for specific learning disabilities

Educational software where the computer provides multi-sensory experiences, interaction, positive reinforcement, individualized instruction, and repetition. Some students with learning disabilities who have difficulty processing written information can also benefit from completing writing assignments, tutorial lessons, and drill-and-practice work with the aid of computers.

Input. Quiet work areas may benefit some individuals with learning disabilities who are hyper-sensitive to background noise. Many benefit from using spelling and grammar checkers and word prediction programs (software that spells out whole words from fragments). Similarly, macro software that expands abbreviations can ease the entry of commonly used text.

Output. Some individuals with learning disabilities find assistive devices designed for those with visual impairments useful. In particular, large-print displays, alternative colours on the computer screen, and voice output can compensate for some reading problems. People who have difficulty interpreting visual material can improve comprehension and the ability to identify and correct errors when words are spoken or printed in large fonts.

Documentation. Some individuals with learning disabilities find it difficult to read text. Electronic documentation can be enlarged on the screen or read aloud with text-to-speech systems to make it accessible. Video tutorials and other methods of training can often be preferred.

Exercise 1. Translate the following words:

positive reinforcement, large-print displays, word prediction programs, text-to-speech systems, video tutorials, to enlarge on the screen, assistive devices, skill building;

розлади в навчанні, мультисенсорний досвід, виконувати письмові завдання, перевірячі граматики та правопису, фоновий шум, персоналізоване навчання.

Exercise 2. Answer the following questions:

1. How can educational software be useful in skill building?
2. What does software do with abbreviations?
3. Which assistive technology is helpful for people who have difficulty in understanding visual materials?
4. How can electronic documentation be made accessible?
5. What assistive devices are designed for those with visual impairments?

THE FUTURE - IN - THE PAST TENSES

The Future Indefinite - in - the Past Tense

should would	+ V ¹
-----------------	------------------

The Future Continuous - in - the Past Tense

should would	+ be + V _{ing}
-----------------	-------------------------

The Future Perfect - in - the Past Tense

should would	+ have + V ³
-----------------	-------------------------

The Future Perfect Continuous - in - the Past Tense

should would	+ have + been + V _{ing}
-----------------	----------------------------------

Майбутній-в-Минулому потрібний при узгодженні часів у непрямій мові. Допоміжні дієслова **shall/will (Future)**, що відповідають за майбутній час, автоматично змінюються на **should/would (Future-in-the Past)**, а інші складові частини видо-часових конструкцій залишаються незмінними.

Узгодження часів у непрямій мові полягає в тому, що коли в головному реченні дієслово знаходиться у минулому часі, то в підрядному додатковому реченні ми повинні вживати відповідні **Майбутні-у-Минулому (Future-in-the Past)** часи.

THE EXERCISES

Ex. 1 MAKE UP SENTENCES ACCORDING TO THE MODEL:

Model: I said that I ...

— I said that I should invite my friend on Sunday.

I told her	I he we they she	should would	go there at once.
He said			pass the examination the next week.
We promised that			get tickets beforehand.
They knew			finish the work in two days.
She answered			read the book with the dictionary.
I thought			be able to follow his advice.

Ex. 2 TRANSLATE INTO ENGLISH:

1. Батько пообіцяв, що влітку наша сім'я буде відпочивати на Чорному морі.
2. Лікар сказав, що відвідає хворого пацієнта через 2 дні.
3. Я думав, що вона не прийде вчасно.
4. Ми вирішили, що зможемо здійснити наш план.
5. Мій товариш пообіцяв, що зустріне мене на станції.
6. Вчитель сказав, що підтримає нас у цій ситуації.
7. Тренер сказав, що наша волейбольна команда поїде у Варшаву через місяць.
8. Вона думала, що вчитель не запитас її на уроці.
9. Вони знали, що не встигнуть на поїзд, якщо не поквапляться.

Ex. 3 COMMENT ON THE USE OF THE FUTURE INDEFINITE-IN-THE PAST:

1. He knew he would work in the garden in the mornings.
2. She said she would begin translating the article at 10 o'clock in the morning.
3. Jane knew that her brother would be at college at that time.
4. The doctor promised that he would come in two days again.
5. She suggested that the shop would be opened the next day.
6. He had loved and lost, and would have to make the best of it. (S. K. Hocking)
7. He left that the less he saw of her, the more easy it would be for him to fight his battle and conquer. In a day or two now they would be at Capetown, and they would go their separate ways for ever. (S. K. Hocking)
8. ... but he believed it would be different when the great spaces of the African continent had swallowed her up. (S. K. Hocking)
9. "She always used to tell me she was sure you would be easier with me than this." (Dickens)
10. "And, Thomas, it is really shameful, with my poor head continually wearing me out, that a boy brought up as you have been, and whose education has cost what yours has, should be found encouraging his sister to wonder, when he knows his father has expressly said that she is not to do it." (Dickens)
11. "... and I had better go where I can take with me some advantage of your influence, than where I should lose it altogether. (Dickens)
12. "But they wouldn't laugh sometimes, and then the father cried. Lately, they very often wouldn't laugh, and he used to go home despairing." (Dickens)

13. "... And often and often of a night he used to forget all his troubles in wondering whether the Sultan would let the lady go on with the story, or would have her head cut off before it finished." (Dickens)

14. "Mr. Sleary promised to write as soon as ever father should be heard of, and I trust to him to keep his word." (Dickens)

15. At about this point Mr. Grandgrind's eye would fall upon her, and, under the influence of that wintry piece of fact, she would become torpid again.
(Dickens)

16. "I acknowledged to this ridiculous idiosyncrasy as a reason why I would give them (English people) a little more play. (Dickens)

17. "I wondered what grandfather would say?" (S. K. Hocking)

18. ... Give it out that you were disappointed in me; that I had not developed as you expected I would; that you concluded it would be better not to marry at all than marry an unsuitable woman. Say anything you like ..." (S. K. Hocking)

Ex. 4 COMMENT ON THE USE OF THE FUTURE INDEFINITE, THE FUTURE CONTINUOUS, THE FUTURE PERFECT AND THE FUTURE PERFECT CONTINUOUS-IN-THE PAST:

1. He knew she would work at the library in the evening. He knew she would be working at the library at 9 o'clock in the morning. He knew she would have done her work by 4 o'clock. He knew she would have been working for some hours before he came to the library.

2. She said she would begin typing the article at 8 o'clock in the morning. The article is not long. She said she would still be typing it at 10 o'clock; she would have been typing it for 3 hours by 11, and she would have finished typing by 11:30.

Unit 14. Ergonomics

Text 1. The art of optimal work

The word ergonomics is composed of the Greek words "ergon" (for "work") and "nomos" (for "law") and describes the **science of human work**. The science of work aims to design a workstation in such a way that people can work optimally:

- **Effectively** (= The work result meets the requirements)
- **Efficiently** (= The work task was completed with the available resources)
- and with **satisfaction** (= Healthy and safe work, also fun to work).

As in the field of occupational health and safety, the prevention of damage caused by heavy, incorrect or excessively stressful work has top priority. The goal is the optimal adaptation of working conditions to people and a human-centred design of

work. In short: **ergonomics supports working people in completing a work task.** The laws of ergonomics also play a decisive role in the design of machines and man-machine interfaces (= interactions between technology and people). In order to achieve the above-mentioned goals, workplace design is divided into three sub-areas:

1. Physical ergonomics - environment and activities

The design of equipment and the design of the working environment. This includes criteria such as: **working heights, reach and working areas, lighting, noise, climate** (temperature and humidity), **vibrations, substrates** (floor).

The body movements (e.g. turning or bending) and activities (e.g. lifting or pushing) themselves, which a worker performs, for example, are also part of physical or physiological ergonomics. To be able to assess whether an activity is ergonomic, the following aspects are important: the **posture**, the **body movements** (= activities), the **weight of the workpiece or load carrier**, the **number of repetitions**, the **duration of the posture**.

2. Cognitive ergonomics - the human psyche

Psychological factors can also have a major impact on the health of employees as well as on the quality of work.

These include aspects such as: satisfaction, motivation, multi tasking, change of workload, monotony, fatigue, stress. Monotonous work, for example, has a negative effect on attention and perception. The susceptibility to errors increases and employees tire more quickly, which makes them dissatisfied in the long run. Multitasking and high (physical or mental) demands, on the other hand, increase the stress level. When there is a lot of stress or prolonged stress, motivation decreases and so does performance. In addition, the risk of (long-term) damage to health increases (e.g. burnout).

3. Organizational ergonomics

This type of ergonomics focuses primarily on the structural issues of professional systems: organization of processes and operational regulations. Its privileged contacts are human resources managers. They work in particular on issues related to timetables, working rhythms, modalities of activity (like physical presence vs remote work).

Ergonomics has three core objectives: enhancement of human performance, preservation of human health, guarantee of human safety.

Through preventive occupational safety and the ergonomic design of workstations, work environments and activities, the above-mentioned goals can be achieved. More efficient processes, a reduction in occupational illnesses and many other benefits are the result.

Exercise 1. Translate the following words:

efficiently, weight of the workpiece or load carrier, duration of the posture, human psyche, in the long run, enhancement of human performance, preservation of human health, burnout;

проєктувати робоче місце, попередження ушкодження, людиноцентричний дизайн, зміна робочого навантаження, схильність до помилок, професійне захворювання

Exercise 2. Determine false statements and correct them:

1. The word ergonomics represents- the science of human work.
2. The ergonomics laws supports only working people in completing a work task.
3. Physical ergonomics refers to psychological factors at work.
4. The susceptibility to errors makes employees and the employer dissatisfied.
5. If there is a lot of stress, workers' performance increases.
6. Ergonomics has three core objectives: enhancement of human performance, preservation of human health, guarantee of human safety.
7. The result of ergonomics appears in more efficient performance and a reduction in occupational illnesses.

Exercise 3. Answer the following questions:

1. What is an ergonomics?
2. What does it mean "to work optimally"?
3. What are sub-areas of a workplace design?
4. Do you know the criteria of physical ergonomics?

5. Which aspects are necessary to assess whether an activity is ergonomic?
6. Why cognitive ergonomics is very important too?
7. What may increase the stress level and lead to a burnout?
8. What is an organizational ergonomics?
9. What issues do human resources managers work in particular on?
10. What are three core objectives and benefits of ergonomics?

Exercise 4. Insert the missing words from the box below:

*workforce Scale Solutions prioritizing jobs Measure Progress assess jobs
Plan Improvements Assess Risk lagging*

Ergonomics Process

1 _____: Conducting an ergonomic assessment is a foundational element of the ergonomics process. Your ergonomic improvement efforts will never get off the ground without being able to effectively 2 _____ in your workplace for musculoskeletal disorder (MSD) risk factors.

3 _____: The core goal of the ergonomics process is to make changes to your workplace that reduce risk. Making changes at scale requires a significant planning effort that includes 4 _____ to be improved, identifying effective improvement ideas, and cost-justifying the improvement projects.

5 _____: Measurement is an important component of any successful continuous improvement process. High performing ergonomics programs are constantly measured using both leading and 6 _____ indicators.

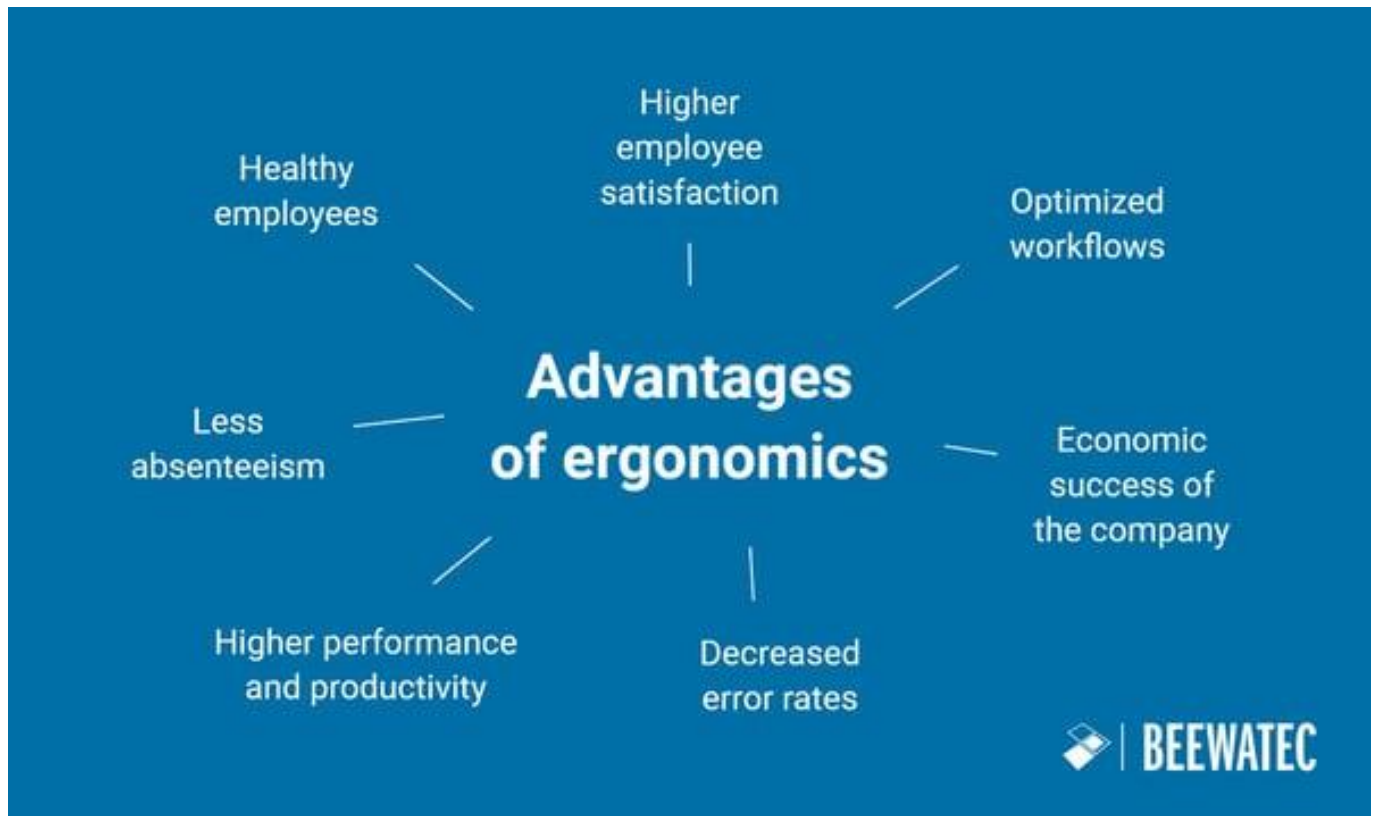
7 _____: By establishing a common set of tools to train your 8 _____, assess risk, plan improvements, measure progress, and design new work processes, you'll be able to scale ergonomics best practices throughout your organization.

Text 2. Advantages and disadvantages of ergonomics

Performance, health and safety on the one hand (= pro) contrast with costs and time expenditure on the other (= con).

Advantages of ergonomics

Ergonomic measures provide support in all areas of daily life. In industry, both employers and employees benefit from a variety of positive effects:



Optimised workflow is achieved through ergonomic provision of materials, work equipment and information. Additionally, there are such benefits as reduction of sick leave (especially when performing the same job over a long period of time), increased quality of work results, optimised use of available space.

Ergonomics overall helps us in minimizing our overall expenditure and enhancing the productivity level. Besides, it curtails the chances of accidents and unfavorable situations at workplaces. Besides, it also improves the quality of output because the workers are healthy and fit to work to their maximum capabilities. The employees are more engaged in their work without getting distracted. Most importantly ergonomics adds to the company's goodwill. When workers are satisfied with the working

conditions they spread a good word about the organization which is a very important factor to invite investments and more competent manpower.

Disadvantages of ergonomics

- Initial expenditure of time and costs for planning ergonomic workplace systems, processes and activities (= work organisation)
- Continuous expenditure of time and costs for the measurement and analysis of ergonomic criteria (continuous improvement process / CIP).

Exercise 1. Translate the following words:

Decreased error rate, optimized workflow, expenditure of time, absenteeism, to curtail the chances; несприятливі ситуації, робоча сила, ділова репутація компанії, покращити рівень продуктивності.

Exercise 2. Answer the following questions:

1. What are advantages of work ergonomics?
2. Why does it help to safeguard your health?
3. How is optimised workflow achieved?
4. How does ergonomics improve the quality of output?
5. What are disadvantages of ergonomics?

THE TENSE FORMS IN THE PASSIVE VOICE

ЧАСОВІ ФОРМИ АНГЛІЙСЬКОГО ДІЄСЛОВА В ПАСИВНОМУ СТАНІ

В англійській мові (як і в українській) дієслова вживаються в активному і пасивному станах. Якщо підметом речення є **суб'єкт дії**, то дієслово-присудок вживається в активному стані. Усі часові форми англійського дієслова, розглянуті вище, є формами активного стану. Якщо підметом речення є **об'єкт дії**, то дієслово-присудок вживається в пасивному стані. Отже, пасивний стан вживається, коли підмет є об'єктом дії і на нього скерована дія. Часове значення дієслова в пасивному стані за смисловим навантаженням однакове з формами в активному стані (тобто, наприклад, **Present Indefinite** в активному стані і в пасивному стані має однакове смислове-часове значення — *дія, що*

відбувається регулярно, щоденно в теперішньому часі), але за структурою (формою) в реченні вони будуть відрізнятися. Форма дієслова в пасивному стані є складною — вона складається з допоміжного дієслова **to be** у відповідних формах і часах та дієприкметника минулого часу (**Past Participle II**) основного дієслова.

Нижче подано формули видо-часових форм англійського дієслова в пасивному стані:

THE PRESENT INDEFINITE TENSE

am	
are	+ V ³
is	

THE PAST INDEFINITE TENSE

was	+ V ³
were	

THE FUTURE INDEFINITE TENSE

shall be	+ V ³
will be	

THE PRESENT PERFECT TENSE

have	+ been + V ³
Has	

THE PAST PERFECT TENSE

had been + V ³

THE FUTURE PERFECT TENSE

shall have	+ been + V ³
will have	

THE PRESENT CONTINUOUS TENSE

am

are + being + V ³ is

THE PAST CONTINUOUS TENSE

was were + being + V ³

THE EXERCISES

Ex. 1 TRANSLATE INTO UKRAINIAN:

1. Chairs are usually made of wood. 2. The article was translated with a dictionary. 3. The meeting will be organized in the big hall of the Institute. 4. Don't enter the classroom. A student is being asked there. 5. Has she just been asked by the teacher? What is her mark? 6. At the examination last year we were asked by two teachers. 7. Pupils are asked at every lesson. 8. English is spoken in many countries of the world. 9. This book was written by Daniel Defoe. 10. The room is cleaned by me on Fridays. 11. My little sister is taken to the circus every Sunday. 12. My friend was being asked by the teacher when I came in. 13. I am taught English by two teachers. 14. The letter has been just written. 15. The work had been done by 6 o'clock. 16. The trees will have been planted by us by summer. 17. The sonata was played by a famous pianist. 18. The tourists will be met by the guide at the platform. 19. I was being asked by the English teacher at 11 o'clock.

Ex. 2 CHANGE THE SENTENCES USING THE PASSIVE VOICE:

Model: I have read his letter.

— *His letter has been read by me.*

1. Our students are discussing an interesting subject. 2. Our specialists are building gigantic electric power stations. 3. They will finish their work in time. 4. She was writing a letter when I came in. 5. They had already translated the article when I gave them my dictionary. 6. Will they have planted the trees by the beginning of May? 7. She has just written the task. 8. He wrote a new detective story. 9. My sister washed the dishes. 10. I have broken my favourite cup.

Ex. 3 CHANGE THE SENTENCES USING THE ACTIVE VOICE:

Model: The exercise was written by him yesterday.

— *He wrote the exercise yesterday.*

1. The patient was recommended a severe diet by the doctor. 2. The floor will be swept by my sister. 3. I was taken by my parents to the sea last summer. 4. The book will be brought by her tomorrow. 5. This tasty cake has just been made by my mother. 6. This important work had been finished by us by the 1st of July. 7. The list of new words will have been completed by me by tomorrow.

Ex. 4 GIVE ANSWERS TO THESE QUESTIONS OR STATEMENTS ACCORDING TO THE MODEL:

Model: a) *Do people speak English in many countries?*

— *Yes, English is spoken in many countries.*

1. Do they clean the flat every Friday? 2. Do the pupils read many texts at the English lessons? 3. Did the girl buy a new book yesterday? 4. Did your classmates discuss the problem last week? 5. Will you water the flowers tomorrow? 6. Have you just finished your work? 7. Does the teacher ask us a lot of questions at the lesson? 8. Do you spend free time in the country-side?

Model: b) *They have told Ann about that.*

— *So, she's been told.*

1. They've invited the Browns to the birthday party. 2. We've shown the guests around the city. 3. They've discussed the problem. 4. She's written the letter. 5. My sister has cleaned the room.

Model: c) *Have they discussed the problem?*

— *No, it's still being discussed.*

1. Have you read the book? 2. Has she done the work? 3. Have you parents written this letter? 4. Have they sold all the books? 5. Have you translated the text?

Ex. 5 INSERT THE MISSING PART OF THE ANALYTICAL FORM OF THE VERB (PASSIVE OR ACTIVE):

1. An interesting article ... published in the next issue of the magazine. It ... published by the 1st of May. It ... not ... published yet. I ... written now. The author of the article ... working at it for two months. When ... his preceding article published? It ... not yet published by June. It... discussed when I came to the sitting of the chair. They ... discussing it for more than an hour before a certain resolution ... arrived at.

2. My room ... not ... papered since the new furniture ... bought. I think it must ... papered this spring. My neighbour's room ... papered now. The paper-hanger ... working for two days. He says the work ... finished soon. It ... finished by the next month. I shall ask my friend not to come to my place when my room ... papered.

3. Who ... this cushion... embroidered by? It ... embroidered by my sister last year. She ... embroidering in for more than two months before the work was finished. ... any other cushions embroidered in the same way? I don't think so, my sister is too busy now.

Ex.6 EXERCISE ON THE USE OF THE PASSIVE CONSTRUCTIONS WITH INTRANSITIVE VERBS FOLLOWED BY PREPOSITIONS. TRANSLATE INTO UKRAINIAN:

1. The outstanding violinist was much spoken about. 2. Our lecturer in literature is always attentively listened to. 3. Strict discipline is insisted upon in any kind of serious work. 4. He doesn't like to be interfered with. 5. This cellar has never been lived in. 6. Little children are always looked after. 7. Don't put on this old-fashioned coat. You will be laughed at. 8. His suggestions are never objected to. 10. The bed

was not slept in. 11. Has the doctor been called for? 12. I'm sure this event will be commented upon in newspapers.

Ex. 7 COMMENT ON THE USE OF THE PASSIVE VERB FORM. WRITE OUT THE INFINITIVE OF THE VERBS. TRANSLATE THE SENTENCES INTO UKRAINIAN:

1. We are welcomed by a very civil woman in a white apron. (Dickens)
2. He can have food in, too; but he is not allowed to smoke. (Galsworthy)
3. "Look, Max," she would have said, "look what we've been sent." (Du Maurier)
4. Who wants to be foretold the weather? (Jerome K. Jerome)
5. He said in English, "I'm so sorry I had to ask you to come." "I wasn't asked. I was ordered." (Greene)
6. ... they were marched off to the nursery. (Mansfield)
7. "... I'm not going to be talked to like this." (Bennett)
8. "... ask Peggotty if I didn't do very well when I wasn't interfered with!" (Dickens)
9. Their conference was put an end to by the anxious young lover himself. (Austen)
10. He worked from 8 a.m. to 8 p. m. every day and was delighted if he was given week-end work. (Walsh)
11. At this point a maid announced that supper was served and instantly Gilbert took his departure. (Dreiser)
12. I darted back into the morning-room again, just in time. I had not been seen. (Du Maurier)
13. I was sent in to get my tea. (Dickens)
14. Even when the lessons are done, the worst is yet to happen, in the shape of an appalling sum. (Dickens)
15. "That's very good of you," said Dinny, icily, "but the harm is done, Professor." (Galsworthy)
16. This observation must be limited exclusively to his daughter. (Dickens)
17. "Good gracious bless me, how my poor head is vexed and worried by that girl Jupe's so perseveringly asking, over and over again, about her tiresome litters!" (Dickens)
18. It is said that every life has its roses and thorns. There seemed, however, to have been a misadventure or mistake in Stephen's case, whereby somebody else had become possessed of his roses, and he had become possessed of the same somebody else's thorns in addition to his own. (Dickens)
19. He was usually called Old Stephen, ... (Dickens)
20. The lights in the great factories, which looked, when they were illuminated, like Fiary palaces, ... (Dickens)

ТРЕНУВАЛЬНІ ТЕСТИ

TESTS FOR SELF-CONTROL

1. ... brevity is ... soul of wit.
a) — / the
b) — / —
c) the / the
d) the / —
2. One hand washes ... other.
a) a
b) an
c) —
d) the
3. One cloud is enough to eclipse ... sun.
a) a
b) an
c) the
d) —
4. ... experience is ... best teacher.
a) — / the
b) The / the
c) The / —
d) An / the
5. There is no ... place like ... home.
a) a / a
b) — / —
c) the / the
d) a / the
6. Children, help ... to sweets and juice.
a) yourself
b) ourselves
c) yourselves
d) themselves
7. We are going boating with some friends of
a) them
b) our
c) mine
d) ours
8. Have you got any ... colours?
a) another
b) others
c) other
d) the other
9. They write articles for ... school newspaper.
a) their
b) theirs
c) they
d) themselves

10. Don't talk about them. Let's talk about something
a) an interesting
b) more interesting
c) the most interesting
d) interesting
11. I think dogs are ... than cats.
a) intelligent
b) more intelligent
c) the most intelligent
d) the intelligent
12. She has ... job of all.
a) a difficult
b) more difficult
c) a more difficult
d) the most difficult
13. Which is ... : five, fifteen or fifty?
a) a little
b) little
c) less
d) the least
14. This is ... problem she has ever had.
a) a great
b) a greater
c) the greatest
d) more great
15. My case is not very Yours is
a) heavy
b) heavier
c) the most heavy
d) more heavy
16. The weather was not very ... yesterday but it is ... today.
a) good
b) better
c) the best
d) more better
17. I ... my friend yet.
a) haven't seen
b) didn't see
c) don't see
d) will not see
18. He ... TV when the phone rang.
a) watches
b) has watched
c) was watching
d) watched
19. Mary is from Paris but ... in London for two years.
a) lives
c) has lived

b) is living

d) will be living

20. The train to Kyiv ... at 8:20 AM.

a) leaves

c) leave

b) is leaving

d) left

21. Tommy is tired; he ... football for hours.

a) played

c) had played

b) has been playing

d) will have been playing

22. While Kate was cooking dinner, Ann ... the house.

a) was cleaning

c) has cleaned

b) has cleaned

d) had been cleaning

23. He went to bed after the film

a) has ended

c) had ended

b) ended

d) ends

24. She has been eating a lot lately; I think she ... weight.

a) puts on

c) has put on

b) put on

d) is putting on

25. He usually ... by train.

a) has traveled

c) is travelling

b) travels

d) had traveled

26. He filled in his name, signed the contract and ... it to the secretary.

a) gave

c) had given

b) has given

d) was giving

27. He was soaked to the skin because he ... in the rain.

a) walked

c) had been walking

b) is waling

d) was walking

28. She took her raincoat as it

a) was raining

c) has been raining

b) is raining

d) had been raining

29. Her eyes are red because she ... onions.

- a) peeled
b) has been peeling
- c) has peeled
d) was peeling
30. He ... in this house for 5 months.
a) is living
b) was living
- c) has been living
d) lives
31. She took her raincoat as it
a) was raining
b) is raining
- c) has been raining
d) had been raining
32. She was ironing while her brother ... television.
a) has been watching
b) is watching
- c) had been watching
d) was watching
33. She ... the news when I saw her.
a) didn't hear
b) hasn't heard
- c) hadn't heard
d) will not hear
34. Simon ... as a waiter until he finds a better job.
a) is working
b) works
- c) worked
d) has worked
35. ... this new film yet?
a) Do you see
b) Have you seen
- c) Are you seeing
d) Did you see
36. Mike ... the flowers in the garden since eight this morning.
a) has watered
b) waters
- c) is watering
d) has been watering
37. She ... the best actress of the year.
a) will be chosen as
b) will chose
- c) will be being chosen as
d) is chosen
38. These plants ... three times a week.
a) you should water
b) are watered
- c) should be watered
d) can be watered

39. He ... at.

- a) is often laughed
- b) are often laughed
- c) has often been laughed
- d) is often laughing

40. You ... many questions.

- a) didn't be asked
- b) wasn't asked
- c) aren't be asked
- d) won't be asked

41. As he behaves badly, he

- a) was punished
- b) will be punished
- c) is punished
- d) has been punished

42. The logs ... too long for our fireplace.

- a) are cut
- b) is cut
- c) have to be cut
- d) have been cut

43. The book ... everywhere.

- a) must be looked for
- b) has been looked for
- c) is looked for
- d) is being looked for

44. She ... with the housework now.

- a) is being helped
- b) has been helped
- c) is helped
- d) won't be helped

45. The fence

- a) might have been painted
- b) has been painted
- c) had be painted
- d) have be painted

46. The papers ... by tomorrow afternoon.

- a) are received
- b) had been received
- c) will have been received
- d) have been received

47. Each month ... into weeks.

- a) are divided
- b) is being divided
- c) will be divided
- d) is divided

48. These lilac bushes

- a) should be trimmed
- b) is being trimmed
- c) had been trimmed
- d) was trimmed

49. The plain ... in London yesterday.

a) weren't delayed

b) hasn't been delayed

c) wasn't delayed

d) wasn't being delayed

50. The letter ... by the chief of police.

a) has to sign

b) has to signed

c) can to be signed

d) has to be signed

SUPPLEMENT I

СПИСОК НЕПРАВИЛЬНИХ ДІЄСЛІВ ЗА АЛФАВІТОМ

arise	arose	arisen	виникати, з'являтися
awake	awoke	awoke/awoked	прокидатися; будити, пробуджуватися
be	was, were	been	бути; бувати
bear	bore	borne/born	носити; переносити, родити, народжувати
beat	beat	beaten	бити
become	became	become	ставати; робитися; перетворюватися
begin	began	begun	починати(ся)
bet	bet/betted	bet/betted	битися об заклад
bind	bound	bound	зв'язувати
bite	bit	bitten	кусатися
bleed	bled	bled	кровоточити; проливати кров
blow	blew	blown	дути
break	broke	broken	ламати(ся); розбиватися
breed	bred	bred	породжувати; розводити
bring	brought	brought	приносити, проводити
broadcast	broadcast	broadcast(ed)	передавати по радіо
build	built	built	будувати, споруджувати
burn	burn/burned	burnt/burned	палити, спалювати
burst	burst	burst	розривати, вибухати
buy	bought	bought	купувати
cast	cast	cast	кидати
catch	caught	caught	ловити

choose	chose	chosen	вибирати; відбирати
come	came	come	приходити; приїжджати
cost	cost	cost	коштувати
cut	cut	cut	різати, розрізувати
dare	dared	dared	сміти, наважуватися
deal	dealt	dealt	мати справу; займатися
dig	dug	dug	копати, рити
do	did	done	робити, виконувати
draw	drew	drawn	тягти; креслити
dream	dreamed/ dreamt	dreamed/ dreamt	бачити сон, мріяти, уявляти
drink	drank	drunk	пити
drive	drove	driven	водити, вести, правити
dwell	dwelt	dwelt	жити, мешкати, перебувати
eat	ate	eaten	їсти
fall	fell	fallen	падати, опускати(ся)
feed	fed	fed	годувати(ся), харчувати(ся)
feel	felt	felt	почувати, відчувати
fight	fought	fought	битися, боротися
find	found	found	знаходити; виявляти
fly	flew	flown	літати
forbid	forbade/forbad	forbidden	забороняти
forecast	forecast/ forecasted	forecast/ forecasted	передбачати, завбачати
foresee	foresaw	foreseen	передбачати
forget	forgot	forgotten	забувати, забути
forgive	forgave	forgiven	прощати
freeze	froze	frozen	морозити, за- морозувати
get	got	got (US gotten)	діставати, одержувати; добиратися
give	gave	given	давати; віддавати
go	went	gone	іти; їхати; їздити
grow	grew	grown	рости; збільшуватися; вирощувати
hang	hung/hanged	hung/hanged	вішати, висіти
have	had	had	мати
hear	heard	heard	чути; слухати, вислуховувати
hide	hid	hidden/hid	ховати(ся)

hit	hit	hit	ударяти
hold	held	held	тримати, держати
hurt	hurt	hurt	завдавати болю; ушкодити; поранити
keep	kept	kept	тримати; зберігати
kneel	knelt	knelt	стояти навколішки; ставити навколішки
knit	knitted/knit	knitted/knit	в'язати; з'єднувати
know	knew	known	знати
lay	laid	laid	класти; накривати
lead	led	led	вести, приводити; керувати
lean	leant/leaned	leant/leaned	нахиляти(ся)
leap	leapt/leaped	leapt/leaped	стрибати
learn	learnt/learned	learnt/learned	вчити, вивчати, вчитися
leave	left	left	піти, поїхати, від'їжджати
lend	lent	lent	позичати
let	let	let	пускати; випускати; дозволяти; здавати внайм
lie	lay	lain	лежати; перебувати
light	lit/lighted	lit/lighted	запалювати, прикурити
lose	lost	lost	втрачати; програвати
make	made	made	робити, виробляти
mean	meant	meant	означати
meet	met	met	зустрічати(ся); знайомитися
mislead	misled	misled	вводити в оману
misspell	misspelt	misspelt	робити орфографічні помилки
misunderstand	misunderstood	misunderstood	неправильно розуміти
overcome	overcame	overcome	перемогати, подолати
overhear	overheard	overheard	підслуховувати
partake	partook	partaken	брати участь
pay	paid	paid	платити
prove	proved	proven/proved	доводити; виявлятися
put	put	put	(по)класти, (по)ставити
read	read	read	читати
rebuild	rebuilt	rebuilt	відбудовувати
retell	retold	retold	переказувати
rewrite	rewrote	rewritten	переписувати
rid	rid/ridded	rid/ridded	звільняти; позбавляти (чогось)

ride	rode	ridden	їхати верхи; їхати
ring	rang	rung	дзвеніти, дзвонити
rise	rose	risen	сходити; вставати; збільшуватися
run	ran	run	бігати; керувати, управляти
say	said	said	говорити, сказати, мовити
see	saw	seen	бачити, дивитися
seek	sought	sought	шукати, розшукувати
sell	sold	sold	продавати, торгувати
send	sent	sent	посилати
set	set	set	ставити; класти, розміщувати
shake	shook	shaken	трусити; струшувати, трястися
shed	shed	shed	проливати (кров, сльози)
shine	shone	shone	світити(ся), сяяти; блищати
shoot	shot	shot	стріляти; убити
show	showed	shown/showed	показувати(ся), демонструвати
shut	shut	shut	зачиняти(ся), закривати(ся)
sing	sang	sung	співати
sink	sank	sunk/sunken	тонути
sit	sat	sat	сидіти
sleep	slept	slept	спати
slide	slid	slid/slidden	ковзати(ся); посковзнутися
smell	smelt/smelled	smelt/smelled	відчувати запах; нюхати; пахнути
sow	sowed	sown/sowed	сіяти, засівати
speak	spoke	spoken	говорити, розмовляти
speed	sped/speeded	sped/speeded	поспішати, прискорювати
spell	spelt/spelled	spelt/spelled	читати (писати, вимовляти) слово по буквах
spend	spent	spent	витрачати; проводити
spill	spilt/spilled	spilt/spilled	розливати(ся), розсипати(ся)
spin	spun/span	spun	прясти, плести
split	split	split	розколювати(ся), розщеплювати(ся)
spoil	spoilt/spoiled	spoilt/spoiled	псувати(ся)
spread	spread	spread	поширювати(ся); простягатися
spring	sprang	sprung	стрибати
stand	stood	stood	стояти

steal	stole	stolen	красти
stick	stuck	stuck	триматися, додержуватися
sting	stung	stung	жалити, уражати
stride	strode	stridden/strid	широко ступати, крокувати
strike	struck	struck/stricken	бити, страйкувати
string	strung	strung	зав'язувати, натягувати
strive	strove	striven	старатися, намагатися
sunburn	sunburnt/ sunburned	sunburnt/ sunburned	загорати
sweep	swept	swept	підмітати, чистити
swim	swam	swum	плавати, пливти
swing	swung	swung	коливати(ся), хитати(ся)
take	took	taken	брати; взяти
teach	taught	taught	вчити, навчати
tear	tore	torn	рвати(ся), відривати(ся)
tell	told	told	розповідати; говорити; казати
think	thought	thought	думати, обмірковувати
throw	threw	thrown	кидати
undergo	underwent	undergone	знавати
understand	understood	understood	розуміти
undertake	undertook	undertaken	починати, братися
undo	undid	undone	розв'язувати; розстибати
upset	upset	upset	засмучувати
wake	woke/waked	woken/waked	прокидатися, будити
wear	wore	worn	носити (одяг)
weep	wept	wept	плакати
win	won	won	вигравати; перемагати
wind	wound/winded	wound/winded	крутити(ся); заводити (годинник)
withdraw	withdrew	withdrawn	відкликати, виводити
write	wrote	written	писати

SUPPLEMENT II

ЧИТАННЯ НАЙБІЛЬШ УЖИВАНИХ МАТЕМАТИЧНИХ ПОЗНАЧЕНЬ

$a \square b$ **a** is much greater than **b**

$a \square b$ **a** is much less than **b**

$a \square b$ **a** is approximately equal to **b**

a_b **a** sub **b**; **a** subscript **b**

$a + b$	a plus b
$a - b$	a minus b
$a * b$	a times b; a multiplied by b
$a : b$	a divided by b
$\frac{a}{b}$	a over b
$\frac{ab}{cd}$	a times b over c times d
$[a]$	a in brackets
(a)	a in parentheses
dx	differential of x
\int	Integral
$\int \int$	double integral
10^2	ten to the second [power]; ten squared
10^{-1}	ten to the minus first [power]
10^3	ten to the third [power]; ten cubed
$\left(\frac{x^2}{y^3} \right)^m$	x squared divided by y cubed in parentheses to the mth [power]
\sqrt{a}	square root of a
$\sqrt[3]{a}$	third (cube) root of a
$\ln x$	natural logarithm of x
$\log x$	[common] logarithm of x
$\log^2_{10} = 0,30103$	logarithm of two to the base ten is nought point three, nought, one, nought, three

SUPPLEMENT III

СПИСОК СКОРОЧЕНЬ

Скорочення	Повне позначення	Переклад
AD	anno Domini, Lat.	нашої ери
a.m.	ante meridiem, Lat.	до полудня

atm	atmosphere	атмосфера
B.C.	before Crist	до нашої ери
b.p.	boiling point	точка кипіння
C	centigrade	стоградусний, за шкалою Цельсія
c.c.	cubic centimetre	кубічний сантиметр
cf.	confer, Lat.	порівняй
e.g.	exempli gratia, Lat., for example	наприклад
etc.	et cetera, Lat.	і так далі, тощо
F	Fahrenheit	за Фаренгейтом
fig.	figure	малюнок, креслення
ft	foot	фут (30,5 см)
hp	horse power	кінська сила
hr.	hour	година
GMT	Greenwich Mean Time	середній час за Гринвічем
i.e.	id est, Lat., that is	тобто
in.	inch	дюйм (2,54 см)
lb.	libra, Lat., pound	фунт (453,6 гр)
mi	mile	миля (1609 м)
m.p.	melting point	точка плавління
oz.	ounce	унція
p.c.,pet.	per cent	процент
p.m.	per mile	за милю
p.m.	post meridiem	після полудня
psi	pounds per square inch	фунтів на квадратний дюйм
sec.	second	секунда
sp.gr.	specific gravity	питома вага
		квадратний метр

sq.m.	square metre	тон за годину
t/hr	tons per hour	саме
viz.	videlicet, Lat.	ярд (91,44 см)
yd	yard	

SUPPLEMENT IV

ІНОЗЕМНІ ЗАПОЗИЧЕННЯ

Деякі іменники, запозичені з латинської та грецької мов, зберігають свої форми множини.

is —————> **es**

analysis	analyses	аналіз	аналізи
axis	axes	вісь	вісі
basis	bases	основа	основи
crisis	crises	криза	кризи
phasis	phases	фаза	фази

us —————> **a, i**

locus	loci	місцеположення	місцеположення
focus	foci	фокус, центр	фокуси, центри
radius	radii	радіус	радіуси
nucleus	nuclei	ядро	ядра
stimulus	stimuli	вплив, стимул	впливи, стимули
genus	genera	рід, сорт	роди, сорти

on, um —————> a

phenomenon	phenomena	явище	явища
criterion	criteria	критерій	критерії
datum	data	дана величина	дані величини
stratum	strata	шар	шари
maximum	maxima	максимум	максимуми
minimum	minima	мінімум	мінімуми
equilibrium	equilibria	рівновага	рівноваги

a —————> ae

formula	formulae	формула	формули
nebula	nebulae	туманність	туманності
corona	coronae	корона	корони

Іменники, які мають одну форму однини та множини

species	species	вид	види
series	series	серія, ряд	серії, ряди
facies	facies	фація	фації
means	means	засіб, спосіб	засоби, способи

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**НАВЧАЛЬНИЙ ПОСІБНИК
з англійської мови
для студентів ІТ спеціальностей**

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