Міністерство освіти і науки України
Національний університет «Чернігівська політехніка»

ENGLISH FOR INFORMATION TECHNOLOGY

МЕТОДИЧНІ ВКАЗІВКИ
до практичних занять та самостійної роботи
здобувачів вищої освіти освітнього ступеня «бакалавр»
спеціальності 121 «Інженерія програмного забезпечення»
спеціальності 123 «Комп'ютерна інженерія»
спеціальності 125 «Кібербезпека»

Чернігів НУ "Чернігівська Політехніка" 2020

Укладачі:	КОРМІЛЬЦИНА СВІТЛАНА ЮРІЇВНА, викладач кафедри іноземних мов професійного спрямування
	ЛАШУК НАТАЛІЯ МИКОЛАЇВНА, кандидат педагогічних наук, викладач кафедри іноземних мов професійного спрямування
Відповідальна за випуск:	ЛИТВИН СВІТЛАНА ВОЛОДИМИРІВНА, завідувач кафедри іноземних мов професійного спрямування, кандидат педагогічних наук, доцент
Рецензент:	ГАГІНА НАТАЛІЯ ВІКТОРІВНА, кандидат педагогічних наук, доцент кафедри іноземних мов професійного спрямування, доцент

ЗМІСТ

ПЕРЕДМОВА

Методичні вказівки з англійської мови призначені для проведення практичних занять та самостійної роботи зі здобувачами вищої освіти освітнього ступеня «бакалавр» спеціальності 121 «Інженерія програмного забезпечення», 123 «Комп'ютерна інженерія» 125 «Кібербезпека», які продовжують вивчення англійської мови на базі знань, отриманих в середній школі та укладені відповідно до вимог Програми викладання англійської мови професійного спілкування (Київ, 2005).

Головна мета методичних вказівок – розвиток вмінь розуміння й аналізу оригінальних текстів, розвиток лексичних навичок, удосконалення вмінь вести бесіду, брати участь у дискусіях англійською мовою, формувати соціально-комунікативну позицію фахівця в галузі інформаційних технологій.

Методичні вказівки включають 11 тематичних розділів, які містять професійно-орієнтовані тексти для читання, дотекстові завдання та завдання на перевірку прочитаного, лексичні та граматичні вправи та завдання на розвиток вмінь усного мовлення та письма.

Підібраний текстовий матеріал є органічним компонентом професійної підготовки студентів. Фахові тексти та система вправ допоможуть майбутнім спеціалістам оволодіти термінологічною лексикою, підготують їх до спілкування іноземною мовою у професійному середовищі.

UNIT 1
LIVING WITH COMPUTERS

GET READY

1. Comment on the following brainy quotes. Express your views on them.

Useful language: I think…, in my opinion…, in my point of view…, I agree / disagree with the first statement, because…

> I think it's fair to say that personal computers have become the most empowering tool we've ever created. They're tools of communication, they're tools of creativity, and they can be shaped by their user.
>
> Bill Gates

> Computers are magnificent tools for the realization of our dreams, but no machine can replace the human spirit, compassion, love and understanding.
> Louis V. Gerstner, Jr

> Your computer is a backup of your soul, a multi-layered, menu- driven representation of who you are, who you care about.
> Alan Turing

VOCABULARY

1. Match the words to their definitions

1) application	**a)** the ability of a computer to do several various tasks at the same time
2) access	**b)** software programme designed for a specific need or purpose
3) data	**c)** to complete mathematical and logical operations on data according to programmed instructions in order to obtain the required information
4) high-quality graphic	**d)** to keep and save information in a digital device
5) multitasking	**e)** to copy or move information into a computer's memory, especially from the Internet or a larger computer
6) hishing attacks	**f)** to judge the amount of something by adding, taking away, multiplying, or dividing numbers
7) software facilities	**g)** a piece of computer's equipment or computer programmes with features that allow users to do something
8) to store	**h)** to spend time visiting a lot of websites
9) to process	**i)** hackers' attacks used to break computer users' passwords or bank account numbers to get money or goods

10) to calculate	**j)** to make something more modern adding it the most recent news
11) to update	**k)** the right or opportunity to use or look at sth.
12) to download	**l)** to make changes to a text or film to prepare it for printing or showing
13) to edit	**m)** information in an electronic form that can be stored and used by a computer
14) to surf	**n)** well-made pictures or images that are designed to represent objects or facts, especially in a computer programme

2. Match the synonyms given below.

1. Accurate
2. Available
3. To communicate
4. Essential
5. To provide
6. Versatile
7. To perform
8. To facilitate
9. Simultaneously
10. To search for

a. To ease
b. Precise
c. To look for
d. To interact
e. Accessible
f. At the same time
g. Fundamental
h. To give
i. To accomplish
j. Multipurpose

READING

1. Read the introductory part of the article and answer the following questions.

1. Have computers made people's life easier?
2. Are processing characteristics considered to be the main ones? What are they?
3. What other PC characteristics are mentioned in the text?
4. Is storage capacity the most relevant feature of modern computers?
5. How do computers assist you?

LIVING WITH COMPUTERS

We use computers on daily basis, at school, at home, in the office. Computers have changed the way we work, making it easier. It is im- portant for everyone to have at least basic knowledge of computers. Thanks to the computer, we can go to the library or shop without leaving our house. Generally, they provide people with education, entertainment, business and store valuable data for as long as needed.

The following processing characteristics of a PC, which are referred to as The 3 C's, are considered to be the main ones, because the computer performs all processing by calculating, comparing and copying the data stored in its random access memory (RAM).

First of all, the PC is fast. It can perform billions of calculations and geometric measurements per second. It processes information at ex- tremely high rates matching one set of data with another one by searching, analyzing, copying, editing, displaying and deleting them for count- less purposes. Secondly, the PC is accurate. It performs various operations with precise results and no errors. Thirdly, PCs are versatile. They are used in various fields of industry, business and leisure. They can communicate to share files of any sort with any PC at any destination. Storage capacity is another relevant feature of a computer. The storage capacity of a com- puter is measured in Mega Bytes, Giga Bytes and Tera Bytes. Multitask- ing is also an important characteristic for PC users. It enables them to accomplish several tasks simultaneously such as downloading files, preparing office documents and participating in video conferences online – all at the same time!

2. Read the second part of the text and match paragraphs 1-9 to pictures A-I (Fig. 1).

Fig. 1. Computer users

Here are several interesting first hand computer users' opinions on the value PCs have brought into their lives.

1. My name is Melanie. Computers have made my life absolutely in- credible. I am from Canada and I managed to find my partner in Facebook, who lives in Australia. We have been together and happy for 2 years now.

2. I am Katie. Computers have helped my sister Linsey and me to look differently at our job. We are professional photographers and designers and we have never dreamt of all the software facilities available for image editing such as enhancing photos, creating high-quality graphics, and de- signing websites.

3. I am Mr. Clarks, a writer. And for me, it is so much easier with com- puters now to make all sorts of editing like spelling mistakes, cutting and pasting instantly rather than using the typewriter for moving paragraphs and correcting mistakes, though the typewriter will never get a virus or need any updates.

4. I am Mrs. Silvia Pears. I am a mother of a 6-year-old boy. My hus- band works hard and so do I. We hardly have any free time to spend with our son. So Sony play station, a smart phone and computer in this kind of situation become essential for our son to watch cartoons and play games. I see it is not the healthiest solution but do we have a better choice?

5. We are teaching at Cambridge University. Computer technology has a deep impact on education by facilitating information representation, quick communication between teachers and students and organizing dis- tant learning courses. Students from different countries have access to all the necessary academic materials, get the core knowledge, interact with each other in online forums, download the tests from students' resources, complete them and send the results back for the tutor to check.

6. I am Mr. Flunt, a programmer. Most users, in my view, get upset about the hackers` attacks that destroy their operating systems. In addition to this, it is getting more and more complicated to protect Internet users from unreliable web sites, phishing attacks and violence. I am not sure if computers have improved our lives.

7. We are Mr. and Mrs. Green. With computers and particularly Skype, all the family have an opportunity for communicating with our daughter who's now studying and living away from home in Oxford.

8. I am Mrs. Pot. In my opinion, people have become very much dependent on personal computers and digital mobile devices on the whole. They spend most of their free time offline or online clicking different applications, surfing the Internet and chatting in social networks. They prefer to have hundreds of friends online, get likes for their selfies instead of live communication.

9. I'm Mr. Fleet. Computers have changed my life completely. I work as a chief manager of the Chinese International Trade Company. Thanks to these intellectual devices, I can easily co-work and control my foreign partners at any destination.

3. Mark the sentences as true or false. Correct those which are not right.

1. All computer users are of positive opinion on computers.
2. Melanie has a successful experience of finding a partner in Instagram.
3. Designers and photographers have got wider possibilities with mod- ern computers.
4. The writer thinks of the typewriter as a thing of the past.
5. Mrs. Silvia Pears regards multimedia gadgets as very useful for her son.
6. Teachers appreciate the role of computers in teaching.
7. The Internet is the safest global network.
8. Computers enabled people living in different countries to communicate easily.
9. Computers have made people rather insulated.
10. According to Mr. Fleet it's very convenient for the business partners to cooperate and coordinate the work of each other.

4. Which…

1. computer users speak only in favour of computers?
2. computer users are of a negative opinion about computers?
3. computer users see the computer as a beneficial and harmful device?
4. opinion do you find the most disputing?
5. opinion do you consider the most valuable?
6. opinions do you share?
7. opinions do not you support?

5. Check the meaning of the word combinations given in the text in bold, put them down in your vocabulary list and learn them, paying attention to the prepositions they go with. Then complete the sentences with prepositions where necessary.

1. Wi-Fi **provides users** ___ the **access** ___ the Internet.
2. Internet users have an **opportunity** _ participating online conferences.
3. Skype is one of the cutting-edge devices that eliminates distances between people and allows them **to communicate** ___ one another **any destination**.
4. Computers have made a controversial **impact** ___ education.
5. Yesterday, we found a good instructive video about the use of computers **surfing** ___ **the Internet** and **downloaded** it YouTube.
6. For getting a visa you can easily **complete** ___ **an online application form**.
7. Today, the Internet is accessible ___ **any time** and you can surf ___ **a high rate**.
8. It is getting more complicated **to protect** Internet users ___ unreliable web sites.
9. Young people are very much **dependent** ___ mobile devices.
10. In distant learning, students have a chance to **interact** ___ one another in video conferences and forums.

6. Help the teacher to complete his lecture with the necessary words.

> mark, cut, edit, copy, save, paste, delete

Today, I'm going to tell you about a few basic computer commands, which you can use for dif- ferent applications. The most typical is when users want to___some text or graphics, I mean to make some changes in those, you should___a piece of information you would like to change for a start. If you want to get rid of it you can either___ it or just___it. If you want to add the same piece of text or image to another file, you should click such commands as ___ and then ___ to a new file. Then if you are happy with the redactions you have made not to lose them you need to ___ the file under some name. Thank you for your attention! If you have further questions I will be glad to answer them all!

GRAMMAR FOCUS
MULTIFUNCTIONAL VERBS

BE

Am / Is / Are	Present tenses
Was / Were	Past tenses
Will be	Future tenses

➢ *Notional* verb with lexical meanings of **existence** and **location,** whereas in Ukrainian the verb **be** is omitted but still implied.
    *Storage capacity **is** another relevant feature of a computer.*
    *All my important data **are** on my memory stick.*
    *There **were not** many useful references on my portable hard drive.*
➢ *Auxiliary verb* used as a grammar form with no lexical meaning.
    *Their computer **is** usually fixed by an IT technician.*
    *I **was** surfing the Internet at 7 yesterday.*
    *They **will be** communicating in Skype tomorrow.*
    *This book has **been** finished recently.*
➢ *Modal verb* **be to** similar in meaning to the modal verb **must**.
    *I **am to** attend classes regularly.*
    *The train **was to** arrive at platform two on time.*

1. Translate the sentences into Ukrainian paying attention to the func tions of the verb *to be.*

1. Designing web sites is of great interest to me.
2. We are sharing innovations between countries due to computers and the Internet.
3. The storage capacity of a computer is measured in Mega Bytes, Giga Bytes and Tera Bytes.
4. He is a programmer to the core!
5. Our group isto finishmakingthe newprogramme by the end of next week.
6. David is very good at computers.

2. Complete the sentences with the verb *to be* **in the correct form.**

1. It _ getting more and more complicated to protect Internet users from unreliable web sites, fraud and violence.
2. _ he an engineer?

3. _ you to learn the Pascal programming language at theuniversity?
4. PCs accurate and versatile.
5. Mr. Jones _ on a business trip last week.
6. Computers ___rarity and curiosity several decades ago.
7. It's a pity! I will not come to the party tonight. I ___ in my office working over the project.
8. What you doing? I ___ searching the Internet for sites on digital cameras.
9. ___ it possible to open Microsoft Excel files in Word?

DO

Do / Does	Present tenses
Did	Past tenses
Will do	Future tenses

➢ *Notional verb* with a meaning of performing an **action**.
> *He is **doing** his research work using the most valuable data.*
> *I **did** the tests online.*
> *I have just **done** my piece of work on the computer.*

➢ *Auxiliary verb* used as a grammar form with no lexical meaning.
> ***Does** your computer perform multitasking?*
> ***Did** they download media files from VK?*

➢ ***In set expressions*** such as to do well, to do one`s best, in which the verb **Do** can lose its original meaning and get a different one.
> *I was **doing** my best at the practical classes in engineering graphics and **did** well at the exam.*

3. Translate the sentences into Ukrainian. Pay attention to the functions of the verb *to do*.

1. What did you do at the programming basics class yesterday?
2. Anna did not do well in chemistry last term.
3. Sasha will do his lab work in computer science himself.
4. We did engineering graphics very well.
5. He does not do a course of Spanish at the university.
6. Are they doing their job carefully?

4. Fill in the gaps with the proper form of the verb *to do*.

1. ___ engineering students their best in programming?
2. Technical students are ___ a lot of calculations.
3. I will not____the drawing in time.
4. All the students have___ well at the English exam.
5. I ___ not __ the test on programming languages last class.
6. ___you download the necessary software for Windows 10 yesterday?
7. What ___ you do? I'm a website developer.
8. I ___ not use that program very much so I deleted it from my PC.

HAVE

Have / Has	Present tenses
Had	Past tenses
Will have	Future tenses

> *Notional verb* with a lexical meaning of **possessing** an item.
>> *Do we **have** a better choice?*
>> *All the family **had** an opportunity to communicate with their daughter in Skype.*
>> *They **will have** hundreds of friends online.*
> *Auxiliary verb* used as a grammar form with no lexical meaning.
>> *Computers **have** changed my life.*
>> *They **had** completed the task by 5 p.m. yesterday.*
>> *We **have** been talking in Skype for two hours!*
> *Modal verb* **have to** similar in meaning to the modal verb **must**.
>> *Although Pavel does not want to participate in the coming online con ference he **has to**.*
>> *I **had to** copy all the data to the memory stick.*
>> *We **will have to** install a good anti-virus programme.*
> *In set expressions* such as to have difficulty in, to have fun, to have lunch, to have coffee, to have a cold, in which the verb **have** can lose its original meaning and get a different one.
>> *I used to **have** difficulty in transferring data to my laptop.*
>> *Victoria was **having** coffee on the move.*
>> *We **had** so much fun at the English class yesterday!*

5. Translate the sentences into Ukrainian. Pay attention to the func tions of the verb *to have*.

1. This programmer has access to all the Internet resources.
2. The computer has become the lifeline of modern generation.
3. I have an opportunity for communicating with my colleagues at work in Skype.
4. I don't have to back up files every day – that's automatic.
5. Computers have helped me and my sister Linsey to look differently at our job.
6. I am having much fun playing 'The World of Tanks'.

6. Complete the sentences with the verb *to have*. Put it into the proper form.

1. Emily ___ one hundred and twenty-two friends in Facebook.
2. Computers ____ more advantages than disadvantages.
3. I ___ done the tests on programming offline.
4. We are ___ coffee now.
5. Misha ___ not ___ CorelDraw installed on his PC.
6. He ___ benefitted professionally using different Microsoft Office applications.
7. James ___ to update all the Android applications on his smartphone.
8. The technicians ___ set up the network by 3 p.m. yesterday.

7. Choose one of the verbs in brackets. Put them into the necessary form to complete the following sentences.

1. A lot of humans (be, have, do) dependent on technology today, which will (be, have, do) bad to them.
2. I (be, have, do) had my iPad for years now and I (be, have, do) very happy with it.
3. Because I (be, have, do) not have the chance to speak to my boss yesterday I (be, have, do) to text her in Viber.
4. The 21st century (be, have, do) the age of cutting-edge technologies.
5. They (do, be, have) doing research work on the latest applications for mobile devices.
6. All books can (be, do, have) read online.
7. We (be, have, do) not see any downsides in using personal comput ers at all.
8. They (be, have, do) surfing the Internet all day yesterday.
9. Every day Linda (be, do, have) a lot of exercise to keep fit.
10. Safari browser online tutorial (be, do, have) provided the user with help and support in using it.

8. Translate the following sentences into English using new vocabulary.

1. Сучасні комп'ютери універсальні, компактні та точні.
2. Комп'ютери обробляють інформацію з дуже високою швидкістю. Вони роблять мільйони точних арифметичних розрахунків та геометричних вимірювань за секунду.
3. Якщо обсяг оперативної пам'яті комп'ютера невеликий, користувач ПК змушений зберігати дані на флеш-накопичувачі.
4. Багатозадачність - це здатність комп'ютерів виконувати кілька операцій одночасно.
5. Комп'ютери дозволяють користувачам вийти в Інтернет та переміщатися по веб сторінкам з високою швидкістю.
6. Необхідна інформація та оновлення доступні для скачування через будь-який Інтернет-браузер.
7. Інтернет додаток дозволяє користувачам спілкуватися один з одним по Скайпу, брати участь в онлайн конференціях та взаємодіяти на форумах.
8. Необхідно встановлювати на комп'ютер якісну антивірусну програму, щоб убезпечити особисті дані від атак хакерів.
9. Основні програми Майкрософт Офіс дозволяють вам набирати текст, виділяти його, копіювати, вирізати, видаляти, редагувати та зберігати.
10. Сучасні комп'ютерні технології надають суперечливий вплив на систему освіти. З одного боку, вони полегшують репрезентацію інформації, так як студенти мають вільний доступ до навчальних матеріалів і можуть робити контрольні роботи в он-лайн режимі. З іншого боку, комп'ютери негативно впливають на навчальну діяльність студентів, оскільки вони використовують їх в основному, не для отримання основних знань, а для розваги.
11. Зараз програмні засоби дозволяють користувачам ПК покращувати якість фотографій, створювати високоякісну графіку та редагувати веб сайти.
12. Сьогодні люди дуже залежні від мобільних пристроїв.

SPEAKING

1. Work in pairs. Make a list of the benefits computers have brought into your life. Compare it with those of your groupmates.

2. Work in small groups. How do you think these professions might use computers? Share your opinion with the class.

A bank manager, an architect, a secretary, a salesperson, a doctor.

3. Study computer users' opinions on its value on the forum using the following links. Try to sort out negative reviews from positiveones.

1. http://www.indiabix.com/group-discussion/is-dependence-on- computers-a-good-thing/
2. http://www.debate.org/opinions/are-we-too-dependent-on-computers
3. http://www.examjoin.com/group-discussion/is-dependence-on- computers-a-good-thing/

WRITING

1. Make a short summary of the text "Living with Computers".

HOW TO WRITE A SUMMARY

A summary is a brief statement or account of the main points of a piece of writing. A summary is not a rewrite of the original text and does not have to be long. Your purpose in writing the summary is to give the basic ideas of the original reading. What was it about and what did the author want to communicate?

1. Identify the type of work (text, article), title, author, and main point. *In the text (article) "Living with Computers" the author presents (shows, describes …) his opinion on the hot topic of living in a technological so- ciety. The text "Living with Computers" deals with the problem of … (dis- cusses some problems relating to …, provides information on …).*

2. Write in the present tense. *At the beginning of the text / article the author characterizes… (comments on …, explains …, analyses …). Atten- tion is drawn to the fact that… . It should be noted that … .*

3. Don't forget to include linking words so your reader can easily fol- low your thoughts. *Next / Further / Then it is reported / shown that … .*

4. Don't copy the article. Instead, paraphrase. *Besides the author ex- plains that …, gives a detailed analyses of … (the description of …). Fi- nally the author comes to the conclusion that … . In conclusion … . At the end of the text / article the author describes …, emphasizes that …, points out that.., summarizes that … .*

5. Don't put your own opinions, ideas, or interpretations into the summary. Your summary should have between 100 and 120 words.

GET READY

1. Answer the questions.

1. Are you happy with your PC? Why?
2. Do you think a desktop computer is a thing of the past?

2. Match the parts of the computer system to the pictures A-J (Fig. 1).

scanner, memory stick, keyboard, speakers, web camera, printer, monitor, system unit, mouse, portable hard drive

Fig. 1. The parts of the computer system

VOCABULARY

1. Study the information, look up the words in bold in the dictionary and put them down in your vocabulary list.

A computer is a **general-purpose machine** that **accepts**, processes, stores and outputs information. A typical computer consists of **hardware** and **software**. Any physical part of a computer system that you can see or touch is hardware. Software is a set of instructions that tells the hardware what to do. There are three basic hardware sections: the **CPU**, main memory and **peripherals**. The **RAM** (random access memory) and **ROM** (read only memory) make up the main memory. Peripherals are classified into three types, such as **input**, **output** and **storage devices**.

An input device is any hardware that sends data to a com- puter, allowing you to interact with it. The most commonly used input devices are the keyboard and the mouse. An output device is any peripheral that receives data from a computer, usually for display, or representation. Computer monitor is a good example of an output device. A **digital** storage device is any hardware capable of keeping information either temporarily or **permanently** on your PC or **memory stick**.

2. Split the computer parts given in the picture above into three groups: Input, Output and Storage Devices. Think of other examples of input, output and storage devices.

3. Match inner assembly parts of personal computer 1-7 to the pictures A-G (Fig. 2).

1. Motherboard.
2. Fan.
3. Random Access Memory.
4. Video Card (Graphics card).
5. Hard Drive.
6. Disk Drive.
7. Network Card.

Fig. 2. PC hardware

4. Complete the definitions.

Boot time *is how long your PC is taking to ...*

Resume time *is how long your PC is taking to ...*

Application open time *is how long your PC ...*

5. Match the words and word combinations to their definitions.

1) indispensable	**a)** to move a text or other information on a computer screen to see a different part of it
2) portable	**b)** to pull data from one place to another on the screen by manipulating a mouse with its button held down
3) enhanced	**c)** manner or quality of functioning (how well a computer or another machine works)
4) shortcut menu	**d)** to be extremely useful and absolutely necessary
5) resume time	**e)** to fulfill, satisfy, or achieve one's requirements
6) boot time	**f)** the heart, or central part, of something (kernel)
7) core	**g)** the number of horizontal and vertical pixels on a display screen
8) to drag	**h)** the maximum number of bits, bytes that can be saved in a memory system of an electronic device
9) to scroll	**i)** a group of parts that are connected and form one unit
10) performance	**j)** the time it takes for a device to be ready to operate after the power has been turned on
11) to meet the needs	**k)** something light and small enough to be easily carried, moved or possible to take with you

12) assembly parts	**l)** improved quality, amount, or strength of something
13) screen resolution	**m)** the time it takes for a device to begin an action again or continue it after a pause or interruption
14) technical specifications	**n)** a detailed description of technical requirements of a device
14) storage capacity	**o)** a quick contextual menu in the form of a list of the most commonly used options related to an object, which appears on the screen when you click the right mouse button on this object

6. Paraphrase the following sentences. Make use of the words from your topical vocabulary instead of the words given in italics.

1. Laptops are *essential* part of nearly all people's life. So you can hardly imagine a person who can do without them.
2. Mobile devices today are compact and *movable*.
3. *Upgraded* software and functionality are strong points of modern computers.
4. It is rather difficult to find high quality mobile devices with long- run *productiveness*.
5. One of the most important *technical parameters* of a mobile device is a long-life battery.
6. A computer's long *load time* and *attachment open time* tell a user about some hardware and software problems.
7. *Space for saving files* is usually insufficient for most computer users.
8. The latest computers completely *correspond to* users' needs.
9. According to the manual, you need to press the left button of the touchpad and *move* the cursor *from top to the bottom* to look through the web page. If you want to call for *contextual menu*, select an item and click the right touchpad button. You can also copy a file by *pulling* it *over* to the new location point.

READING

Before reading the article answer the following questions (Fig. 3).

1. What do you think about these smart mobile devices brands?
2. Which of them do you prefer? Why?
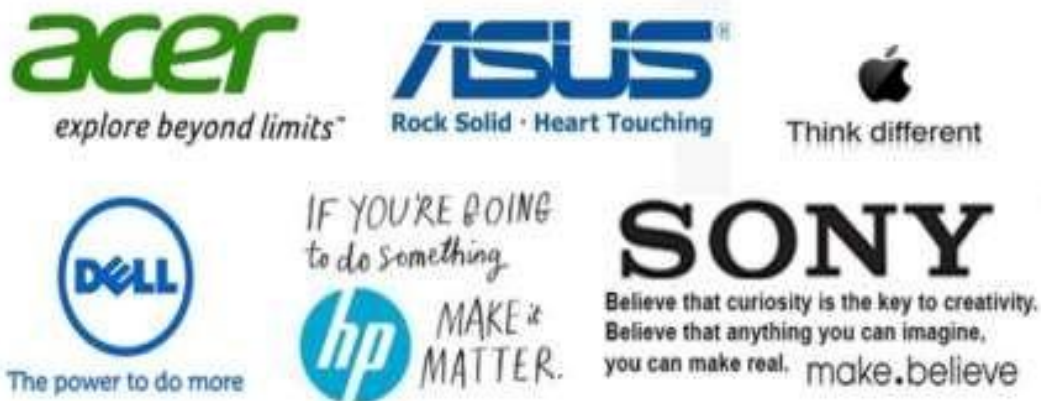   *Useful language: I choose Sony, because it's a time-tested brand and prestigious….*

Fig. 3. Electronic devices brands

1. Read the article and answer the questions.

1. What role does a laptop play in modern people's life?
2. What does a typical laptop consist of?
3. What technical specifications are considered to be the latest?

A TYPICAL COMPUTER

Computers have become an indispensable part of people's life.

Because of people's mobility today, laptops have integrated into the life of modern people and to a certain extent replaced desktop computers. A current laptop is ergonomic. It consists of the monitor that displays the information on the screen, the portable keyboard with enhanced functionality that helps to input the necessary data and specify a particular set of commands for the built-in CPU (Central Processing Unit) to process and then direct to a special software programme to complete, the touchpad, which is essentially a laptop's built-in mouse, similar in its functionality to a traditional mouse attached to a desktop computer.

With the touchpad, placed on the front panel of the laptop, you perform clicking actions to open, select items on the screen and to drag and scroll by using the left button. While clicking on the right button opens a shortcut menu from which you can choose commands. Manufacturers nowadays add protective anti-shock covering and waterproof membrane to the as- sembly parts of the laptop such as the microchips and the motherboard − a thin plate placed beneath that holds the CPU, memory, connectors for the hard and optical drive keyboard together. The charge adapter is a specialized power cable designed to recharge a PC.

It is rather challenging to single out the latest technical specifications of a PC, because they are continually changing meeting the needs of demanding users. The dual-core, quad-core and octo-core processor, usually AMD or Intel series, is available and responsible for running the operating system and every application you use efficiently.

Next to the CPU there is Cache and RAM, or volatile, temporary memory, where things you are working on are interpreted by the CPU, and when a user turns off a computer both Cache and RAM are cleared out. The standard RAM varies from 8 to 32GB. ROM in its turn is a permanent, non-volatile memory, and the instructions a computer executes are stored both in on and off modes.

Regarding the storage capacity of the Solid State Drives (SSDs) it ranges from 500 GB to 1.5 terabit. These drives (called hard drives) are used for permanent files saving and improve performance of a PC. You will enjoy faster boot time, resume time and application open time.

Mainstream LCD monitors vary in size usually from 15.6 to 17.3 inches with a sharp full HD screen resolution. Most laptops are available with a choice between integrated graphics or a discrete GPU (Graphics Processing Unit). Discrete GPU runs 3D games and, therefore, are perfect choice for gamers. A powerful long-life battery is employed to meet all the above mentioned specifications and users' preferences .

2. Match the words below to make word combinations.

portable, boot, resume, application, charge, shortcut, to complete, to replace, indispensable, technical, storage, to display, enhanced, solid state, capacitive, anti-shock, waterproof sharp full HD, built-in, to meet, to improve, demanding , to input, octo-core, challenging, assembly, operating, output, memory	adapter, menu, specifications, stick, device, capacity, desktop computers, functionality, drive, battery, covering, time, membrane, screen resolution, time, processor, data, the needs, performance, parts, users, processor, tasks, system, part, hard drive, open time, commands

3.Read the article again and complete the table.

Computer part (inner and outer)	Function
1. *Monitor*	
2.	

Find sleep technical words from your active vocabulary. The words go forwards or backwards, up or down, across and across- down. The total number of words is 20.

I	P	E	R	I	P	H	E	R	A	L	S	P	Y	A
M	S	O	F	T	W	B	O	S	C	R	E	E	N	P
O	L	F	A	N	A	O	S	H	O	R	T	C	U	P
T	A	K	K	X	R	O	D	E	V	I	C	E	T	L
H	P	T	O	P	E	T	P	E	R	F	O	R	M	I
E	P	R	O	X	M	T	K	E	Y	B	O	M	E	C
R	Q	S	C	M	O	I	C	O	P	Y	A	A	N	A
B	P	C	E	O	N	M	D	A	T	A	R	N	U	T
O	A	R	S	U	I	E	C	O	R	E	D	C	E	I
A	S	O	S	S	T	T	O	U	C	H	P	A	D	O
R	T	L	O	E	O	S	P	E	A	K	E	R	S	N
D	E	L	R	M	R	R	E	S	U	M	E	T	I	M
O	C	H	A	R	G	E	A	D	A	P	T	E	R	E
H	A	R	D	W	A	R	E	B	A	T	T	E	R	Y

GRAMMAR FOCUS
QUESTION TYPES

There are five main types of questions, such as:

1. **General questions,** which require a Yes / No answer.

= **auxiliary verb + subject + main verb (+ object)**

Is this a quad-core laptop?– Yes, it is. // No, it isn't

Do you have a spare motherboard for HP Pavilion ? – Yes, I do. // No, I don't.

Are you closing this application? – Yes, I'm // No, I'm not.

Have you finished this project? – Yes, I have // No, I haven't.

Will the CD ROM read my disk? – Yes, it will // No, it won't.

2. **Special (Information) questions**, which ask for specific infor- mation. These begin with question words, such as *what, who, when, where, why, which*, *how, how much / many, how long, how safe*, etc.

= **question word (+ object) + auxiliary verb + subject + main verb**

What are the technical specifications of an ultrabook?

How many cores does the latest laptop possess?

What files was he downloading from the Internet?

3. **Questions to the subject**, which start with *what*, *who* or *which* question words. In this case, the word order is the same as in a positive sentence.

= **question word (+ subject) + main verb**

Who designed this graph? Which design works better?

4. **Questions to the object**, which also start with *what*, *who*, but have a word order similar to that of the general question.

= **question word +auxiliary verb + subject + main verb + preposition**

Who did you develop this software for?

What does this programme refer to?

What material is the hardware made of?

5. **Alternative questions**, which give several options to choose from with the help of conjunction *OR* that can be put in any part of the sentence to make the necessary alternative.

= **(question word) +auxiliary verb + subject + main verb + object + OR + object**

Does the professor have a 15.6-inch-monitor or a 17.3-inch-monitor?

6. **Disjunctive (tag) questions**, which remind a statement with a tag at the end of it.

= **subject + main verb + tag (aux. verb+ subject in the form of pro-noun)**

The charge adapter enables charging up a PC, does not it?

Touchpad is a laptop's built-in mouse, is not it?

Output devices do not input the data into the computer, do they?

1. Arrange the words in the proper order to make questions.

1. installed / she / a new / has / or / the updates / application?
2. the function / is /what / of / the / CPU?
3. are / who / you / e-mail / sending / this / to?
4. sent / who / this / me / reference?
5. have/ a 3.0USB port/ does / or / PC/ your / a 2.0USB port?
6. add / a water-proof / manufacturers / do / to / the assembly / membrane / parts /a laptop / of?
7. what / work / platform / on / this / computer / does?
8. boot / has / time / doesn't it / your / laptop / a quick?
9. manual / is / what / about / this?
10. enhanced / created / who / software / this?

2. Ask questions to get these answers.

1. _____?
The touchpad is placed on the keyboard.
2. _____?
Yes, the keyboard does.
3. _____?
The right button does.
4. _____?
Capacitive battery is used to meet all the above mentioned specifications and users' preferences.
5. _____?
Terry clicked the right button of the mouse.
6. _____?
Yes, the shortcut menu does.
7. _____?
Yes, the input devices will.
8. _____?
Storage capacity of the Solid State Drives (SSDs) ranges from 128 to 500 GB.
9. _____?
No, am not. I am closing the application.
10. _____?
I'm reloading the computer.

2. Arrange the words in the correct order to make questions. Add Why / What / Where / How if necessary.

1. the screen size / is / the laptop / of?
2. is / placed / the touchpad?
3. people / visit / news / do / websites?
4. assembly / consist / parts /a typical / of / PC / does?
5. does / from / RAM / vary / 128 to 500 GB?
6. are / the technical / a user's / specifications / needs / that / meet?
7. digital / do / cameras / photographs / store?
8. websites / do / many / visit / you / regularly?
9. is / technology / needed / a home / to set up / network?
10. deleted / go / files / do? They go to the recycle bin.

3. Translate the sentences into English using new vocabulary.

1. Чи є сучасні комп'ютери невід'ємною частиною життя людей? - Так, безумовно.

2. Портативні комп'ютери мають розширену функціональность, вони компактні та ергономічні.

3. Чи відповідає зарядний пристрій або процесор за наявність зарядженності комп'ютера? - Безумовно, це зарядний пристрій.

4. Які периферійні пристрої складають апаратне забезпечення комп'ютера?

5. Якими пристроями введення, виведення і зберігання інформації ти користуєшся?

6. Пристрої введення інформації переносять інформацію на комп'ютер. До них відносять клавіатуру, мишку, сканер, мікрофон та веб камеру, чи не так?

7. Пристрої виведення виводять оброблену інформацію. Вони включають такі периферійні пристрої як монітор, принтер, колонки, чи не так?

8. Які пристрої зберігання інформації ти знаєш?

9. Восьмиядерний процесор сучасних комп'ютерів, потужна акумуляторна батарея, сімнадцятидюймовий екран з високою роздільною здатністю повністю відповідають очікуванням найвимогливіших користувачів.

10. Меню швидкого доступу команд відкривається натисканням правої або лівої клавіші на сенсорній панелі мишки?

11. Які виробники є лідерами на ринку мобільних електронних пристроїв сьогодні?

12. Такі технічні характеристики як дискретний графічний адаптер, сенсорний екран з роздільною здатністю 4К і використанням антибликовой технології, дистанційне керування зі смартфона, ультратонкий профіль, міцність, надійність, висока продуктивність роблять ультрабук Леново вибором номер один серед користувачів.

SPEAKING

Work in pairs, A and B. Use the information from the two articles, your own knowledge and surf the Internet for the technical specifications of an ordinary laptop and ultrabook to complete the chart. Then exchange the information with your partner.

Student A: Find information about the laptop.
Student B: Find out information about the ultrabook.
What is the storage capacity of the ultrabook / the laptop?
What type of ports…?
What kind of screen…?
What sort of power supply…?

Specifications	Laptop	Ultrabook
Processor		
Hard drive capacity		
RAM		
Storage capacity		
Screen resolution		
Screen size		
Bluetooth connection		
Wi-FI		
USB 2.0./ 3.0 ports		
Graphics adapter		
Built-in camera		
PC speakers		
Shock, damp, dust proof		
Battery		

2. Describe the technical specifications of your computer including its hardware, software, peripherals and storage capacity. Does it look like up-to-date? Why? Use the prompts below.

My PC (laptop) includes system software like … and application software such as … . The hardware consists of … processor, …of RAM and a number of peripherals. Input devices are made up of … . Output devices comprise … .

WRITING

1. Work individually. Make a short summary of the text "A Typical Computer" (see page 13).

UNIT 3
COMPUTER SYSTEMS

GET READY

1. Which computer system is *within your arm's reach*?

2. What do you think these concepts and abbreviations stand for:

RAM, ROM, tablet, application, LINUX, smartphone, SSD.

3. Compare the meaning of the word *application* in the next sentences. Translate it into Ukrainian.

1. Both mainframes and supercomputers have pretty similar *application.*

2. Mainframe, in some way, is more powerful because it runs and supports more *applications* and users simultaneously.

VOCABULARY

1. Match the words to their definitions.

1) clustered computing	**a)** digital files using a combination of moving and still pictures, sound, music, and words in computers
2) to execute	**b)** the amount of memory space available for data storage on a computer or another digital device
3) portable	**c)** able to be carried or moved easily, esp. by hand
4) flat screen	**d)** a type of system software designed to support the computer framework, configure or optimize a computer
5) graphics card	**e)** at the same time
6) memory capacity	**f)** a form of computing in which a group of computers are linked together so that they can act like a single en- tity through software and networking to provide greater computational power than a single computer can
7) multimedia files	**g)** to do or perform something, especially in a planned way
8) utility	**h)** similar to a computer mouse or touchpad
9) simultaneously	**i)** to operate, execute a programme on a computer
10) to run on	**j)** a computer monitor or a television that is thin
11) track-pad	**k)** a small piece of electronic equipment inside a computer that allows it to receive and show pictures and video

2. Complete the table with the necessary derivatives. Pay attention to the meaning of the words.

Verb	Noun	Adjective
1) to necessitate		
2) to add		
3) to require		

4) to compare		
5) to depend		
6) to access		
7) to be capable		
8) to rely		
9) to perform		

3. Match the words having either a similar or opposite meaning. Translate them into Ukrainian.

> generic, strengths, portable, disadvantages, storage capacity, run, advantages, memory capacity, necessitate, weaknesses, execute, require, common, full-sized

READING

1. Before reading the article discuss the following questions.

1. Do you agree that it is quite challenging to select a computer system? Why? Why not?
2. What parameters should a user take into account to make the right decision about selecting a computer system?

2. Read extracts A and B, mark the true sentences and correct the false ones.

1. Supercomputers are the largest and fastest computer system in the world with the highest performance computing power.
2. Having sophisticated calculating capabilities mainframes provide national security, industry, technology.
3. Both mainframes and supercomputers deal with a huge amount of complex calculations.
4. Lustre originates from the words 'Linux' and 'faster'.
5. Linux is run on both supercomputers and mainframes.
6. Storage capacity of a mainframe is massive and measured in gigabytes. A mainframe works faster because it executes one programme at a time, whereas a supercomputer, is more powerful because it runs a few applications simultaneously.
7. Supercomputing platforms deliver power inefficiency, bad performance and unreliability for critical workloads.

A. Supercomputers are the world's largest and fastest computer system with the highest **performance computing power** vital to provide national security, industry, technology, science and improve everyday products, ser- vices, and processes. Possessing sophisti- cated calculating capabilities they meet rigorous requirements of large-scale companies to perform complex scientific tasks and specific applications. Its uses include weather forecasting, climate research, animated graphics, fluid dynamic calculations, nuclear energy research, petroleum exploration, molecular modeling and others. *Lustre*, which is a distributed file system of massive parallelism, is usually used to perform supercomputers large-scale cluster computing. The title *Lustre* is formed by the words Linux, an operating system run on super-computers and mainframes, and cluster-type petabytes (thousands of gi- gabytes) information storage.

B. The chief difference between a super- computer and a mainframe is that a super- computer channels all its power into executing only a few programmes as fast as possible, whereas a mainframe, in some way, is more powerful because it runs and supports more applications and users **simultaneously**.

However, there are supercomputers, which can perform up to quadrillions of operations per second. The parts of a mainframe are comparable to those of a desktop computer, because they both contain hard drives, though memory capacity and processing speed are incomparable. **Storage capacity** of a mainframe is massive and measured in petabytes with the processing speed a million times faster than that of a desktop computer. Both mainframes and supercomputers have pretty similar application that necessitates immense amounts of mathematical calculations; take up the size of large rooms and cost millions of pounds.

Thus, supercomputing platforms offer best-in-class solutions that de- liver power efficiency, performance and reliability for critical workloads.

3. Read extracts C-E and complete the statements.

1. A desktop computer consists of a …
2. It is not portable because …
3. A desktop computer has some additional ports or sockets which can be used to …
4. A laptop has an … design, with a … and no … attached to it, which means it is …
5. Tablet computers are designed …
6. Tablets don't have … Their entire screen is …
7. The next four important features expected with a tablet computer are …

C. The most common and familiar computer system is a desktop computer, which consists of a full-sized mouse, keyboard, system block and monitor. It is not **portable**, because it needs to be connected to power supply all the time though many users find it easier to type, create and edit multime- dia files. Besides, many gamers would agree that with a flat, high screen resolution, greater RAM capacity, 3D effect graphics cards and sound cards it is still more convenient to play different games on desktop computers than on laptops. They also have some additional ports or sockets which can be used to con- nect to all sorts of peripheral devices such as pointing devices, printers, scanners, cameras and others.

D. Laptop is a personal computer designed for portability. Many laptops are **designed** to have all of the functionality of a desktop com- puter, run the same software and open the same types of files. However, some laptops, such as netbooks, sacrifice some functionality in order to be even more compact. *There are some important differences between a laptop and a desktop computer.* A laptop has an all-in-one de- sign, with a built-in monitor, keyboard, touchpad and speakers. *This means it is fully functional, even when there are no **peripherals** attached to it. A laptop is quicker to set up, and there are fewer cables to get in the way.* Some newer laptops even have touch screens, so you may not even need to use a keyboard or mouse.

E. Tablet computers are designed to be portable. However, unlike desktop computers and laptops they **provide** a different computing experience. The most obvious difference is that tablet computers don't have keyboards or track-pads. Instead, the entire screen is touch-sensitive, allowing a user to type on a virtual keyboard and use fingers as a mouse pointer. *There are some important features you can*

expect with a tablet computer. It can use dif- ferent types of operating systems. Tablet computers usually use **solid- state drives**, which are more durable than hard disk drives and allow the computer to boot up and open programmes more quickly. Because tablets are **optimized** for Internet use, tablet computers have a built-in Wi-Fi, 3G or 4G and Bluetooth. However, in order to save space, tablet computers have very few ports.

4. Read extract F and answer the questions.

1. Do all people use smartphones only as a means of communication?
2. Are smartphones portable?
3. Why are smartphones referred to as a computer system?
4. What computer options does it suggest?
5. Do you personally consider a smartphone a computer system? If yes, why? Why not?

F. It is estimated that only about 10% of smartphone owners spend it simply as a phone. The point is that smartphones easily **meet the generic requirement** for being classified as a PC. Smartphones are hand held computers designed to be extremely portable, often fitting in the palm of your hand or in your pocket. With a smartphone, you can connect to the Web from virtually anywhere. You can look up infor- mation, send emails, take pictures and play music – often simultaneously.

Their functionality can also be extended with other applications, pro- grammes, which can be used for things like highways **navigation**, science dictionaries and calculators. Besides, the octo-core processors and 4-giga- byte RAM can hardly compare to those of the laptops. If a smartphone was the only choice, a user would always have all documents, photos, games, apps, and utilities in his pocket, **accessible** at any time. *If there is a need to check the time or messages, watch a TV show on the train, or edit a photo all a user needs to do is to flip down his / her high-resolution head-up display.*

5. You have read an article about different computer systems. For questions 1-10 choose from the paragraphs (A-F). The paragraphs may be chosen more than once.

Lustre	1	
Opportunity for the Internet access	2	
A computer system that can perform up-to quadrillions of operations per second	3	
A variety of applications in technology, industry, security and science	4	
Having a touch screen	5	
Desktop computer constituents	6	
A possibility to connect peripherals	7	
Portability of a computer system	8	
Statistical data	9	
Computer systems features	10	

6. Choose the most suitable word or phrase.

1. Nick is going to buy a new *laptop / desktop PC* that he can take to work.
2. A mainframe is more powerful than a supercomputer because it runs and supports more applications and users *together / simultaneously*.
3. *A calculator / highways navigation* in my smartphone allows me to find the way in an unfamiliar part of the city.
4. A *supercomputer / desktop PC* is the most powerful machine in the world.

7. Go back to the text and find the words in bold having a similar meaning to the following ones:

1. Improved	8. Developed
2. Hard drive	9. Processing power
3. Compact	10. Performing
4. Correspond to the needs	11. Available
5. External device	12. Memory capacity
6. At the same time	13. To guarantee
7. Operation	14. Routing

GRAMMAR FOCUS
CONSTRUCTION THERE IS / THERE ARE

There as a kind of preparatory subject and the verb *to be* in the necessary form as a predicate are used in sentences which say that something:

1. Exists (or does not exist) somewhere.
There are many programming languages (i.e. many programming lan- guages exist).
There will be a quantum computer with over 100 qubits of processing capability in some years, (i.e. quantum computers with over 100 qubits of processing capability will appear in some years).

2. Is located somewhere. In this case, the verb *to be* substitutes in meaning any verb of location (hang, lie, stand and so on).
There is a computer with internet access in the laboratory (i.e. A computer with internet access located in the laboratory)?

1. Go back to the text and define the meanings expressed by the constructions given in italics in the article. Use the language Focus to help you.

2. Choose the best word or phrase from the options given below to fill in the gaps. Translate the sentences. Mind that the sentences are translated the other way round.

1. ___a very powerful processor inside this laptop.
A. there are   B. is there   C. there is
2. ___at least one USB port in every computer system?
A. there is   B. are there   C. is there
3. ___a good lecture on physics yesterday.
A. there were   B. will be   C. there was
4. ___all the scientists at the conference?
A. there was   B. were there   C. are there
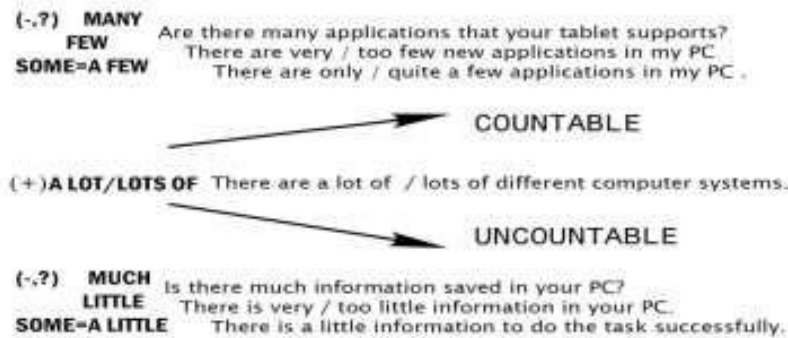5. ___a chance for you to check the updates for your smartphone applications tomorrow.
A. will there be   B. there is   C. there will be

3. Find 6 differences between the two pictures (Fig. 1).

Fig. 1. Computer hardware

The introductory construction **There + to be** is usually followed by different indefinite pronouns (determiners), such as:

4. Fill in many / much, a lot of / lots of / few / little / a few / a little. Sometimes more than one option is suitable.

1. There are ___ various operating systems for you to choose from.
2. There were not _ convenient means of communication 20 years ago.
3. Is there ___ difference between HDMI cables and HDMI Ethernet switch?
4. There are only _ applications supported by this OS.
5. There is very ___ battery charge left. Bring up the charge adapter please.
6. You had better install a good anti-virus system because there _ phish ing attacks on the Internet now.
7. There is too _ free space on my memory stick to copy this software. I need to use a different one.
8. There were quite ___ adequate ideas in his speech regarding our project.
9. There used to be very ___ service at this company and it was very bad.
10. There are ___ useful laboratories equipped with cutting-edge compu- ting machines at the BNTU.
11. There were ___ good gadgets in the shop, that quite ___ customers wanted to buy.

Determiners Some, Any, No

Interrogative	Positive	Negative
Any	Some	No / not any
Are there *any* computers in the lab?	Yes, there are *some* computers in the lab.	No, there are *no* com- puters in the lab. / No, there a*re not any* computers in the lab.

➤ **Some** can also be used in requests.
Can you give me some information about quantum computers?
➤ **Any** can also be used in positive sentences with the meaning of 'it does not matter who / which / what'.
You can buy any smartphone you link. There are some USB ports in any PC.

Compound Indefinite Pronouns

	Positive	**Interrogative**	**Negative**
people	someone somebody	anyone anybody	no one nobody
things	something	anything	nothing
places	somewhere	anywhere	nowhere

5. Fill in *some, any, no* **and their compounds in the sentences. Sometimes more than one option is suitable.**

1. There is ___ important about our research I must tell you.
2. There is ___ need to reinstall Windows, as it has a high performance.
3. Do you know if ___ attends courses on programming?
4. ___ special was added to a new version of this smartphone.
5. Are there ___ commentaries on this application usage?
6. Can you provide users with ___ more Internet security?
7. All people will benefit from ___ you do at your job.
8. You can use ___ authorized version of Windows, they are all quite reliable.
9. There is ___ wrong with the operating system of this computer. You must repair it immediately.
10. There are not ___ chances for __ hackers' attacks with this antivirus system.
11. Can you give us ___ more time to finish our presentation?

6. Translate the sentences from Ukrainian into English.

1. Існує особливий формат виконання кластерних обчислювань, при якому кілька комп'ютерів працюють як єдине ціле за допомогою програмного забезпечення, а також мережі обчислювальних машин та банків даних для забезпечення їх більш високої продуктивності.

2. Виділяють дві дуже потужні комп'ютерні системи: суперкомпьютери і мейнфрейми. Їх завдання полягає в забезпеченні надійної роботи промисловості, науки, техніки і національної безпеки.

3. Між суперкомп'ютером і мейнфреймом є де кілька відмінностей. Основна відмінність полягає в тому, що мейнфрейми направляють свій потенціал на виконання всього лише декількох програм одночасно, в той час як суперкомп'ютери можуть виконувати до декількох мільйонів обчислювальних операцій.

4. Деякі принципи роботи стаціонарного комп'ютера, ноутбука, нетбука і планшета схожі, проте є багато відмінностей: портативність, файлова і операційна системи, продуктивність.

5. Будь-яка комп'ютерна система має специфічну сферу застосування, переваги і недоліки. Кожен віддає переваги будь-якої з них.

6. У лабораторіях та обчислювальних центрах цього університету є мейнфрейми? - На жаль, в університеті немає жодного.

7. На робочому столі мого комп'ютера є багато різних програм, якими я користуюся найчастіше.

8. - Хто-небудь з ваших клієнтів має доступ до сервера компанії? - Ні, ніхто. Наш сервер захищений від будь-якого несанкціонованого доступу.

9. Зі смартфоном ви можете підключитися до Інтернету практично звідусіль.

10. Стаціонарні комп'ютери мають кілька додаткових роз'ємів, щоб підключити всі види периферійних пристроїв.

SPEAKING

1. Split into 5 groups and think of the strong and weak points of all the computer systems mentioned in the texts above, discuss them with your groupmates.

Group 1: a supercomputer and mainframe
Group 2: a desktop computer
Group 3: a laptop computer
Group 4: a tablet
Group 5: a smartphone

2. There is one more type of a computer system like wearable computers. Do you use them? What are their advantages and disadvantages?

WRITING

1. Work individually. Make a short summary of the text "Computer Systems" (see page 13).

UNIT 4
OPERATING SYSTEMS

GET READY

1. How would you complete the statement:

An operating system is …

2. Which operating systems do these logos belong to?

VOCABULARY

1. Match the words and word combinations to their definitions.

1) drop-down menu	**a)** a software application that is integrated into the system of an electronic device and designed for a particular function
2) pull-down menu	**b)** a narrow area across the bottom of a computer screen, that shows which documents or programmes are open and allows you to change them
3) embedded applications	**c)** to put information or a programme onto a computer
4) loaded applications	**d)** a way of arranging information on a computer screen that is easy to understand and use because it uses icons and menus, rather than only text
5) to upgrade	**e)** a list of choices on a computer screen that is hidden until you choose to look at it
6) task bar	**f)** a software application designed for a particular purpose that a user installs optionally on an electronic device
7) to load	**g)** a way of arranging information on a computer screen that uses only text rather than icons and menus
8) enhanced software	**h)** a list of instructions, especially on a computer screen, that is hidden until you open it
9) to install	**i)** improved and much better than before software
10) graphical user interface	**o** improve something and make it more modern to provide a better service
11) command line interface	**k)** to move around a website or computer screen, or between websites or screens
12) to navigate	**l)** to add new software to a computer so that it is ready to be used

2. Correct the definitions. Put the derivatives of the word LOAD given in bold into their proper places in the sentences.

1. If you have something **overloaded** you have the information or software applications loaded for you before you start using it.

2. If you have something **freeloaded** you want the information to be shown on the screen again, usually because there has been a problem or because you want the information to be as new as possible.

3. If you have something **downloaded** you copy or move programmes or information to a larger computer system or to the Internet.

4. If you have something **uploaded** you copy or move programmes or information into a computer's memory, especially from the internet or a larger computer.

5. If you have something **reloaded** you load it onto your computer without being charged.

6. If you have something **preloaded** your computer is supplied with too much information to be processed.

3. Match the words having a similar meaning.

1. To upgrade	a. Vulnerable to viruses
2. A wide selection of	b. A wide variety of
3. Crucial	c. The latest
4. To coordinate	d. To route
5. To be prone to attacks	e. To update
6. Security	f. Consistent with another
7. Embedded	g. Essential
8. Modem	h. To setjup
9. To navigate	i. Safety
10. To install	j. To control
11. Compatible	k. Built-in

Match the following concepts to the pictures they correspond to.

1. Command line interface // Graphical user interface	
2. Startup // Shut down	
3. Drop-down menu // Pull-down menu	
4. Embedded application // Loaded appli- cation	

5. Hardware // Software	
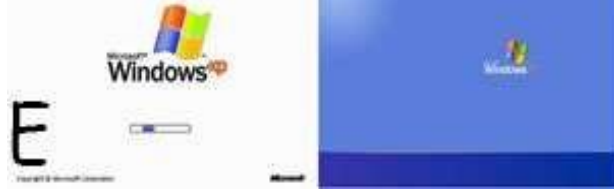
READING

1. Before reading the text answer the questions about the operating system you use. Which one do you use? Are you happy with it? Why? Why not?

2. Read the text and answer the questions.

1. What is an operating system?
2. What are the core functions of the OS?
3. What does the choice between computer platforms depend on?
4. What is the difference between the Command line interface and the GUI?
5. Is Mac OS a proprietary or an open-source OS?
6. Why is Windows the most popular OS platform?
7. What are the benefits and drawbacks of Linux?
8. How many application types do you know? What is the major difference between them?

OPERATING SYSTEMS

An operating system (OS) is the most important software run on a com- puter. It manages all the software and hardware on the computer. There are lots of different computer programmes running at the same time, and they all need to access your computer's central processing unit (CPU), memory, and storage. The operating system coordinates all these pro- cesses to make sure each programme gets what it needs.

Therefore, the core functions of operating systems are the following: starting and shutting down a computer, providing a user interface, pro- gramme management, memory management, utilities provision, task co- ordination, devices configuration and many more.

Operating systems usually come preloaded on any computer you buy. Most people use the operating system that comes with their computer, but it is possible to upgrade or even change operating systems.

The OS that computer runs is sometimes called the platform. There are three most common platforms for personal computers, such as Microsoft Windows, Apple Mac and Linux. Actually, the choice between an Apple and Windows system is usually a matter of personal preference and trend. Both of the operating systems have developed enhanced software being regularly upgraded.

Modern operating systems use a graphical user interface (GUI). A GUI contains graphics, text and icons navigated by a computer mouse. This type of interface is user-friendly, where a user gets access to system functions by selecting programme icons as well as other items from drop- down, pull-down menus and the task bar. Each operating system's GUI has a different look and feel, so if you switch to a different operating sys- tem it may seem unfamiliar at first. Before GUIs, computers had a command line interface (CLI), which meant users had to type every single command to the computer and the computer displayed only text.

As far as Windows operating system is concerned, it was created by Microsoft in the mid 1980s. Over the years, there have been different ver- sions of Windows, but the most recent one is Windows 10 (released in 2015). It is considered as the most popular operating system in the world as it is easy to use, offers a wide variety of programmes, updated drivers and games. Although Microsoft Windows has made great improvements in reliability, it still cannot match the security of Linux and continues to be the most vulnerable to viruses and other attacks.

If we look into Mac OS it is a line of operating systems created by Apple. It comes preloaded on all new Macintosh computers, or Macs. Ac- cording to the statistics as of 2014, Mac OS X users account for 9.5% of the operating systems market whereas the percentage of Windows users is almost 90%. Apple computers tend to be a lot more expensive and do not run the software incompatible with Mac OS. Still, many people prefer the look and feel of Mac OS X, because it is less prone to viruses, has a more appealing and simple interface than Windows.

Linux, created in 1991, is the only open-source operating system. So, any user may modify and distribute it. The advantages of Linux are that it is free, more secure and reliable than Windows and can be easily co-in- stalled and switched to in any computer any time. Besides, there are many different versions you can choose from such as Ubuntu, Mint, and Fedora. Linux users account for less than 2%, because Windows has a wider se- lection of software utilities.

Thus, an operating system plays a crucial role in coordinating and con- trolling every application in a computer system. All the applications a computer runs are of two types: embedded and loaded ones. In fact, the former come automatically with the loaded OS like Internet Explorer, Windows Media Player, Firewall (security-edge gateway), whereas the latter are added to a computer by the user as optional for specific needs.

Various Internet browsers, anti-virus programmes, and many other applications are installed by users themselves.

3. Read the article again and mark the sentences as true or false.

1. The operating system controls only software.
2. The optional functions of the OS are starting and shutting down a computer as well as devices configuration.
3. It is possible to update the OS's components.
4. With the GUI a user must input each command to a computer.
5. In command line interface a computer displays text.
6. Windows 8 is the latest Windows version.
7. Windows OS is less secure than Linux.
8. Linux has a free download from the Internet.
9. Mac OS tends to be more expensive than Windows.
10. According to the statistics as of 2014, Mac OS X users make up 2 % of the operating systems market.
11. Embedded applications are loaded to the computer by the user.
12. Loaded applications perform the core computer functions.

4. Complete the sentences with one of the words in the necessary form.

> utilities, configuration, core, modify, tend, distribute, drop-down, account for, preloaded, pull-down, upgrade, enhanced, task bar, platforms

1. There are several___functions that the operating system performs such as starting and shutting down a computer,___ provision, devices and others.
2. Operating systems usually come ___ on any computer you buy, but it is possible to _ it.
3. Apple and Windows OSs have developed _ _ _ software being regularly upgraded.
4. A user gets access to system functions by selecting programme icons as well as other items from ___ and ___menus and the___.
5. In fact, most computing resources are built on the Windows and Apple___.
6. Linux is the only open-source operating system, the flavour of which is the possibility for any user to ___and____it.
7. Apple computers, which____9.5% of the operating systems market, ___ to be much more expensive.

33

5. Find as many linking words as possible in the article. Put them down in your vocabulary list. Define their meaning.

GRAMMAR FOCUS
DEGREES OF COMPARISON

We use degrees of comparison to talk about the differences between two or more things.

Form	Positive	Comparative	Superlative
a. One-syllable adj. b. Two-syllable adj ending in **y, ow, er**	fast funny narrow	fast**er** funn**ier** narrow**er** but: **less** fast **less** funny	**the** fast**est** **the** funn**iest** **the narrowest** but: **the least** fast **the least** funny
c. Adjs with two or more syllables	secure reliable	**more** secure **less** reliable	**the most** secure **the least** reliable
d. Irregular adjectives	good bad little many/much	better worse less more	**the** best **the** worst **the** least **the** most

Comparative degree is used to compare two things or situations. We use the comparative + **than**.

*Windows is **easier** to use, offers a **wider** variety of programmes and **better** functionality **than** Linux.*

To make the comparison stronger there are several adverbs we can use before the comparative such as **much**, **far**, **a lot** and others.

*The percentage of Windows users is almost **90%, which is much** higher than that of Linux.*
*Apple computers tend to be **a lot** more expensive than Windows computersdo.*

You can also compare things using conjunction **so … as** or **as … as** and the positive degree of the adj.

*Compass 3D is **as usable as** AutoCAD among technical students. Mac OS is not **so secure as** Linux.*
Superlative degree is used to compare more than two things.
*Windows is the **most popular operating system** in the world.*

1. Choose the correct form of the adjective in bold.

1. **The most expensive / the less expensive** OS is not always **the better / the best one**.
2. Safari offers **less wider / less wide** selection of software and **less / the less** Internet security.
3. Mac OS is not so **proner / prone** to malware as Windows.
4. A computer is **more efficient / efficienter** with a carefully installed OS.
5. Google Chrome is as **easy / easier** to use as Torch.
6. Kaspersky is a lot **more quick / quicker** and **more reliable / the most reliable** than Avast.
7. Foxit Reader is **the best / good** and **the cheaper / the cheapest** programme for reading pdf. format.
8. The iPhone has **the best / the better** overall user experience, **higher / the highest** quality apps and games, **the less widest / the widest** range of services, **the biggest / biggest** selection of accessories, and **the best / the better** customer support among other smartphones.
9. Windows phones do not have **as many features as / as more fea- tures as** HTC phones.
10. Apple rebuilt the entire interface on top of a game-style physics, so it's even **much discoverabler / much more discoverable** than ever before.
11. This OS works **more slower / slower** than that one.

2. Complete the sentences by giving the opposite form of the adjective in italics.

Example: Windows OS is *more secure* to use than Mac OS. –Windows OS is *less secure* to use than Mac OS.

1. Torch browser is *the least reliable* to surf the Internet.
2. Apple platforms are *cheaper* than those of Windows.
3. Smartphones are sold at *more affordable* prices than 10 years ago.
4. Asus computers are *far less playful*, and *less powerful* than they used to be 3 years ago.
5. This software is *the best* I have ever used before.
6. Sony focuses on *the worst*, *less coherent*, *the least usable* features for its users.

3. Put the adjectives in brackets in the correct form to compare the Graphical User Interface and Command line Interface.

GUI is (user-friendly) than CLI used to be. It is (popular) than CLI, because it is a lot (convenient) and much (fast) than CLI. Displaying graphics as well as text GUI is definitely (appealing) for users. Another advantage of GUI is that it is (manageable) of all interfaces today. In fact, CLI is (compatible) with modern OSs of all user interfaces, whereas GUI is regarded as (good) and (usable) interface of all.

4. Use the following parameters to compare the four browsers. Try to draw the diagramme reflecting usability of the Internet browsers.

Useful language: Mozilla Firefox is faster than Internet Explorer. Google Chrome is the fastest of all. Internet Explorer is the lowest of all…

Technical specs	Internet Explorer	Mozilla Firefox	Google Chrome
Speed	The speed is be-low average. **6/10**	In terms of speed, it needs only 1.55 seconds to open a new site. **9/10**	Chrome runs and loads web apps, pages as fast as V8 vehicle engine works. **10/10**
Safety	Explorer is a target for hack- ers, though now detects phishing attacks. **7/10**	It protects against viruses, and is always up to date on the latest security fixes. **10/10**	Chrome technologies such as Safe Browsing, sand- boxing and auto- updates manage all malware attacks. **9/10**
Privacy	New privacy settings block almost all popups and delete browsing history. **8/10**	You can easily clear your passwords, cookies and traces. **8/10**	Chrome is at- tacked by ads and spy extensions. **5/10**
Software capabilities	It prints web pages, gives browser suggestions. **7/10**	It provides auto- matic session restore and a fully integrated spell-checker. **8/10**	It saves passwords, translates full pages automatically, gives access to Chrome Web Store. **10/10**
Convenient interface	A user-friendly interface shows the icons of your most vis- ited sites based on browsing history. **7/10**	Firefox features are powerful, useful, simple and accessible. **8/10**	Chrome's browser window is streamlined and designed for ease of use and search. **9/10**

Help and support	It fixes site dis- play problems with compatibil- ity view. **8/10**	It provides an online tutorial and personalized help in the form of live chat with the Firefox community. **10/10**	It provides trou- bleshooting steps online. **9/10**
Attractiveness of the logo			

5. Translate the following sentences into English using your active vocabulary.

1. Операційна система організує роботу як програмного, так і апаратного забезпечення ПК: одночасний запуск де кількох програм, обробка та виконання команд центральним процесором, збереження файлів на ПК або зовнішньому жорсткому диску, управління пам'яттю комп'ютера та інші функції.

2. Таким чином, набір ключових функцій ОС включає в себе установку програмних утиліт для налаштування роботи додатків і пристроїв комп'ютера.

3. Операційна система виконує ключову роль в забезпеченні роботи як вбудованих, так і завантажуваних додатків.

4. За статистикою 2018 року, користувачі операційної системи Windows складають близько 90%, в той час як Мак користується лише близько 10%. Насправді, перша є більш доступною і дешевою для користувачів ПК, а остання більш дорогою.

5. Багато програмістів користуються операційною системою Linux, головна перевага якої - її відкритий доступ, дозволяючий користувачеві редагувати системні утиліти. Існуюча ОС є більш надійною , захищеною від шпигунських розширень і менш схильною до вірусних атак.

6. На мій погляд, Torch браузер, розроблений для користувачів, зацікавлених в більш ефективній роботі в Інтернеті та в раціональному інтерфейсі, також сприяє усуненню несправностей на сайтах швидко і просто.

7. - Операційна система Windows сумісна з комп'ютерами компанії Apple? - Так звісно.

8. Командний інтерфейс менш зручний у використанні, ніж графічний інтерфейс, так як кожне меню швидкого доступу, спливаюче меню та випадаюче пропонують користувачеві широкий вибір опцій, доступних натисканням клавіши мишки.

9. - Яка операційна система встановлена на твоєму смартфоні? - Це Андроїд. Вона підтримує різні додатки і постійно оновлюється.

SPEAKING

1. Teamwork

Choose an operating system and speak about its usability. Use the prompts below: *usability, interface, advantages and disadvantages, most common applications, ease of use and prospects of developing***. Share your opinion with the groupmates.**

2. There are operating systems designed to run on mobile devices. Examples include Windows Phone, Google Android and Apple iOS. Search the Internet for articles that compare these operating systems. Share your opinion with the class.

WRITING

1. Work individually. Make a short summary of the text "Operating Systems" (see page 13).

UNIT 5
DATABASES AND SPREADSHEETS

GETREADY

1. Express your point of view on the following issues:

1. How often do you scan through large pieces of information?
2. Is it easy or difficult to deal with them? Why?
3. How can you possibly make this process more efficient?

2. Why, in your opinion, are electronic spreadsheets and data- bases often referred to as data management systems?

3. Choose the definitions to such concepts as Spreadsheet and Database using the prompts below. Give your own definitions.

- ➢ A spreadsheet is …
- ➢ A database is …
1. computer software that simulates a paper worksheet.
2. a collection of related data that can be accessed quickly.
3. software meant to hold a large amount of data.
4. software used to tabulate data and create graphs based on data.

VOCABULARY

1. Before reading the text match the following words and word expressions to their definitions.

1) query	**a)** to modify smth. to suit a particular task or individual
2) off-the-shelf	**b)** a pattern of straight lines that cross each other to form squares
3) to customize	**c)** to make additions, deletions, or other changes
4) alignment	**d)** a set of type characters of a particular design and size
5) to label	**e)** a request for information from a database
6) entry	**f)** ready-made, available
7) font	**g)** to mark or identify
8) value	**h)** arranging data to line up with a required format
9) to capture	**i)** the numeric data within the cell
10) to edit	**j)** to get back information that has been stored in the memory of a computer
11) grid	**k)** to enter (data) into a computer
12) to retrieve	**l)** the recording of data in a computer file

2. Match the words having a similar meaning.

1.	To vary	a.	Income
2.	Profit	b.	Vital
3.	To contain	c.	To reduce
4.	To decrease	d.	To alter
5.	Important	e.	To include
6.	To design	f.	To create
7.	To refer	g.	Group
8.	Set	h.	To relate

READING

1. Skim the text to find the answers to the questions.

1. What is the main benefit of computer databases?
2. In what way is a database organized?
3. What is a spreadsheet?
4. What can spreadsheets be used for?

DATABASES AND SPREADSHEETS

In the information age managing large amounts of information has be come much easier with the use of computers. Rather than manually dealing with each piece of information, such applications as spreadsheets and databases were created to handle it.

A. Databases.

Databases are very powerful toolsused in all areasof computing. A database is a collection of related data, and the software used in databases to store, or ganize and retrieve the data is called the database management system, or DBMS. It is a key computing skill to organize data, create databases and control data using query languages. A database query function allows you to extract information according to certain conditionsor criteria. One of the main benefits of computer databases is that they make it easy to store information so it is quick to find. For example, if you have music files on your computer, a media application like iTunes, Windows Media Player or Google Music organizes that data for you to quickly search for a singer or songs you want.

A database can manage any type of data, including text, numbers, im- ages, sound, video and hyperlinks (links to websites).

A database is organized using a set of key components. These include: entities (each recorded item), attributes (details about the entity), fields (columns used to capture attributes), records (one row of details about an entity), tables (a set of fields and records) and primary key (unique number for an entity). For example, the entity could be a film and the attributes could include title, duration, certificate, etc.

Database software includes off-the-shelf software such as Microsoft Access, Oracle and MySQL. Databases can also be created and organized using programming languages, such as SQL, Visual Basic and Delphi used to edit databases. Using programming languages means that you can cus- tomize a database to do exactly what you want.

B. Spreadsheets.

Computer models of mathematical data, like budgets, are usually done using a spreadsheet application that processes and performs calculations on the data entered by the user.

A spreadsheet appears as a grid, each row has its own number and each column its own letter. This labelling of rows and columns is used to give each cell a cell address or reference, for example, C5 means column C, row 5. Cells can contain numbers, text or formulae. Formulae are entries that have an equation which calculates the values to display. They can be used to calculate totals, percentages, discounts etc.

Spreadsheets have many built-in functions, pre-written instructions that can be carried out by referring to the function by name. The format menu lets you choose font, alignment, borders etc.

A spreadsheet can be used as a modeling tool. The model is controlled by a set of rules introduced by formulae. These rules can be changed easily to vary the model and provide information about running costs and profit margins.

A company can use a spreadsheet to find out what would happen if they reduced the price of their product and the effect it would have on their income from sales. Being able to answer 'what if...?' questions like this is vital and allows a company to predict future trends in its income and out-goings .

2. Read the text again and decide whether the following statements are true or false.

1. A database is a grid of rows and columns with their own numbers and letters.
2. Rather than manually dealing with each piece of information, spreadsheets were created to handle it.
3. A database can manage only numbers.
4. Companies use spreadsheets to predict future trends in their income and outgoings.
5. Low-level programming languages are used to organize and control data in a database.
6. A set of key components such as entities, attributes and tables are used to organize a database.
7. A spreadsheet application processes and performs data gath.

3. Complete the following sentences with the words below.

> entry, primary key, spreadsheet, query, to be customized, grid,
> off-the shelf, field, database

1. Generally all words you put in the _____will be used.
2. The program can___to serve different purposes.
3. Each ___ in the file takes up a single line.
4. Each ___ page is made up of a ___ of columns and rows.
5. ____software is readily available and is suitable for a large amount of people.
6. In a ___attributes are represented in___.
7. The unique identifying value for records in a database is called a____.

GRAMMAR FOCUS
ACTIVE VS PASSIVE

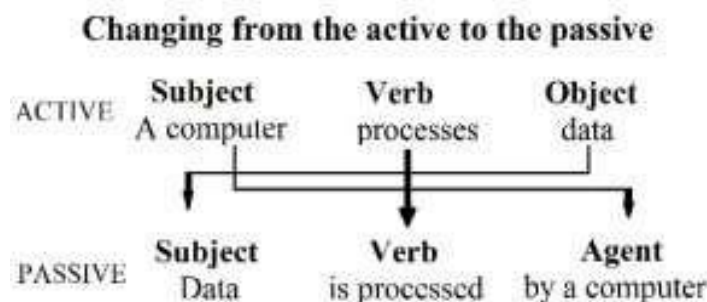**Look at the picture (Fig. 1) and mind the difference between the active and passive voice.**

Fig. 1. Active and Passive Voice

SIMPLE TENSE FORMS

The **Present Simple** is used to describe:

1. Habitual facts or repeated actions.

He starts work at 8 am every day.

2. Universal truths and permanent characteristics, situations or states.

She teaches programming at the University.

3. Scheduled facts and events.

The flight leaves at 2 p.m. (according to the time-table)

Time words with the **Present Simple**: *often, always, usually, seldom, rarely, as a rule, every day (week, year)* etc.

	Positive	Negative	Questions
Present Simple Active	I / you / we / they **compile** the databases well enough. He / she / it **compiles** the databases well enough.	I / you / we / they **do not (don't) compile** the databases well enough. He / she / it **does not (doesn't) compile** the databases well enough.	**Do** you / we / they **compile** the databases well enough? **Does** he / she / it **compile** the databases well enough?
Present Simple Passive	The database / databases **is / are compiled** well enough **by** him.	The database / databases **is / are not compiled** well enough **by** him.	**Is / Are** the database / databases **compiled** well enough **by** him?

The **Past Simple** is used to describe:

1. A single past action or a past state.

I started learning JAVA 2 years ago.

2. A succession of single past actions.

I entered the office, looked around and came up to the secretary.

Time words with the **Past Simple**: *ago, last year (week, month), yes- terday, in 1997* etc.

	Positive	Negative	Questions
Past Simple Active	I / you / we / they / he / she / it **com- piled** the databases well enough.	I / you / we / they / he / she / it **did not (didn`t) compile** the databases well enough.	**Did** you / we / they / he / she / it **compile** the databases well enough?
Past Simple Passive	The database / databases **was / were compiled** well enough **by** him.	The database / databases **was not / were not compiled** well enough **by** him.	**Was / Were** the database / databases **com- piled** well enough **by** him?

The **Future Simple** is used to describe:

1. A predicted future action, a happening of which is inevitable.

Next year he will be 18.

2. An action which the speaker regards as possible, probable or likely to happen in the future.

I don't think I will pass my exams easily.

3. An action decided on spontaneously, out of circumstances.

It's hot in the office. I will turn on the air conditioning.

Time words with the **Future Simple**: *tomorrow, in a week (month, year), next year, in 2030* etc.

	Positive	Negative	Questions
Future Simple Active	I / you / we/ they / he / she / it **will compile** the data- bases well enough.	I / you / we / they / he / she / it **will not compile** the data-bases well enough.	**Will** you / we / they / he / she / it **compile** the da- tabases well enough?
Future Simple Passive	The databases **will be compiled** well enough **by** him.	The databases **will not (won't) be compiled** well enough **by** him.	**Will** the data- bases **be com- piled** well enough **by** him?

1. Choose the correct form of the verb (Active or Passive).

1. Under Insert button charts, gadgets and other special elements *add / are added* to your spreadsheet.
2. To navigate between different sheets you just *click / are clicked* the one you want.
3. Spreadsheets *will find / will be found* a variety of new applications soon.
4. Formulae *were entered / enter* by the user two hours ago.
5. The results of computations *will be recorded / will record* in the form of tables.
6. Such applications as spreadsheets and databases *created / were cre- ated* to handle information.
7. To edit a database he *used / was used* SQL language.
8. You *choose / are chosen* font, alignment, borders in the format menu.
9. A spreadsheet *is used / uses* as a modeling tool.
10. Databases *are* often *referred / refer to* as data management systems.
11. This database *will use / will be used* to store our financial information.
12. Our university library *is connected / connects* to many electronic databases specializing in different fields of science.

2. Use the verbs in the following sentences in the negative and interrogative forms.

1. A spreadsheet stores data values in cells.
2. Databases involve a higher level of technical processing.
3. He established the relationships between databases.
4. The programme will be compiled in a few days.
5. A database was programmed to show only certain information.
6. Some databases are run on servers and accessed over networks.
7. Cells contain numbers, text or formulae.
8. They used spreadsheets to calculate totals, percentages, discounts.

3. Transform the sentences using the verbs either in the Active or Passive Voice.

1. When did the programmer open the new application?
2. The new equipment was not installed in the lab by the engineers.
3. Our technicians will distribute Wi-Fi for you.
4. Google spreadsheets include the print command, undo and redo options.
5. All Sony tablets users were allowed to use unlimited Internet for free by Sony Corporation.
6. Android users deploy various applications in a multitude of mobile devices.
7. The results of computations were recorded in the form of tables.
8. They often refer to the results of his numerous experiments.

4. Put the verbs in brackets in the correct (Active or Passive) form using the Present Simple or Future Simple Tense.

Google Spreadsheet (be) a free web best application similar to Mi- crosoft itself. You (create) and (edit) spreadsheets for all kinds of projects including contact lists. To get started, the create button (click) and a spreadsheet (choose). First, we (have) a toolbar, where different shortcuts (access). The print command, undo and redo options (include) as well as the self-format and font size (control) by the user. To view even more options the menus above the toolbar (use). Thus, you (give) access to many additional features. You (navigate) back to Google drive to title up you spreadsheet so that it is easier to find a file again in the future. There (be) no save button, because Google spreadsheet (use) the auto save feature, which automatically (save) your file any time you (make) a change. Finally, you (find) a comments button and a share button. You (allow) to collaborate with other Google Drive users and you quickly (manage) your sharing options. Each spreadsheet (consist) of cells, columns and rows for your data. A cell (be) the interaction of a row and a column. There (be) also the formula bar where text, formulas and functions for a specific cell (enter). At the very bottom of the window additional sheets (add) to your spreadsheet by clicking a plus button .

5. Here is a timeline list of changes. Using the table below write the sentences to describe these changes. Follow the example.

Example: *People **invented** the Sims City in 2000.*
*The Sims City **was invented** in 2000.*

2000	Today	2030	Verb
the Sims City	touch-screen games	mainstream games become services and plat- form	invent
2000	**Today**	**2030**	**Verb**
First camera phone	20 mega-pixel camera phones	100-pixel camera phones	manufacture
humanoid ro- bot	3D PC cameras	interactive computers	introduce
Sony Play Station 2	wireless display	biometric sensors	release
USB Flash drive	wireless charging	15-millimeter thin PCs	develop

6. Translate the following sentences into English.

1. - Чи містить яку-небудь інформацію таблиця бази даних, в якій немає полів? - Якщо я не помиляюся, таблиця без полів існувати не може.

2. - Для чого використовуються атрибути? - Наскільки я знаю, вони використовуються для визначення того, яка інформація повинна бути зібрана про сутність. Наприклад, для сутності «замовник» буде зберігатися інформація про його найменування, адресу, представників і т.д.

3. Запити призначені для відбору та обробки даних, чи не так?

4. - З чого складається електронна таблиця? - Вона складається зі стовпців і рядків, на перетині яких розташовується осередок.

5. Застосування електронних таблиць спрощує роботу з даними і дозволяє отримувати результати без проведення розрахунків вручну.

6. Електронні таблиці та бази даних мають схожі характеристики, але застосовують різні технології для обробки, класифікації та фільтрації даних.

7. - Якого роду дані можуть компанії створювати, зберігати та витягати з баз даних? -

Все залежить від відділу. Наприклад, фінансовий відділ працює з даними про витрати, доходи і т.д.

8. Прямий доступ до бази даних компанії через мережу був захищений паролем, визначаючим користувача.

9. - Ваші співробітники використовують електронні таблиці для аналізу даних про продажі? - Звичайно, за допомогою формул в програмі електронних таблиць ми підраховуємо передбачуваний прибуток на наступний місяць.

SPEAKING

1. Work in pairs. Study this example of a record from a database of company employees. What fields do you think it contains? What other fields might be useful?

Terry Jones	Web development	Web designer	30/5/85	$3000

2. In pairs, discuss what fields you would include in a database for your music collection.

3. Work in pairs. Study this extract from a spreadsheet for sales from a computer games sales outlet. Answer these questions.

How many *columns* are there?
What information do they contain?
How many *rows* are there?
What does *cell* A3 denote?

	A	**B**	**C**	**D**	**E**
1	*Day*	*GTA 5*	*The Witcher 3*	*Total*	*Profit*
2	Mon	23	18		
3	Tue	30	24		
4	Wed	35	29		
5	TOTALS				

WRITING

1. Work individually. Make a short summary of the text "Databases and Spreadsheets" (see page 13).

GET READY

1. Match the pictures (a-h) with the multimedia applications (1-8).

1) virtual reality;
2) public access points;
3) electronic learning;
4) electronic book;

5) video games;
6) electronic encyclopedia;
7) electronic magazine;
8) presentation.

Fig. 1. Application areas of multimedia

2. Which of these multimedia products do you and your friends often use in your everyday life? Share your answers with the class.

VOCABULARY

1. Before reading the text match the following words and word expressions to their definitions.

1) link	**a)** animations that include sound and images
2) extension	**b)** service offered to customers for free for a short period of time
3) interactivity	**c)** reference to another document
4) newsletter	**d)** the programs in which full control is given to the users
5) free trial	**e)** the communication process between humans and computer software
6) banner	**f)** easy to use
7) pop up window	**g)** a window that suddenly appears when you select an option

8) embedded video	**h)** a message sent out to subscribers on a regular interval
9) flash movies	**i)** a set of characters after a filename used to identify the kind of file
10) user-driven programs	**j)** video within an email for marketing purposes
11) media streaming	**k)** an advertisement that extends across the width of a web page
12) user-friendly	**l)** a technique for transferring data as a steady and continuous stream

2. Match the words having a similar meaning.

1.	Hard-wearing	a.	Widespread
2.	To engross	b.	To limit
3.	To convey	c.	To change
4.	Commonplace	d.	Traditional
5.	Promotion	e.	Durable
6.	Simulation	f.	Customer
7.	Consumer	g.	Imitation
8.	To alter	h.	To immerse
9.	To restrict	i.	To communicate
10.	Conventional	j.	Advertising

READING

1. Scan the text to decide which sentence summarizes it best.

1. The combination of text, sound, images and video is known as mul- timedia.
2. Multimedia has influenced the way products are advertised and marketed.
3. Multimedia is increasingly being used in education, advertising and entertainment.
4. Everyone can use multimedia products, as they are simple and user- friendly.

WHAT IS MULTIMEDIA?

➢ Multimedia refers to the technologies and applications that integrate different media: text, sound, image and video. Multimedia can be used to convey information to people effectively. Its power resides in interactiv- ity, hypertext and hypermedia. Multimedia software is usually interactive; hypertext means that you can click on a word and jump to another screen with more information; hypermedia is similar but works with sounds and images. Multimedia is now commonplace and can be used for e-learning purposes, entertainment, promotional and advertising purposes, e-publi- cations, modeling and simulation, public information.

➢ Traditionally computer-based education programs used separate multimedia components such as texts, images, video clips, and presented them in a sequence decided by the author. Nowadays multimedia in edu- cation allows the programs to be user-driven and not restricted by time. E-learning involves education programs through electronic means. Interest in e-learning is growing fast, because students can have access to online resources, lectures and other study material at the time that suits them. New Internet technology has made it possible to use videoconferencing in e-learning. It involves using the web to connect a virtual classroom so that the tutor and learners can interact with each other.

➢ A multimedia product should entertain and engross the user. Entertain- ment sources can be viewed in a variety of multimedia contexts, including games, video, DVDs and Blue-ray Discs. Traditional ways of viewing media are increasingly being replaced by new methods, such as downloading content to mobile phones or media streaming over the Internet.

➢ When marketing and advertising a product, it is important to iden- tify and meet the end-user's requirements. Multimedia has altered the way products are advertised and marketed. Products are advertised in banners, pop-up windows, links, embedded video, flash movies and more. Most companies that have a website produce monthly newsletters or regular emails that consumers can sign up to receive. Many software companies allow customers to download free trials directly from their websites so that they can try before they buy.

➢ Multimedia has also influenced publications. As well as reading tra- ditional books or magazines, consumers can now read e-publications. These are publications that are published electronically through such me- dia as the Internet. E-books and e-zines (the electronic equivalent of mag- azines) can be read online, downloaded to a computer, or to a portable device such as a PDA.

➢ A virtual reality program provides you with multi-sensory infor- mation and 3D effects in real-time. When you interact with a virtual reality program you have a sense of being completely immersed in it. Virtual re- ality can be used to simulate real events, such as flying an aeroplane.

➢ Multimedia public access points are often located in museums or city centres and are used as information points. For example, a bus station may use a public access point to inform customers of bus times. The in- terfaces rely on being simple and user-friendly, so everyone can use them regardless of ability or experience. A lot of public access points use a touch-screen input device because it is easy to use and more hard-wear- ing than a mouse and a keyboard .

2. Reread the text and do the following test.

1. What is multimedia?
   a. A fun and interesting product.
   b. A product that uses a combination of images, words and sounds to present information.
   c. A product that is accessed in a structured and systematic way, dic- tated by the author.
2. An educational multimedia software package has the added benefit of being:
   a. user-driven.
   b. presented in a sequential way decided by the author.
   c. interesting, combining text and images.
3. What is a major benefit of e-learning?
   a. Students like using computers.
   b. E-learning products are more informative than traditional learning resources.
   c. Students can study at the time and place that suits them, provided they have access to the Internet and a computer.
4. Why does a company website encourage users to submit their email address?
   a. To bombard the customers with spam.
   b. To inform customers about current promotions and offers.
   c. To keep a note of types of email address.
5. Why do companies allow customers to download free trials or read chapters from their books online directly from their websites?
   a. Resources on the Internet are copyright free.
   b. They don't value the product.
   c. They want customers to make sure they want this product.
6. What is a virtual reality program?
   a. A program that presents the user with multi-sensory information and 3D effects in real-time.
   b. A computer game.
   c. A television program that films contestants.
7. What is a common device used to access public information points?
   a. Mouse and keyboard.
   b. Microphone.
   c. Touch screen.

3. Match the words that go together in the text "What is Multimedia?". Then complete the sentences below.

1.	User	a.	Reality
2.	Virtual	b.	Requirements
3.	Media	c.	Device
4.	To meet	d.	Friendly
5.	Electronic	e.	Points
6.	Access	f.	Learning
7.	Input	g.	Effects
8.	Blue-ray	h.	Trials
9.	Free	i.	Disc
10.	3D	j.	Streaming

1. ___ is becoming increasingly important with the growth of the In- ternet because most users do not have fast enough access to download large multimedia files.

2. ___ is an environment that is produced by a computer and seems very like reality to the person experiencing it.

3. Access to online resources, lectures and other study material 24 hours a day is one of the major advantages of _ _ .

4. Many software companies allow their customers to download ___antivirus___to experience how they can keep PCs secure from viruses, spyware and other threats!

5. The ubiquity of public Internet ___ makes it easy to get online when you need it no matter where you are.

6. ___ was developed for recording, rewriting and playback of high- definition video (HD) as well as storing large amounts of data.

7. An ___allows users to communicate and feed instructions and data to computers.

8. The use of colors, perspective techniques and lighting helped to cre- ate amazing_on flat surface paintings.

9. Menu-driven programs are considered to be more___than com-mand-driven systems.

10. For Google MapsGL to run on a computer your system needs___certain system.

4. Using the text given below recommend these people what file format to use. More than one format may match the statement.

1. I want to create my own unique photo collage with the photos of my family and friends.
2. I would like to set a song as a ringtone on my smartphone.
3. I keep a lot of information on a hard disk and I want to compress data in order to save space.
4. I would like to convert my birthday party video from an analogue video to a digital one.
5. I am applying for a job and I need to send a formatted print resume as an attachment to an e-mail message.

Common text extensions: **.pdf** (portable document for-mat),**.doc** (MS Word document), **.rtf** (rich text format), **.htm** or **.html** (hypertext markup language for Web files).

Video refers to recording, editing and displaying mov-ing images. Common formats: **.avi** (audio videoz inter-leave), **.mov** (Quick- Time movie)**, .mpg** (mpeg-moving pic- ture experts group).

Graphics include charts, photos, drawings, etc. **.gif** (graphics interchange for-mat), **.jpg** (joint photographic experts group) ideal for pictures with many colours, **.tif** (tagged image file).

Animations are made up of series of independent pictures put together in sequence to look like moving pictures. Common formats: **.gif** for pictures with fewer colours, **.swf** for Flash files.

You can hear sound such as songs, movie, soundtracks and speech. Common audio formats: **.wav** (Windows wave audio format), **.ra** (Real Audio file), **.mp3** (compressed music files).

Files com pressed with WinZip have a **.zip** extension. A popular format used to compress and distribute movies on DVDs or over the Net is **DivX**, a digital video code (Compress, DECompress).

GRAMMAR FOCUS
PROGRESSIVE TENSE FORMS

The **Present Progressive** is used to describe:
1. An activity at or around the time of speaking.
*At present we **are using** this system software.*
2. A fixed future plan.
*Next week we **are buying** new equipment.*
Time words with the **Present Progressive**: *now, right now, at the moment*, *nowadays* etc.

	Positive	Negative	Questions
Present Progressive Active	I / he / they **am** / **is** / **are compil- ing** a program	I / he / they **am** /**is** / **are not compiling** a program.	**Is / Are** he / they **compil- ing** a pro- gram?
Present Progressive Passive	A program / the programs **is / are being compiled.**	A program / the programs **is / are not being com- piled**.	**Is / Are** a pro- gram / the pro- grams **being compiled?**

The **Past Progressive** is used to describe:
1. An activity at a definite time in the past (***at 4 pm yesterday, from 3 to 5 yesterday, the whole day yesterday***).
*He **was writing** a report at 5 pm yesterday.*
2. An activity which is a time frame for another activity.
***While** we **were carrying** out the experiment the other team was record- ing the results.*

	Positive	Negative	Questions
Past Progressive Active	He / they **was / were compiling** a program	He / they **was / were not compiling** a program.	**Was / Were** he / they **compiling** a program?
Past Progressive Passive	A program / the programs **was / were being compiled.**	A program / the programs **was / were not being compiled**.	**Was / were** a program / the programs **being compiled?**

The **Future Progressive** is used to describe:

1. An activity at a definite time in the future (*at 4pm tomorrow, from 3 to 5 tomorrow, the whole day tomorrow*). *We **will be discussing** multi- media development at 3 o'clock seminar tomorrow.*

	Positive	Negative	Questions
Future Progressive Active	He / they **will be compiling** a program	He / they **will not(won't) be compiling** a program.	**Will** he / they **be compiling** a program

1. Choose the right tense form of the verbs in the following sentences.

1. A computer *is downloading / will be downloading* a free trial now.
2. I *am listening / was listening to* the online radio program while I *was going / went* home.
3. We *were discussing / are discussing* the benefits of e-learning from 2 to 3pm yesterday.
4. Interest in multimedia products *is growing / are growing* rapidly nowadays.
5. I *was searching / were searching* the Web for sites on digital cameras while my groupmates *were working / are working* on their project.
6. The professor *was demonstrating / demonstrated* new techniques to students when I *entered / was entering* the classroom.
7. What *will you doing / will you be doing* in the computing centre from 3 to 4 pm tomorrow?

2. Rewrite the following sentences using the Passive Voice forms.

1. Nowadays new methods are replacing traditional ways of viewing media.
2. He was downloading audio files by native speakers from our web- site at 5 pm yesterday.
3. Were they setting up the laboratory equipment all day yesterday?
4. They are still considering the engineer`s project.
5. While we were creating an interactive multimedia presentation, our groupmates were carrying out a very important experiment.
6. Are they compiling a new program now?
7. People are increasingly using multimedia in education, advertising and entertainment.

3. Complete the sentences with the correct tense forms of the verbs in brackets.

1. While Ann (to compile) a program the chief engineer (to speak) to Nick.
2. He (to make) a report on multimedia applications at the moment.
3. What is the e-zine you (to look through) called?
4. Who you (to talk) on the phone just now?
The engineers (to carry out) the tests while the assistants (to record) the results.
5. We (to speak) about the difference between DVDs and Blue-ray Discs at 3 o'clock seminar yesterday.
6. What you (to do) at 9 am tomorrow? – I (to take) the exam on pro- gramming languages.
7. Media streaming allows users to listen to an audio file while it (to download).
8. At present he (to train) to be an online teacher as he (to want) to be a specialist in e-learning.

4. Work in pairs. Ask your partner what these people.

a) are doing at the moment;
b) were doing at 5 p.m. yesterday;
c) will be doing at 3 p.m. tomorrow.

1. Phillip (to create a file / to browse the Web / to test a program).
2. Ann (to insert an image / to download music files / to play online games).
3. Vicky and Mark (to connect a device / to surf the Web / to send e-mails).
4. Tim and David (to fix net- work hardware / to play online games / to edit digital photo).
5. John (to set up a wireless network / to create a photo collage / to download photos).
6. Jenny and Sam (to install a new program / to back up data / to use a library database).

5. Translate the following sentences into English.

1. Мультимедія – це сукупність комп'ютерних технологій, які одночасно використовують графіку, текст, відео, анімацію та звукові ефекти.

2. Постійний доступ до онлайн ресурсів, лекцій та іншого навчального матеріалу є однією з головних переваг дистанційного навчання.

3. В даний момент комп'ютер завантажує безкоштовну пробну версію програми обробки відеоматеріалів.

4. – Де я можу отримати інформацію про цей мультимедійний курс? – Я відправляю її вам по електронній пошті прямо зараз.

5. Потокова передача медіа даних дозволяє вам прослуховувати аудіо файли під час їх завантаження.

6. – Тебе не було у мережі вчора ввечері. Чим ти був зайнятий? – Цілий вечір вчора я готував презентацію нашого нового проекту.

7. В той час як Денис редагував відео на комп'ютері, Павло завантажував музичні файли на свій смартфон.

8. Сьогодні електронні журнали і газети, блоги та навіть електронні книги змінюють спосіб, яким ми отримуємо інформацію.

9. Ми будемо рекламувати наш новий мультимедійний додаток увесь наступний місяць.

10. Розширення файлу дозволяє користувачеві або програмному забезпеченню комп'ютера визначити тип даних, що зберігаються в файлі.

11. Вчора з 3 до 4 години ми працювали з нашим викладачем в режимі відеоконференції.

12. Зараз нове програмне забезпечення тестується для веб-дизайну. Ми сподіваємось, що воно буде простим та зручним для користувача.

SPEAKING

1. Work in groups to develop the following ideas:

1. Multimedia is widely used for education purposes.
2. Multimedia has opened a new era for advertising and marketing.
3. Multimedia products entertain the users.
4. Multimedia has influenced publications greatly.

2. Work in groups. Using the information given in the text "What is Multimedia?" and the prompts in the box make a list of advantages and disadvantages of e-learning. Add your own ideas of pros and cons. Share your opinions with the class.

To be cost-effective, to be focused on smb., to lack human interaction, to be available online, to meet one's interests, to be technology dependent, to be highly self-motivated, to be user-friendly, to study at times and in places that suit you, to save time, to be provided with interactive teaching and multimedia materials.

WRITING

1. Work individually. Make a short summary of the text "What is Multimedia?" (see page 13).

UNIT 7
PROGRAMMING

GET READY

1. Look at the picture (Fig 1) and answer the following questions.

1. What computer languages do you use in your studies? What for?
2. What other languages used in programming can you name?

Fig.1. Programming languages

2. Work in pairs. Have you ever written a program? Discuss with your partner the steps in programming listed below 1-6. Fill in the gaps with the missing stages a-c (Fig. 2).
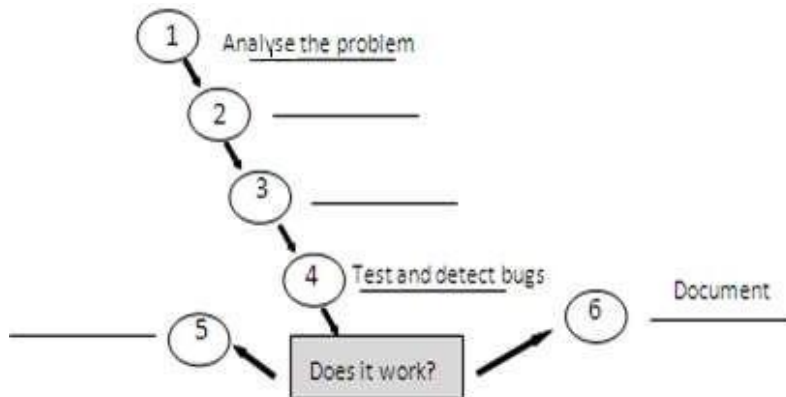

Fig. 2. Steps in programming

a. Debug and correct the program.
b. Design a flowchart.
c. Write a code and compile a program.

VOCABULARY

1. Match the words to their definitions.

1) demanding	a) taking up or involving a great deal of time
2) sophisticated	b) requiring much effort and energy
3) time-consuming	c) to change a computer program into a machine language through a compiler
4) tedious	d) advanced and complicated
5) to debug	e) a set of tags assigned to elements of a text to dictate how they should be displayed

6) markup	**f)** while activity is ongoing
7) to compile	**g)** a text file that contains a sequence of commands
8) shell script	**h)** to change into a different form
9) to interpret	**i)** too long, slow or dull, monotonous
10) to convert	**j)** a step-by-step diagram for planning a solution model to a given problem
11) on the fly	**k)** to translate a program in a high-level language into a machine language
12) flowchart	**l)** an instruction written in a high-level language
13) statement	**m)** to identify and remove errors from computer software or hardware

2. Match the words having a similar meaning.

1. To perform	a. To keep
2. Expertise	b. Boring
3. To interact	c. Bug
4. Demanding	d. Complicated
5. To interpret	e. To use
6. Tedious	f. Challenging
7. To maintain	g. Competence
8. Sophisticated	h. To execute
9. To utilize	i. To communicate
10. Error	j. To translate

READING

1. Read the text to answer the questions.

1. What is programming?
2. What languages are referred to as low-level languages?
3. What high-level languages are mentioned in the text?
4. What are markup languages used for?

PROGRAMMING LANGUAGES

Programming is an important engineering tool. It is a process of writing a computer program using a computer language. Computer programs are collections of instructions that tell a computer how to interact with the user and the computer hardware and how to process data. Our work would have been very demanding and time consuming without programming.

Programming languages can be classified as either low-level languages or high-level languages. Low-level programming languages or machine languages are the most basic type of programming languages and can be understood directly by a computer. It is extremely tedious to program di- rectly in machine language because instructions are written as sequences of 1s and 0s called bits. Assembly languages are used to make machine- language programs easier to write. For example, assembly languages use abbreviations such as ADD, SUB, MPY to represent instructions. The pro- gram is then translated into machine language by software called an as- sembler.

High-level languages are relatively sophisticated sets of statements uti- lizing words and syntax from human language and therefore easier to read, write, and maintain. Examples of high-level languages are Pascal (widely used as a beginner or as a teaching language), C (used to write system software, graphics and commercial programs), C++ (primarily utilized with system / application

software, drivers, client-server applications), Cobol (popular for business applications), Fortran (used for scientific and mathematical applications), Java (designed to run on the Web), Visual Basic (used to create Windows applications) and shell scripting languages such as those found in the UNIX, Linux and Mac OS X environment. The languages used to create Web documents are called markup languages, they use instructions (markups) to format and link text files, for example, HTML (Hypertext Markup Language).

Regardless of what language you use you need to translate it into ma- chine language so that a computer can understand and process it. There are two ways to do this: to compile the program and interpret the program.

In a compiled language, the programmer writes more general instruc- tions and a compiler (a special piece of software) automatically translates these high level instructions into machine language. The machine language is then executed by the computer. A large portion of software in use today is programmed in this way. In an interpreted programming lan- guage, the statements that the programmer writes are interpreted as the program is running. This means they are translated into machine lan- guage on the fly and then are executed as the program is running.

People communicate instructions to the computer in programming lan- guages and the choice of the language depends on the type of computer, the sort of program, the expertise of the programmer, etc. .

2. Read the text again and decide if the following statements are true or false.

1. The only language a computer can directly execute is machine language.
2. It is not necessary to convert a program into machine language if you use high-level languages.
3. Machine language uses abbreviations and is easy to write.
4. Low-level programming languages are closer to human languages.
5. A large portion of software in use today is programmed in compiled languages.
6. In compiled languages the statements that the programmer writes are interpreted as the program is running.
7. Pascal used to create Web documents is one of the popular high- level languages.
8. Markup languages use instructions to format and link text files.
9. HTML is an example of a low-level programming language.

3. Complete the following sentences with the words below.

> a compiler, process, machine-language, on the fly, programming
> language, application, data, expertise

1. A single statement in a high-level language can represent several ___instructions.
2. The operating system is the best-known example of ___software.
3. Each ___ has a unique set of keywords and a special syntax for or- ganizing program instructions.
4. ___automatically translates high level instructions into machine language.
5. The software program has a table of values for some results, but calculates others___.
6. Computer can___a large amount of___in a short period of time.
7. She has considerable ___ in computer programming.

GRAMMAR FOCUS
PERFECT TENSE FORMS

We use the **Present Perfect** to talk about past events with a connection to the present (focus on the result but not on the time).

*I **have** already **fixed** the printer fault (now I can print my report).*

Time words with the **Present Perfect**: *just, already, yet, ever, this week, all my life, lately, recently, since, for.*

	Positive	Negative	Questions
Present Perfect Active	They / he **have / has translated** the program into machine language	They / he **haven't / hasn't translated** the program into machine language	**Have / has** they / he **trans- lated** the pro- gram into ma- chine language?
Present Perfect Passive	The program / programs **has / have been trans- lated** into ma- chine language.	The program / pro- grams **hasn't / ha- ven't been trans- lated** into machine language.	**Has / have** the program / programs been **translated** into machine language?

We use the **Past Perfect** to describe an activity that happened earlier than another activity in the past or an action completed by a certain time in the past.

*By the time we arrived they **had** already **installed** software.*

Time words with the **Past Perfect**: *by, by the time, after, before, as soon as* and many of the time words used with the Present Perfect.

	Positive	Negative	Questions
Past Perfect Active	They **had trans- lated** the program into machine language	They **hadn't translated** the program into machine language	**Had** they **translated** the program into machine language?
	Positive	Negative	Questions
Past Perfect Passive	The program **had been translated** into machine language.	The program **hadn't been translated** into machine language.	**Had** the program **been translated** into machine language?

We use the **Future Perfect** to describe an action that will be completed by a certain time in the future.

*They **will have reinstalled** the application by 5 pm tomorrow.*

Time words with the **Future Perfect**: *by next year, by tomorrow, by the time, after, before etc.*

	Positive	Negative	Questions
Future Perfect Active	They **will have translated** the program into machine language	They **will not (won't) have translated** the program into machine language	**Will** they **have translated** the program into machine language?
Future Perfect Passive	The program **will have been translated** into machine language	The program **will not (won't) have been translated** into machine language	**Will** the pro- gram **have been translated** into machine language?

1. Complete these questions using the Present Perfect tense form of the verb in brackets.

1. ___ you ___ (run) the laptop in the battery mode?
2. How long ___ you ___ (have) the iPad?
3. ___ he ___ (open) the file?
4. ___ they ___ (change) the Internet Service Provider yet?
5. ___ she ___ (enter) her username and password?
6. ___ you ___ (detect) logic errors?
7. ___ he ___ (check) the remaining disc space?
8. ___ anyone ever ___ (hack) into your computer system?
9. How many e-mails ___ you ___ (write) today?
10. ___ Peter ever ___ (be) to the IT forum?

2. Rewrite the following sentences using the Past and Future Perfect (Active or Passive) and the appropriate time words.

1. The operating system has been upgraded recently.
2. They haven't detected the bugs yet.
3. Has the flowchart been designed yet?
4. The charger has already stopped working.
5. Have you defined the purpose of the program?
6. I have already made my own website.

3. Complete the sentences with the correct tense form of the verbs in brackets.

a. Active Voice
1. They (to test) the program and (to detect) the bugs by 3 p.m. tomorrow.
2. This company (to play) an important role in multimedia development since its very inception.
3. She never (to be able) to fix the problem.
4. They (not to install) the updates yet.
5. You ever (to watch) TV on the Internet?
6. He (to study) some high-level computer languages by next year.

b. Passive Voice
1. After the program (to be improved) it (to be published) as an up-dated version.
2. All the articles on programming languages (to be translated) by next Friday.
3. Five networks for large companies (to be set up) recently.
4. The program already (to be translated) into machine language.
5. A flowchart (to be designed) by 3 pm yesterday.
6. The printer fault (not to be fixed) yet.

4. Work in pairs. Interview your partner. Ask general and special questions. Make sure you use the correct tense in your questions.

Example: Download music from the Internet (what site)
A: Have you ever downloaded music from the Internet?
B: What site did you use?

1. Make your own website   (when)
2. Write a program   (which language)
3. Detect program errors   (what type)
4. Send a video e-mail attachment   (who to, when)
5. Replace a hard disk   (what model)

5. Translate the following sentences into English.

1. Протягом де кількох років ми використовуємо мову програмування Java для написання програм, які працюють у мережі.

2. Наші програмісти вже розробили блок – схему програми. До кінця тижня вони напишуть інструкції для перетворення її у код мовою гіпертекстової розмітки.

3. Інтерпретатор перекладає програму мовою машини прямо під час її виконання.

4. Існують різні типи програмних помилок, які можуть виникати на етапі розробки програмного забезпечення.

5. Після того, як програма була розроблена, програміст почав її тестування для виявлення помилок.

6. – Ти вже скачав пробну версію цієї антивірусної програми? – Так, але я ще не вирішив купувати програму чи ні.

7. Компілятор тільки що переклав програму з мови високого рівня на низькорівневу мову.

8. Вибір мови програмування залежить від типу комп'ютера, виду програми, а також від досвіду програміста.

9. Після того, як операційна система була оновлена, її вразливість зменшилася.

10.– Яка різниця між мовами Сі та Сі ++? – Сі ++ – це версія Сі, яка включає об'єктно-орієнтоване програмування. В цьому випадку програміст дає кожному об'єкту функцію, яка може бути змінена без зміни всієї програми.

11.До кінця семестру ми навчимося програмувати мовою Python.

SPEAKING

1. Work in pairs. Use the text below to complete the dialogue on the steps in writing a program. Arrange the words in questions in the correct order.

To write a program software developers usually follow these steps:
➢ First, they try to understand the problem and define the purpose of the program.
➢ They design a flowchart, a diagram which shows the successive logical steps of the program.
➢ Next, they write the instructions in a high level language. This is called coding. The program is then compiled.
➢ When the program is written they test it. They run the program to see if it works and use special tools to detect bugs, or errors. Any errors are corrected until it runs smoothly. This is called debugging or bug fixing.
➢ Finally, software companies write a detailed description of how the program works, called program documentation. They also have a mainte- nance program. They get reports from users about any errors found in the program. After it has been improved it is published as an updated version.

A: program / to write / software / any /developers / follow / don't / steps / they / certain?

B: You are absolutely right. And / you / know / what / do / is / a program / the first / in / step / writing?

A: First of all it is necessary…What / and / software / developers / do / next / do?

B: Well, secondly … By the way, you / do/ a flowchart / what / is / know?

A: If I'm not mistaken, it is… As far as I know, then / the programmers / the instructions / write / language / in / a machine / they / don't?

B: I'm afraid, you are wrong. The instructions are written …

A: Well, I see. But when the program is written…

B: Moreover, software companies…

2. Read the statements below. Which do you agree with more? Why?

1. I think learning a programming language is like learning any human language, you just communicate with a computer instead of another person.

2. Obviously, programming languages and human languages have al- most nothing in common. They can't be compared.

WRITING

1. Work individually. Make a short summary of the text "Programming Languages" (see page 13).

UNIT 8
NETWORKS

GET READY

1. Study the picture of a computer network (Fig 1). What do you think a network is?
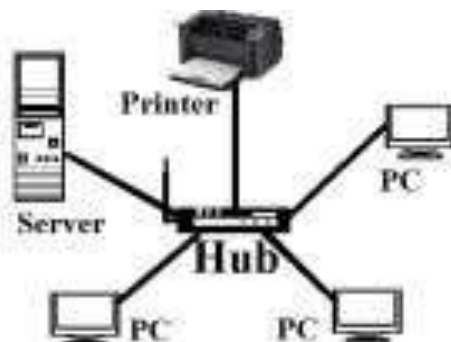

Fig.1. Network

2. Study the diagram of a Local Area Network (LAN) (Fig.2). Answer the following questions.

1. Where is the LAN set up?
2. Who are the users?
3. What kind of hardware is used?
4. What databases can doctors access? What for?
5. What do the receptionists use the databases for?
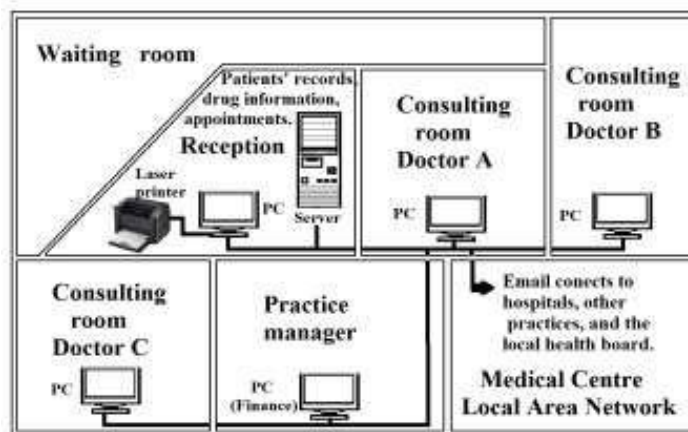6. What advantages does this network have?

Fig. 2. Local Area Network

VOCABULARY

1. Before reading the text match the words and definitions listed below.

1) peer-to-peer network	**a)** a structure or process the end of which is connected to the beginning
2) to set up	**b)** a public place with an available wireless signal for Internet access
3) backbone	**c)** a cable which carries power or signals from one place to another
4) to share	**d)** the use of long thin threads of glass to carry information in the form of light

5) loop	**e)** to arrange, create, organize
6) wire	**f)** a set of conductors that carry signals between different parts of a computer
7) fibre-optics	**g)** to use together
8) hub	**h)** a piece of electronic equipment that makes it possible to connect different networks together
9) bus	**i)** the main transmission path handling the ma- jor data traffic connecting different LANs together
10) arrangement	**j)** when each computer acts as both a server and a client
11) router	**k)** a device for connecting computers in a network
12) hotspot	**l)** the way sth. is organized

READING

1. Scan the text and answer the following questions.

1. What does a computer network allow computers to share?
2. What is a server in a computer network?
3. What are the main types of network?
4. Which hardware component allows a LAN to link to another network?
5. What are the most common network topologies?
6. Which is the largest Wide Area Network?

NETWORKS

A network is a number of computers connected together to allow them to share resources. Networked computers can share hardware, software and data. Most computer networks have at least one server. It is a powerful computer that provides one or more services to a network and its users, for example, file storage and e-mail.

There are two main types of network: Local Area Networks (LANs) and Wide Area Networks (WANs). A LAN is a network of computers within a department, an office, or a building. They can be built with two main types of architecture: peer-to-peer (P2P), where each computer stores files and acts as a server, or client-server, where one computer acts as a server containing the main hard disk and controlling the other PCs.

Computers in a LAN need to use the same protocol, or standard of communication. Ethernet is one of the most common protocols for LANs. A router, a device that forwards data packets, is needed to form a LAN by connecting the devices within a building or to link a LAN to another net-work. Connections between computers on a network can be wired or wire- less. Most networks are linked with cables or wires but Wi-Fi technologies allow creating Wireless LANs which use radio signals to send data across networks. The absence of physical wires makes this kind of network very flexible. Hotspots are WLANs available for public use in places like air- ports and hotels, but sometimes the service is also available outdoors.

There are different ways of setting up a LAN. Three of the main topol- ogies include bus, star and ring. In a bus network, all workstations, servers and printers are joined to one cable – "the bus". In a ring network, all devices are connected to one another in a closed loop configuration. Each data packet on the network travels in one direction. In a star network, each device has its own cable that connects to a hub, a connection point of the elements of a network that redistributes the data. Most networks use a mixture of topologies since each arrangement has its own advantages and disadvantages.

A WAN covers a large geographical area. Most WANs are made from several LANs

connected together. They are usually linked through tele- phone lines, fibre-optic cables or satellites. The main transmission paths within a WAN are high-speed lines called backbones. The largest WAN is the Internet. .

2. Read the text again and decide if the following sentences are true or false.

1. LANs link computers and other devices that are placed far apart.
2. A school network is likely to be a WAN.
3. In client-server architecture, all the workstations have the same ca- pabilities.
4. Files and peripherals can be shared between users in a network.
5. Hotspots can only be found inside a building.
6. A WAN is a collection of computers and networks over a geograph- ically remote area.
7. Wireless LANs use cables or wires as linking devices.
8. In a ring network there are no collisions because data packets travel only in one direction.

3. Match a network topology with the correct description and pic- ture (Fig. 3).

Ring / Star / Bus

1. All the devices are connected to a central station.
2. In this type of network there is a cable to which all the computers and peripherals are connected.
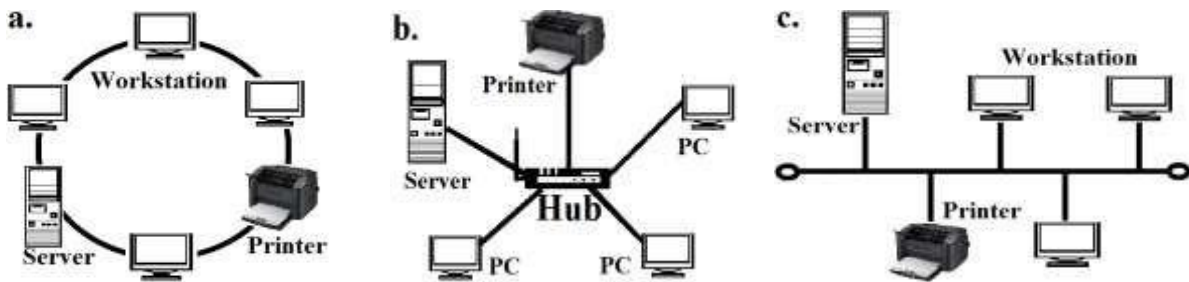3. All devices on a network are connected to one another forming a continuous loop.

Fig. 3. Network Topologies

4. Use the words in the box to complete the sentences. You may have to change some words slightly.

peer-to-peer, fibre-optic, hub, LAN, backbone, hotspot, server, capability, router, setting up

1. All the PCs on a ___are connected to one___ , which is a powerful PC with a large hard disk that can be shared by everyone.
2. A ____is a more complex device that usually includes the of ___hubs.
3. In the ___ model each client can download and share files with other users.
4. To access the Internet via a ___ , you'll need an Internet device that has Wi-Fi capability.
5. A ___ is an intermediary device which enables communication be- tween all devices on a network.
6. ___ an e-mail account is easy, and it's free.
7. A ___cable has been installed on a large scale, enabling vast amounts of data to be transmitted at a high speed using light signals.
8. ___A is the largest 'pipe'(cable or channel) that carries the heaviest data traffic at highest possible speed, and which connects every main server or device on the network.

5. Word-play. Solve the anagrams in column B and match them to the words in column A to complete the phrases used in the text "Networks". The first has been done for you.

A	B	C
1) data	a) rokwtne	
2) radio	b) sikd	
3) file	c) tapeck	
4) hard	d) nlgasi	
5) fibre-optic	e) athp	
6) transmission	f) esu	
7) bus	g) elcba	
8) public	h) agerost	file storage

GRAMMAR FOCUS
REVISION OF TENSES

Present Simple vs Present Progressive

1. Complete the sentences using

a. Present Simple or Present Progressive(Active Voice).
1. Commonly we (to use) C++ and Java Script.
2. At the moment we (to develop) a Web-based project.
3. He always (to ask) the users what they need from the system.
4. Right now I (to try) to learn how to use this application program properly.
5. Today the technicians (to set up) a wireless network at our department.
6. – How much time you (to spend) on surfing the Web each day? – About an hour.
7. Steve is a database expert so he usually (to deal) with data processing.

b. Present Simple or Present Progressive (Passive Voice).
1. Active Server (to use) for this project because it (to be) Web-based.
2. Instructions written in a high-level language always (to transform) into a machine code.
3. Your information (to send) by e-mail now.
4. – What this database (to use) for? – It (to use) for storing our finan- cial information.
5. The results of his numerous experiments often (to refer to).
6. Details of every repair (to download) to a company's mainframe every day.
7. At the moment the departments of the company (to reorganize).

Present Simple vs Future Simple

2. Complete the sentences using the Present Simple or Future Simple (Active or Passive Voice).

1. If you (to add) memory to a computer, it (to run) faster.
2. Files and peripherals (to share) by all the workers when our com- pany (to set up) a LAN.
3. If you (not to save) your document, you (to loose) the information.
4. The keyboards (not to use) in future if voice-recognition systems (to become) more sophisticated.
5. If David (not to have) enough computer knowledge, he (to need) to hire a qualified technician to install a LAN.
6. If your network (not to protect), unauthorized users (to break) into the system easily.
7. If the central server (to fail), the whole network (to fail).

Past Progressive vs Past Simple

3. Complete the sentences using

a. Past Progressive or Past Simple (Active Voice).
1. When we (to do) a Google Search, we (to find) the answer very quickly.
2. When Sam (to prepare) his report, he (to use) a library database.
3. They (to play) online games when we (to come).
4. When Trevor Baylis (to hear) about communication problems in Africa, he (to decide) to build a radio without batteries.
5. While Nick (to edit) complex graphics, Phillip (to develop) a new mobile application.
6. Last year he (to study) such programming languages as PASCAL and C++.
7. Which language you (to use) when you (to write) a program?

b. Past Progressive or Past Simple (Passive Voice).
1. The first mechanical adding machine (to invent) by B. Pascal.
2. The laboratory equipment (to install) all day yesterday.
3. In 1945 the concept of the stored program (to work) out by Dr. Newman.
4. While the program (to test), some bugs (to detect).
5. Different operating systems (to discuss) at 4 o'clock seminar yes- terday.
6. When the presentation on network topology (to make)?
7. The company's web site (to develop) from 5 till 7 pm yesterday.

Present Perfect vs Past Simple.

4. Complete the sentences using

a. Present Perfect or Past Simple (Active Voice).
1. John (to be) a computer technician for the last three years.
2. In September 2015 Ann (to begin) a University course in computer science.
3. I (to become) interested in computers while I (to be) at school.
4. How long you (to have) this play station?
5. The secretary (to email) three letters this morning.
6. Jenny already (to install) a new program.
7. There (to be) quite a few changes since the new owner (to come) to the company.

b. Present Perfect or Past Simple (Passive Voice).
1. The first working version of the World Wide Web (to complete) in 1990.
2. The drives (to upgrade) by Phillip recently.
3. The application (not to reinstall) yet.
4. The new system (to test) for a week?
5. When Basic (to develop)?
6. Microcomputers (to apply) since 1970s.
7. The first e-mail (to send) in 1972?

5. Correct the mistakes in the following sentences. Pay attention to the use of Simple, Progressive, Perfect (Active and Passive Voice) tense forms.

1. Marconi has invented a wireless telegraph system in 1896.
2. Since 2014 Jane was working for MediaGroup, the biggest com- pany in the region.
3. Professor Jonson was given a lecture on information technology at 11 a.m. tomorrow.
4. All the articles on biosensors will be translated by last Friday.
5. A new model of the printer is showing tomorrow.
6. System errors affects the computer or its peripherals.
7. Were they studying the operating systems next term?
8. Have you passed the exam on programming languages by 5 p.m. tomorrow?
9. We has replaced copper lines with fiber-optic cables.

10. Semiconductors were made it possible to develop much smaller portable radios.
11. The first version of Microsoft Windows were being introduced in 1985.
12. When I calling my friend he compiled a program.
13. Alexander will studied C and C ++ by next year.
14. Pavel is often being asked to make a report at conferences.

6. Complete the sentences using the correct Simple, Progressive, Perfect (Active and Passive) tense forms of the verbs in brackets.

1. A permanent storage of both data and programs (to provide) by stor- age devices.
2. In the past cars (to paint) by hand, but now they (to paint) using computer-controlled sprays.
3. Car components (to assemble) by robotic machines in modern factories.
4. Intel (to design) the first microprocessor in 1971.
5. While Pat (to analyze) the problem, Tess (to design) a flowchart.
6. After software developers (to write) a program, they (to test) it.
7. They (to study) operating systems next term?
8. The Professor (to deliver) a lecture at 10 pm tomorrow.
9. I (to discuss) these problem with our network architect as soon as I (to see) him.
10. He (to finish) the work on the term paper by next week.
11. What a choice of a programming language (to depend on)?
12. They still (to consider) the engineer`s project.
13. New methods already (to replace) traditional ways of viewing media.
14. Next week we (to buy) a new equipment for our laboratory.
15. A virtual reality program (to provide) you with multi-sensory in- formation and 3D effects in real-time?

7. Translate the following sentences into English.

1. Найпростіший та найменш дорогий спосіб поєднати комп'ютери у вашому будинку – це встановити бездротову мережу, яка використовує радіохвилі замість дротів**.**

2. Глобальні мережі з'єднують комп'ютери лініями зв'язку та програмними протоколами, дозволяючи користувачам обмінюватися даними швидко та надійно.

3. Якщо ти введеш правильний пароль, то ти маєш доступ до мережі.

4. У минулому телефонні повідомлення передавалися по металевим дротам, а зараз передаються по оптоволоконним дротам.

5. – Мій ноутбук підключається до мережі Wi-Fi, але сила сигналу дуже слабка. Що ви можете порадити? – Використовуйте свій комп'ютор максимум в тридцяти метрах від маршрутизатора.

6. – Ваші фахівці вже підключили всі комп'ютери до локальної мережі? – Ще ні. Техніки встановлювали мережу цілий день вчора, але ви знаєте, наша мережева структура вимагає великої кількості пристроїв.

7. – Ти впевнений, що всі кабелі та мережеві пристрої сумісні з твоєю мережею? – Так, я все перевірив. Я вважаю, це проблема з апаратним вузлом. – Як щодо того, щоб спочатку прочитати інструкції? – Гарна думка.

8. Компонування більшості домашніх мереж являє собою систему, засновану за допомогою закритого циклу.

9. – Які переваги дає використання локальної комп'ютерної мережі у вашому медичному центрі? – Комп'ютерна мережа дозволяє лікарям мати доступ до бази даних карток пацієнтів зі свого кабінету. Це дуже зручно.

10. Минулого тижня в нашому офісі була встановлена складна мережа, що включає сервер, мережевий апаратний вузол, кілька принтерів і ряд комп'ютерів.

11. Завдяки Wi-Fi сьогодні легко отримати доступ до Інтернету з кафе, готелю, аеропорту та інших громадських місць.

SPEAKING

1. Describe your home network using the prompts below.

I've got a wireless / wired home network.
My home network is a mixture of wired and wireless connections.
It consists of ...
Such devices as ... are connected wirelessly, the others are linked with ...
All the devices are connected to the ...
A home network allows everyone in my family to use ...
A network lets us share ...
My home network is (not) very flexible. I'd like to set up...

2. Work in pairs. Discuss the following issue:

A school with 20 stand-alone PCs is considering networking them together and adding a file server. Consider three possible benefits of doing this. Share your opinion with the group.

3. Work in small groups. Develop the following ideas about advantages and disadvantages of using networks. Share your opinion with the class.
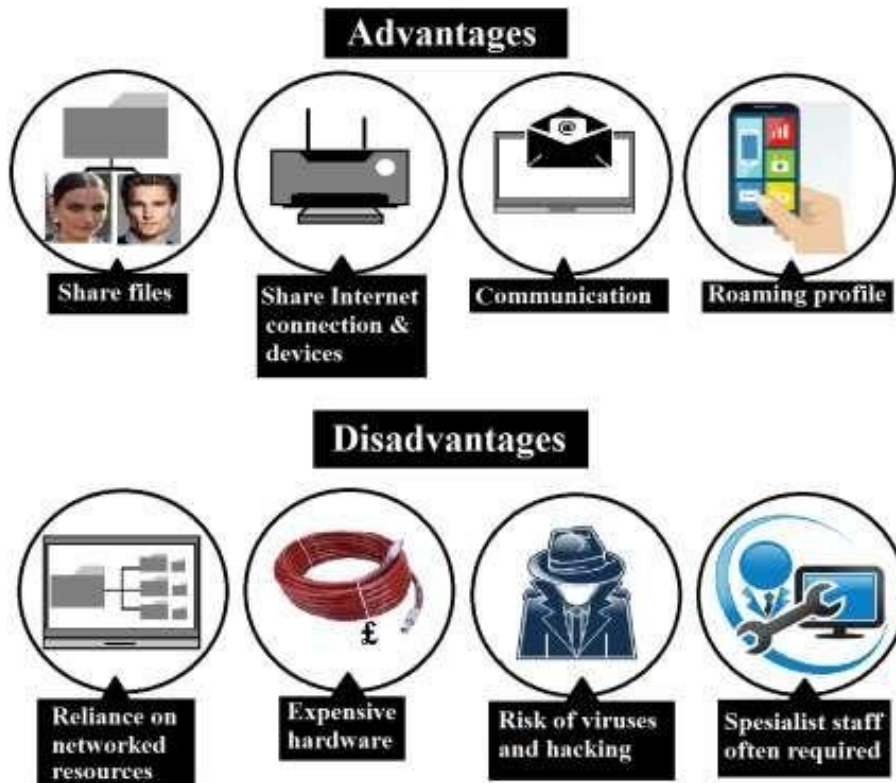

Fig. 4. Advantages and Disadvantages of Networks

WRITING

1. Work individually. Make a short summary of the text "Networks" (see page 13).

UNIT 9
THE INTERNET

GET READY

1. Study this diagram of the Internet (Fig.1). With its help, match these definitions to the correct item on the diagram.

1. A device which selects the best route to send data from one network to another.
2. A specialized computer which provides a service to a network.
3. A company which provides Internet access.
4. A large multi-user computer for processing very large amounts of data.
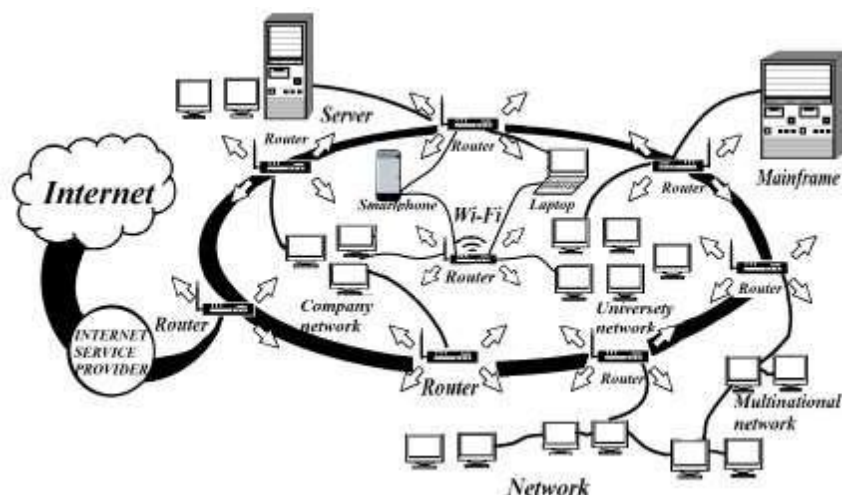5. Computers connected together to share hardware and software.

Fig.1. The Internet

2. Discuss the following questions.

1. How important is the Internet in your life? Give examples.
2. What other activities can people do on the Internet? Make a list and discuss it with your group.

VOCABULARY

1. Before reading the text match the words and definitions listed below.

1) broadband	**a)** the act of starting to use a particular plan, method
2) host	**b)** to develop and change gradually over a long period of time
3) transmission	**c)** the place that someone is going to
4) to withstand	**d)** to let someone do or have something
5) multiple	**e)** a method of sending many electronic messages at the same time, using a wide range of frequencies
6) destination	**f)** the process of sending out electronic signals, messages etc.
7) adoption	**g)** many, or involving many things, people
8) to evolve	**h)** to move from one place to another
9) to allow	**i)** to be strong enough to remain unharmed by great heat, cold, pressure
10) to transfer	**j)** the main computer in a network of com- puters; any computer connected to the Internet

2. Match the words having a similar meaning. Check any unknown words in a dictionary.

1. To allow	a. To develop
2. To withstand	b. To transmit
3. To link	c. To let
4. To evolve	d. To recognize
5. To search for	e. To communicate
6. To transfer	f. Growth
7. To identify	g. To integrate
8. To interact	h. To resist
9. Increase	i. To connect
10. To incorporate	j. To look for

READING

1. Scan the text and match the headings (a-d) with the paragraphs (1-4).

a. Components of the Internet.
b. The origin of the net.
c. What the Internet is.
d. How the net works.

THE INTERNET

1. The Internet is a global network connecting millions of computers. The largest number of Internet users is in China, followed by the United States and India. In the early days, most people just used the Internet to search for information. Today the Internet helps many people communi- cate, work, learn, and have fun.

2. The Internet enables computers to send one another small packets of **digital data**. For that to work, they use a common 'language' called TCP/IP (Transmission Control Protocol / Internet Protocol). If you are on the net, you have an **IP address**. This address is a way to identify a com- puter on the Internet. Packets of Internet data are transmitted through a variety of cables, **routers** and host computers on the way to their destina- tion.

3. The Internet began in 1969 as ARPAnet, a U.S. Department of De- fense project to create a computer network that could withstand a nuclear war. During the next two decades, the network that evolved was used mainly by universities, scientists and the government for research and communications. The nature of the Internet changed in 1992, when the U.S. government offered Internet **access** to the general public. The number of users grew rapidly into the millions and then hundreds of millions. The main reasons for this massive increase were the huge growth of the per- sonal computer market, the invention of the World Wide Web by Tim Berners-Lee in the early 1990s, and the widespread adoption of **broad- band** in the 2000s.

4. The Internet consists of multiple data systems. The most popular and important systems are:

➢ WWW, the World Wide Web, a collection of files or pages contain- ing **links** to other documents on the Internet. Most Internet services are now integrated on the Web. E-mail, or electronic mail, for the exchange of messages and **at- tached files.**

➢ Mailing Lists are a combination of e-mail and discussion groups. Subscribe to a list and messages are distributed to your e-mail box.

➢ Instant messaging (IM), a system for sending public and private messages to other users in real time over the Internet. You can chat pri- vately with a friend, family member or business colleague. The latest IM programs also incorporate telephone, video and file-sharing facilities and are becoming an alternative to traditional video conferencing programs. The most popular instant messaging services include Skype, Whats App, Viber, Telegram, etc.

➢ File Transfer Protocol (FTP), a system for transferring data files be- tween computers via the Internet.

➢ Video conferencing, a system that allows transmission of video and audio signals in real time, so users can exchange data, talk and see one another on the screen. Some services also let you do video conferencing, such as Skype and Facebook Video Calling.

➢ VoIP (Voice over Internet Protocol), or Internet Telephone, a sys- tem that lets people make **voice calls** over the Internet. .

2. Read the text again and decide if the following statements are true or false.

1. The Internet is a network of networks.
2. The largest number of Internet users is in the UK.
3. Computers need to use the same File Transfer Protocol to communi- cate with each other.
4. Every computer connected to the Internet is given a unique address or IP number.
5. The Internet began as a military experiment.
6. The huge growth of personal computer market was one of the rea- sons for rapid growth of Internet users.
7. Tim Berners-Lee invented a broadband technology in the early 1990s.
8. Mailing Lists are based on programs that send messages on a certain topic to all the computers whose users have subscribed to a list.
9. Many IM services now offer audio and video capabilities.

3. Complete the sentences with the words in bold from the text. You may have to change some words slightly.

1. By clicking on a ___, you might be taken to another website.
2. Traditionally, telecoms companies make most of their profits from ___.
3. It's possible to store a lot more ___ on a DVD.
4. The ___ will connect your computer to the Internet via your phone line.
5. With the e-mail we received some _ _ _ .
6. Most public libraries provide free ___ to the Internet for library members.
7. With ___, you can watch live news and sport, download and share large files quickly.
8. In order to be able to connect to the Internet a computer needs an ___.

4. What Internet system from paragraph 4 should these people use?

1. I don't want to spend too much money on international phone calls, so I've found a cheaper way to talk to my friend from Canada.
2. I like receiving daily updates and headlines from newspapers on my computer.
3. I want to read people's opinions about current sporting events and express my views.
4. I'd like to check my students' draft essays on my computer and send them back with my suggestions.
5. I have designed a web page and want to transfer the data to my re- served web space.
6. I'd like to avoid flying to Hong Kong to attend the meeting but I want to see what's going on there.

GRAMMAR FOCUS
WORD BUILDING: PREFIXES

We can form new words by using prefixes and suffixes,

e.g. **micro-process-or**

    prefix + root+ suffix

Prefixes come before the root word and usually change its meaning. Here are some common ones in IT.

Study the 'Prefixes of location'

Prefix	Meaning	Examples
trans-	**= across**	transmission, transfer
inter-	**=between**	interconnected,interactive
intra-	**= within**	intranet
extra-	**=beyond** **=outside** **=in addition to**	extramemory, extranet
tele-	**= over a distance**	teleconferencing, teleworking

1. Use the words from the table 'Prefixes of location' to complete these sentences and make any necessary changes.

1. Data____can be wired or wireless.
2. An ___is a private network restricted to a company's internal use.
3. The Internet consists of millions of computers ____in a global net- work.
4. ___enables users in different places to talk to and see each other.
5. ___(e.g. ROM or flash memory) is able to hold data when switched off.
6. ___is increasing, so more and more people have an office at home and aren't commuting to an office.
7. __is a network that allows communication between a company and the customers it deals with.

Study the 'Prefixes of size'

Prefix	Meaning	Examples
multi-	**=many**	multimedia, multitasking
mega-, giga-	**=large**	megabyte, gigabyte
super-	**=large, great**	supercomputer
micro-	**=very small**	microbrowser
semi-	**=half, partly**	semiconductor

2. Use the words from the table 'Prefixes of size' to complete these sentences and make any necessary changes.

1. ___is a web browser designed for small screens or hand-held devices.
2. A ___ equals approximately one million bytes.
3. ___is an action when you have more than one application open at the same time.
4. The introduction of ___ technology revolutionized the computer in- dustry.
5. A ___is a powerful computer that can process large amounts of data very quickly.
6. Each memory module contains a____of RAM, or 1024 megabytes, to be precise.
7. The next generation of computers will be ___machines that allow users to control and manipulate sound, video, text and graphics.

Study the 'Negative prefixes'

Negative prefix	Meaning	Examples
un-	=not	unmagnitized
in-		incomplete
im-		impossible
il-		illegal
ir-		irregular
non-		non-programmable
mis-	=bad, wrong	misuse, misunderstand
mal-		malfunction
dis-	=opposite action	disconnect
de-	=reduce, reverse	decode, decrypt, debug
down-	=to show that sth is bad or to make sth less important	downtime, downgrade

Study other common prefixes in IT

Positive prefix	Meaning	Examples
re-	=do again	reorganize, reboot
co-/ com-/ con-	=with	connect, compatible
over-	=too much	overload
Positive prefix	Meaning	Examples
up-	=at or to a higher level of activity	update, upgrade, upload
e-	=electronic	e-book, e-learning
cyber-	=things related to computer world	cyberspace, cybercriminal

3. Match the prefixes in column A to the correct endings in column B.

column A	column B
DOWN-	-reader, -commerce, -mail
RE-	-time, -load
E-	-crime, -space, -slacking
UP-	-write, -boot, -set, -usable
CYBER-	-grade, -date, -load

4. Complete these definitions with the words from Exercise 3.

1. ___is to modify data in a file so that it has the most recent infor- mation.
2. ___ is the buying and selling of products and services over the Internet.
3. ___s when a network or a computer is not working or unavailable for use.
4. ___is to start the computer again.
5. ___is the environment in which communication over computer net- works occurs.
6. ___is to add or replace hardware or software in order to expand the computer's power.
7. ___is using a company's Internet access for activities which are not work-related, e.g. emailing friends, playing games, etc.

5. Fill the gaps with the correct prefix from the box.

ir- , in- , up-, re- , dis- , down-, de- , con-

1. The printer was not working because someone had___ connected it by mistake.
2. As the results are___regular, the program will have to be___written.
3. Flash drives are ___expensive and ___usable.
4. Once you finish your program, you will have to test it and___bug to remove all the mistakes.
5. If your mobile device has an Internet ___ connection, you can___load apps directly onto it.
6. Did you buy a full version of the OS or just an___grade?
7. If your computer crashes, you may have to ___boot it.

6. Translate the following sentences into English.

1. Інтернет надає доступ до неймовірної кількості інформації.
2. – Який інтернет-браузер ти використовуєш? – Я віддаю перевагу Гугл Хром, так як він, з моєї точки зору, найнадійніший.
3. В Інтернеті комп'ютери з'єднані один з одним мережею телефонних ліній, кабелів або супутників.
4. Для чого використовується маршрутизатор? – Він дозволяє вам створити бездротову мережу.
5. Коли ви шукаєте що-небудь в Інтернеті, ви подорожуєте у кіберпросторі.
6. З тих пір як у нас з'явилося широкосмугове Інтернет-з'єднання, ми дивимося музичні відео в мережі.
7. Кращий спосіб підтримувати зв'язок з друзями або родиною – це використовувати різні системи миттєвих повідомлень.
8. Якщо ви маєте доступ до Інтернету, ви можете читати новини та перевіряти прогноз погоди у мережі, грати в інтерактивні ігри та робити покупки через Інтернет.
9. – Скільки часу потрібно, щоб завантажити цей відео файл з мережі? – Все залежить від швидкості Інтернету та розміру файла.
10.– Як передати дані через інтернет? – Спочатку, за допомогою між мережевого протоколу файл необхідно розділити на невеликі частини даних, відомих як пакети даних, потім інформація оновлюється, як тільки досягає місця призначення.
11.Рідер – це пристрій, який вміщує тисячі електронних книг, а це набагато легше за більшість паперових аналогів.
12.Останнє, що вам необхідно зробити – це перевстановити пароль.

SPEAKING

1. Ask your partner what Internet service he / she uses and why?

Example:
- Do you use e-mail?
- Yes, I sometimes send attachments by e-mail. And you?
- I just leave my e-mail while filling any application form. I prefer using … to stay connected with my family or friends.
- Yes. It's very useful. Personally I …

2. Work in groups. Say which of the following ideas about the In- ternet may be considered as advantages and disadvantages. Think of any other pros and cons of the Internet.

Public facility ■ worldwide ■ expensive to buy computers ■ the in- formation may not be true or correct ■ spend too much time playing games ■ make free calls ■ visit many interesting websites ■ wait for a long time to download web pages ■ make new friends ■ downloading software may contain viruses.

3. Split into four groups and get ready to speak on one of the is- sues given below.

1. The definition of the Internet.
2. How the Internet works.
3. The origin of the Internet.
4. Major components of the Internet.

WRITING

1. Work individually. Make a short summary of the text "The Internet" (see page 13).

UNIT 10
THE WORLD WIDE WEB

GET READY

1. Study the diagram (Fig. 1) and match the terms Internet, World Wide Web and Intranet to their definitions.

1   a system of interlinked hyper- text documents accessed via the Internet
2   a private network within an or- ganization which provides access to files and applications among net- worked computers and servers
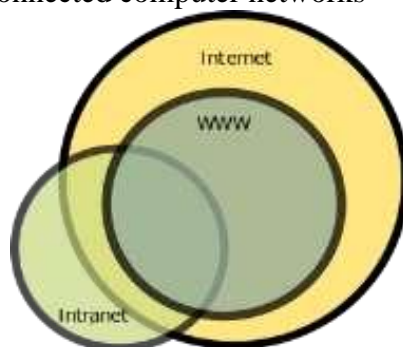3   a global system of interconnected computer networks

Fig. 1. Internet, Intranet, WWW

2. Discuss the following ques- tions.

1. According to the diagram what is the relationship between the In- ternet and the World Wide Web (Fig. 1)?
2. Do Intranet users have access to the Internet?
3. What is the difference between the Internet and the Intranet?

3. Most information on the Internet is on websites. Which features from the list below would you choose to make a good website? Give reasons for your choice.

1. Simple and user-friendly navigation.
2. Complex design and a lot of animation.
3. Fast-loading pages.
4. Brightly-coloured text.
5. Minimal scroll.
6. Fresh content.
7. Low resolution photography.
8. Cross-platform / browser compatibility.

4. Describe a website you like using and say why you like it.

VOCABULARY

1. Before reading the text match the words and definitions listed below.

1) to navigate	**a)** installed before
2) search engine	**b)** when two things can be used instead of each other
3) versatile	**c)** very advanced, complicated
4) pre-installed	**d)** closely connected or appropriate

5) content	**e)** to move from one website to another
6) query	**f)** a specialized website that's designed to help you find other websites
7) sophisticated	**g)** having many different uses
8) bookmark	**h)** information contained in a website
9) relevant	**i)** the space provided in a browser for typing the Internet address
10)interchangeably	**j)** a record of the address of a website which enables quick access in future
11)address bar	**k)** a question that you ask to get information

READING

1. What do the abbreviations URL, HTML, HTTP, CSS, PHP stand for? Read the text and check your answers.

THE WORLD WIDE WEB

Nowadays, the terms "Internet" and "World Wide Web" are often used interchangeably—but they're actually not the same thing. The Internet is the physical network of computers all over the world. The World Wide Web is a virtual network of websites connected by hyperlinks. Websites are stored on servers on the Internet, so the World Wide Web is a part of the Internet.

A web browser is a kind of application you use to access the World Wide Web. Any Internet-connected device like a laptop, tablet or smartphone should come with a browser pre-installed. PCs come with Internet Explorer, and Macs come with Safari. If you prefer to use a differ- ent browser, you can download Firefox, Google Chrome, or Opera. Web pages are written with a simple coding system, called HTML (Hypertext Markup Language). A browser takes the HTML and translates it into the content you see on the screen. Websites often have links to other sites, also called hyperlinks. A web browser lets you navigate from one link to another. It also allows you to create bookmarks (or Favorites) for sites you like.

To get to a webpage, you can type the URL (Uniform Resource Loca- tor) into the browser address bar. The URL, also known as the web ad- dress, tells the browser exactly where to find the page. However, most of the time, people get to a webpage by following a link from a different page or by searching for the page using a search engine. If you type keywords or a phrase into a search engine, it will display a list of websites relevant to your search terms. A set of transfer rules, called HTTP (Hyper Text Transfer Protocol) is used to link Web files together across the Internet. This is why web page addresses begin with *http*, followed by a colon and two slashes.

Today, many web pages are not written in advance, but created dynam- ically in response to someone's input. This happens to answers to search- engine queries and, for example, on shopping sites where people search for products within specific price ranges. As websites are becoming more sophisticated, web developers are using many more versatile tools. These include CSS (Cascading Style Sheets) and scripting languages such as Ja- vaScript and PHP (Hypertext Preprocessor) [9,10].

2. Test your knowledge by taking a brief quiz about the World Wide Web.

The WWW Quiz

1. The World Wide Web and the Internet are synonyms.
   a. Correct.
   b. Incorrect.

2. Web browser is a (an) _____ used to access the Internet services and resources available through the World Wide Web.
- a. Operating system.
- b. Program.
- c. Peripheral.
- d. Media.

3. Websites are stored on a __.
- a. Modem.
- b. Search engine.
- c. Server. Hub.

4. Select the web browser from the list given below.
- a. Yahoo!
- b. Yandex.
- c. Microsoft Outlook.
- d. Google Chrome.

5. The URL is usually typed in a browser_.
- a. Scroll bar.
- b. Menu bar.
- c. Address bar.
- d. Pop-up menu.

6. The words you type into a search bar are known as _ _ .
- a. Search suggestions.
- b. Search terms.
- c. Cookies.
- d. Plug-ins.

7. The protocol which is used to connect Web files together across the Internet.
- a. URL.
- b. DSL.
- c. HTTP.
- d. FTP.

8. Which browser comes with Apple products?
- a. Netscape.
- b. Opera.
- c. Firefox.
- d. Safari.

9. Browser allows you to create _____ for sites you like.
- a. Queries.
- b. Protocols.
- c. Bookmarks.
- d. Web pages.

10. What is not always necessary for accessing the Web?
- a. A web browser.
- b. A modem.
- c. An Internet connection.
- d. A computer.

3. In the text find the words having a similar meaning to these words.

To surf, in answer, internet-enabled, complicated, to transmit, ques- tion, to look for, all-round, to save (keep), pre-loaded, to produce.

4. Using the words in the box complete these instructions about the process of navigation.

> web page, search engine, web browser, client, URL, website, surf, web server

1. Start up your computer and connect to the Internet.
2. Open your _ _ _ _   _ _ _ _ .
3. Type the____to access a website.
4. Your web browser sends the request to the correct _____.
5. The server looks for the document and sends it to the___ com-puter.
6. Your web browser displays the selected_____ on the screen.
7. From the home page of the___you can ___to other pages by clicking on hyperlinks.
8. If you want to find more websites use a_____.

GRAMMAR FOCUS
WORD BUILDING: SUFFIXES

Suffixes change the class of the root word. For example, by adding the suffix **–er**, the verb *produce* becomes the noun *producer*. Suffixes can tell you if a word is a noun, adjective, verb or adverb.

Study the 'Suffixes for jobs'

Suffix	Meaning	Examples
-er	**=a person who**	webmaster, manufacturer
-or	~	computer animator
-ist, -yst	~	systems analyst
-ian	~	computer technician
-ant	~	IT consultant
-eer	~	software engineer

1. Which IT professionals from the table the 'Suffixes for jobs' are described here?

1. A person who designs and maintains software applications.
2. A person who gives expert, professional advice.
3. A person who uses graphics software to make or edit animated pictures.
4. A person or enterprise that produces goods in large numbers, using machines.
5. A person who manages and maintains a website.
6. A specialist in the technical details of computers.
7. A person who studies organizational systems and decides what ac-tion needs to be taken to maximize efficiency.

Study the 'Noun-forming suffixes'

Suffix	Meaning	Examples
-ion, -ment, -ics, -ity, -or	**=activity, state** **= a thing which**	Compression, measurement, robotics, electricity, compiler

Study the 'Verb-forming suffixes'

Suffix	Meaning	Examples
-ize / -ise	**=to make**	computerize
-ate	**~**	activate, calculate
-ify	**~**	simplify

Study the 'Adjective-forming suffixes'

Suffix	Meaning	Examples
-able, -ible	**=capable of being**	programmable, convertible, compatible
-ful	**=characterized by**	colourful, helpful
-less	**=without**	careless
-al, -ic, -ical	**=having the quality of**	computational, digital, magnetic,

Study the 'Adverb-forming suffix'

Suffix	Meaning	Examples
-ly	**=in the manner of**	digitally, electronically,

2. Complete each sentence using the word in brackets and the cor- rect suffix.

1. Laser__are __ to other types of printing devices because of their speed. (PRINT, PREFER)
2. Most library databases are ___via the Internet. (ACCESS)
3. We decided to___the entire plant to give each department more independence. (COMPUTER)
4. I'll email my report to you as an ___ (ATTACH)
5. An___optical disc allows data to be deleted and new data to be recorded on it. (ERASE)
6. The growth of the Internet has increased the need for effective data ___. (SECURE)
7. Bluetooth is a ___technology designed to connect computers, mo- bile phones and other devices, replacing direct cable links. (WIRE)
8. Aircraft flight ___is used to train pilots. (SIMULATE)
9. Sound and pictures can be stored___, as on a CD. (DIGIT)
10. Anti-virus software can detect viruses on ___ media, such as flash drives. (REMOVE)

3. Translate the following sentences into English.

1. З головної сторінки веб-сайту ви можете переміщатися по ньому, натискаючи мишею на гіперпосилання в тексті або на зображення.
2. Зміст електронного повідомлення зазвичай включає текст, а також прикріплені зображення, аудіо-, відео- та програмні файли .

3. Якщо у вас є будь-який пристрій, що підтримує Інтернет, вам залишається тільки відкрити браузер та почати перегляд у мережі.

4. Електронна пошта – це один з найстаріших й найбільш універсальних засобів, щоб спілкуватися та обмінюватися інформацією в Інтернеті.

5. У вас зазвичай будуть просити назвати адресу електронної пошти при замовленні квитків і готелю по Інтернету або при заповненні будь - якої форми заяви.

6. – Що тобі не подобається у цьому сайті? – Він повільно завантажується і має чорний фон тексту.

7. Деякі сайти магазинів використовують віртуальну реальність, щоб рекламувати свою продукцію у мережі.

8. Цей принтер повністю сумісний з будь – яким провідним програмним забезпеченням.

9. Сьогодні існує тисячі різних пошукових систем доступних в Інтернеті.

10. Небезпечно відкривати поштові повідомлення від невідомих відправників. Вони можуть містити віруси.

SPEAKING

1. Put the verbs in the dialogue in the correct tense form: Past Simple or Present Perfect. Practice the dialogue with your partner.

A: What (do) today?
B: I (work) on my project. I (search) the Web for sites on e-readers.
A: (find) any good ones?
B: I (find) several company sites – Amazon Kindle, Kobo, Pocket- Book, … but I (want) one which (compare) all the models.
A: Which search engine you (use)?
B: Yahoo!. You (ever use) it?
A: Yes, I (try) it but I (have) more luck with Ask Jeeves. Why don't you try it?
B: I (have) enough for one night. I (spend) hours on that project.
A: I (not start) on mine yet.
B: Yeh? I bet you (do) it all.

2. Interview your partner about his / her using the Internet. First, put the words in the questions in the correct order.

A: Is / your / ISP / who / current?
B: It's …..
A: You / any / have / problems / with / had / them? If so, what?
B: …...
A: Connection / what / of / type / have / you / do / Internet?
B: ……
A: Requirements / is / enough / it / for / fast / your?
B: ……
A: On average, many / do / a day / how / you /hours / online / spend?
B: I usually spend …… I chat with my friends, ……

3. Read a short text about E-mail and study the way we say e-mail addresses (Fig. 2).

An Internet e-mail address has a user name, the @ (at) symbol, and a domain name. The user name is the name you choose. The domain name has two parts separated by a dot (.). The first part is the network that re- ceives the e-mail and the second is the top-level domain (TLD) which shows the type of organization, such as commercial (.com) or educational (.edu). Sometimes the TLD is a country code, such as .it (Italy).
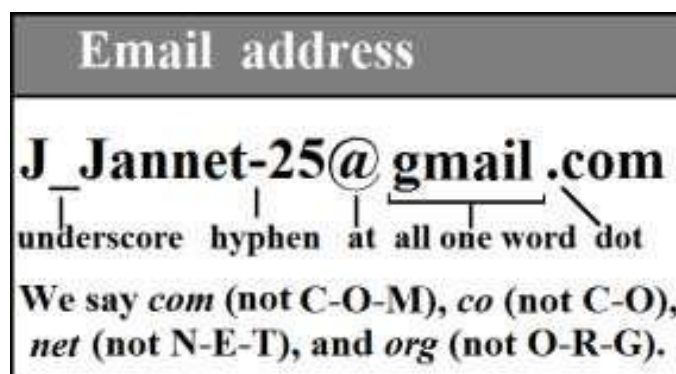

Fig. 2. Email address

4. Say these e-mail addresses.

1. s_luc@redtop.com.fr.
2. wills547@yahoo.co.uk.
3. client-info@tech.store.com.de.
4. n.tigers@callserve.com.
5. mary-jones@hotmail.co.uk.
6. peter_smith3648@gmail.ru.

5. Work in groups. One person says their e-mail address. The others write it down.

WRITING

1. Work individually. Make a short summary of the text "The World Wide Web" (see page 13).

GET READY

1. Identify the Internet threats 1-7 with the pictures a-g (Fig.1).

1. Virus. 2. Worm. 3. Phishing. 4. Trojan. 5. Spyware. 6. Spam. 7. Scareware.

Fig. 1. Internet threats

2. Discuss the following questions.

1. Have you ever had a virus on your computer? Did it damage yourPC?
2. What do you do to prevent computer infections?
3. Why is it important for large organizations, like banks, to have a network security system?

VOCABULARY

1. Before reading the text match the words and definitions listed below.

1) malicious	**a)** physical harm that is done to an object
2) malware	**b)** who you are, your name , date of birth, etc.
3) damage	**c)** to cause great fear, frighten
4) identity	**d)** to make sth unrecognizable by changing its appearance
5) threat	**e)** intended to do harm
6) to pretend	**f)** an illegal trick with the purpose of getting money from people
7) to scare	**g)** malicious software
8) to spread	**h)** a computer system or program that automati- cally blocks an unauthorized access to a computer when it is connected to the Internet
9) scam	**i)** to claim that sth is true, when it is not
10) to disguise	**j)** to convert data into a special code to prevent unauthorized access

11) to replicate	**k)** a danger that sth unpleasant might happen to people
12) to prevent	**l)** to gradually reach a larger area or more people
13) to encrypt	**m)** to stop sth from happening
14) firewall	**n)** to make an exact copy, reproduce

2. Match the words with a similar meaning. Check any unknown words in a dictionary.

1. To delete
2. Malicious
3. Charges
4. To replicate
5. Scam
6. Identity
7. Secure
8. Damage

a. Expenses, costs
b. To duplicate
c. Harm
d. To remove
e. Safe
f. Harmful
g. Fraud
h. Personal information

READING

1. Go through the text to find this information about.

a) malware which pretends to be something harmless;
b) malware which copies itself;
c) email which pretends to be from a bank;
d) fake security warnings;
e) malware which collects various types of personal information.

2. Read the text carefully. Then test your knowledge by taking a brief quiz about Internet Security.

INTERNET SECURITY

The online world is an amazing place but, like real world, there are some risks. There are a number of malicious software (malware) programs that can cause damage to computers or collect information without your knowledge. These include viruses, worms, Trojans, spyware and other malware. Malware is often downloaded from spam emails or websites that are not properly protected. A secure website usually starts with *https://* where the 's' stands for a secure web server.

Some malware is designed to copy itself and spread to other connected computers. This type of malware is known as a virus. In computers, the virus spreads by infecting files on a shared space like a network file system or by email, downloaded from the Internet or from removable medium like a USB stick, CD or DVD.

Computer worms are similar self-replicating programs, except they can spread without human help. There are other harmful computer programs that can be part of a virus, but they do not have the ability to replicate. For example, spyware. This type of malware spies on users' activities, usually to steal financial details or passwords.

A Trojan is a type of malicious program that pretends to be a trusted file. A Trojan pretends to be something interesting and harmless, such as a game, but when it runs it may have harmful effects.

Malicious links disguised as security warnings have become a popular tactic with cybercriminals. These official-looking notices warn you that your computer has a virus and try to scare you into clicking the link or download a program to fix it, but in reality the link leads to malware. The word for this type of scam is scareware.

Viruses and other malware are often included in spam. It is another term for unwanted email advertisements. Many spam emails aren't trying to sell you something – they're trying to steal your

money or personal information, like phishing emails. Phishing is a type of scam in which an email pretends to be from a bank or from a social networking site to trick you into giving out personal information. For example, a phishing email may claim that "unauthorized charges" were made on your credit card and that you need to immediately verify your information. The details are then used to steal people's money, or steal their identity in order to commit crimes.

The best defense against Internet threats is good antivirus software. It checks all the files that come in and out of your computer. If it finds mal- ware, it safely removes it. To remain effective, antivirus software must be regularly updated. Another important part of protecting your computer is using a 'firewall'. A firewall checks which websites and malware are try- ing to access your computer and helps prevent any unauthorized access. Most operating systems have built-in firewalls, however, make sure they are turned on.

There are a few other things you can do to protect yourself when you're online:
➢ Don't open any attachment you weren't expecting.
➢ Make backup copies of your files regularly.
➢ Use strong passwords for all your Internet accounts.
➢ Avoid using public Wi-Fi for shopping and banking to keep your payment details safe .

3. Do a brief quiz below to test your knowledge about Internet Se- curity.

Internet Security Quiz

1. Viruses, worms, and Trojans are all examples of _ .
   a) pets that can be seen in a zoo;
   b) phishing;
   c) malware;
   d) scareware.
2. What is malware?
   a) hardware that controls a computer without the user's knowledge;
   b) faulty software;
   c) hardware that detects and removes viruses from a computer;
   d) software created to cause harm to a computer system or data.
3. What is a virus?
   a) a program that makes user feel unwell;
   b) a program which replicates itself and spreads to other computers via attachments;
   c) a program that monitors user's activities;
   d) a program that stops a computer from working.
4. Malware can be downloaded through _ .
   a) spam emails;
   b) infected computers;
   c) unsafe websites;
   d) all above.
5. What is spyware?
   a) malware that harms your computer by deleting or altering files and stopping programs from running;
   b) malware that tricks you into thinking it's software you need to buy;
   c) malware that collects information from a computer and sends it to cybercriminals;
   d) malware that pretends to be a trusted file.
6. What is the purpose of phishing?
   a) controlling computer without user's knowledge;
   b) sending a program that replicates itself and spreads to other com- puters via attachments;
   c) sending a malicious link disguised as a security warning;
   d) sending an email that is designed to trick the user into giving away personal information.

7. What should be used to remove malware from a computer?
   a) a filter;
   b) antivirus software;
   c) encryption;
   d) a firewall.
8. How can one safeguard against phishing?
   a) Install a firewall.
   b) Don't believe everything you read on the Net.
   c) Make backup copies of your files regularly.
   d) Don't follow a link from the email you don't trust.
9. What is the purpose of a firewall?
   a) to detect viruses on a system and prevent them from attacking it and spreading;
   b) to prevent unauthorized connections coming into and out of a network;
   c) to prevent from illegal copying and distribution of copyrighted software, information, music, etc.;
   d) to prevent a hacker from logging on to the computer.
10. Which of the following is a simple way to stay safe online?
   a) Don't open email attachments from unknown people.
   b) Run and update antivirus programs.
   c) Don't give out personal information.
   d) All above.

4. Match the words that go together in the text "Internet Security". Check that you know the meanings of the phrases. Then complete the sentences below.

1) commit	a) program
2) unauthorized	b) firewalls
3) phishing	c) access
4) antivirus	d) email
5) security	e) information
6) self-replicating	f) crimes
7) built-in	g) software
8) verify	h) warning

1. Virus is a___that interferes with a computer's hardware or operat- ing system.
2. Some computers come with security software. Windows 7 and Mac OS X already have__.
3. __can protect you from infected email attachments, Internet worms, and fake websites.
4. Cybercriminals ___ by stealing people's money or their identity data.
5. ___is disguised to look like official communications from a legiti- mate website.
6. Once installed, spyware programs can have ___to user's activities – such as Internet surfing habits and browser activity.
7. If you ___about your identity on a fake website, scammers can use these details to withdraw money from your bank account.
8. When you visit a malicious site your browser will display a red ___ message.

GRAMMAR FOCUS
MODAL VERBS

Modal verbs show the speaker's attitude or feelings about a situa- tion. Modal verbs are ***can, could, may, might, must, have to, need, ought to, will, would, shall, should, etc.***

➢ Modal verbs are followed by the infinitive without ***to***, (except for
ought to, have to, to be to). *Sorry, I can't come. I have to meet Nick.*

➢ Modal verbs come before the subject in questions and are fol- lowed by ***'not'*** in negations (except for ***have to***). *Could I use your computer? You shouldn't send sensitive data over the network. I didn't have to scan all the files yesterday.*

➢ Modal verbs take **no – s** in the third person singular (Present Sim- ple) (except for ***have to***). *Tom must use a strong password. Jane has to check her spam folder regularly not to miss an important email.*

1. Choose the correct item.

1. *Can you / Do you can* install the latest antispyware program?
2. I *can to / can* follow the link contained in the email.
3. *Do I should / Should* I keep my antivirus software updated?
4. Sorry that I didn't could / couldn't come to the meeting last week.
5. *Should a secure site / Does a secure site should* start with https://?
6. IT security specialists *must be / must to be* experts in their field.
7. I don't remember my password, I *have create / have to create* a new account.
8. Malware *may / mays* harm your computer.

Modal verbs are used to express:

a. Ability
Can / Be able to (ability in the present / future)
*A virus **can** damage files on your computer. **I will be able** to speak perfect English very soon.*
Could / Was / were able to (= managed) (ability in the past) are both used for either repeated or single actions.
*She **could** / **was able to** dance for hours when she was young. (repeated action)*
*He couldn't / **wasn't able to** pass his driving test. (a single action)*

2. Fill in: can / can't, could / couldn't, was / were / wasn't able to, will / won't be able to. More than one option is possible.

1. What ____ we do?
2. Phillip ____come to the meeting next week because he's fallen ill.
3. Oh no, my battery's dead! I ____use the laptop.
4. Claire tried but she __ delete the virus.
5. When Alice was five she ____read and write.
6. It took all evening but I ____scan all the files.
7. Although there was traffic, we ____get to the conference on time.
8. Paul ____use online banking but he doesn't do it very often.

b. Possibility / Probability
May / Might / Could + Simple Infinitive = perhaps. It's possible that something will happen in the future or perhaps it's true at the moment.
*Pete **may / might / could** pass his test this time. (It's possible that he will pass his test).*
Might is the past form of **may. Might** can also be used for present situations.
*A public Wi-Fi connection **might** be unencrypted.*
Should / Ought to + Simple Infinitive = something is probable now or in the future.
*Tom **should / ought to** pass his exams.*

c. Asking for permission, giving and refusing permission Can (informal) / **Could** (more polite)

*Can / Could I delete this file? Of course you **can**. / I'm afraid you **can't** / **mustn't**.*
May / Might (very formal)
*May / Might I see your driving license, please? Certainly you **may**./*
*No, I'm afraid you **may not**.*

d. Request / Offer / Suggestion
Can (informal request) *Can you help me?*
Could (polite request) *Could you help me with the encryption pro- gram?*
Would you like (polite offer) *Would you like the latest update?*
Shall I / we, Can I / we (Do you want me / us to …?) (informal offer / suggestion)
Shall I help you with your computer's security?
Shall we install a new antivirus?

3. Fill in: can / could, may / might, shall, would you like. More than one option is possible.

1. ___I have your name, please?
2. ___to come with us for a coffee?
3. Spam emails___encourage you to click on links to unsafe websites.
4. – Are you having problems with the Internet connection? ___I help you?
5. – ___ I use your password? – I'm afraid you _.
6. ___you please check my computer for viruses?
7. – Are you going out this evening? – We're not sure. We___stay at home.
8. – ___ I phone my father? He's a computer expert. – No thanks.

e. Advice / Obligation / Necessity / Prohibition
Should + Simple Infinitive (= It is the best thing to do; I advise you to do it) *You should create a strong password* (general advice).
You **shouldn't** do something. = It isn't a good thing to do.
*You **shouldn't** trust everything you read on the Net.*
Had better (=It's a good idea – strong advice for a specific situation).
I think you'd better call them straightaway.
Must (strong obligation, duty or personal feelings of necessity = It's necessary; I'm obliged to).
*You **must** stop when the traffic light is red. I **must** see a doctor.*
Have to (obligation or external necessity = It's necessary; I'm obliged to).
*You **have to** pay the bill by the end of the month* (that's the rule).
Must is used only for present and future situations. **Have to** is mostly used for past situations instead of **must**. To form questions and negations of **have to** we use **do / does** (Present Simple) and **did** (Past Simple).
*Did you have to stay late at work yesterday? Yes, **I had to** email some urgent letters.*
Need (modal verb) / Need to (It's necessary = have to).
*Need I pay now? Unfortunately, I **need to** work this evening.*
Needn't + Simple Infinitive = don't have to = don't need to (it's not necessary to do sth in the present or future).
*You **needn't** take an umbrella. It isn't raining. You **don't have to** /*
don't need to do it now. You can do it later. **Mustn't** (= it's forbidden; don't do it). *You mustn't be late for the meeting.*
Can't (= you aren't allowed to). *You **can't** enter the account without a password.*

4. Rephrase the sentences using modal verbs.

Example: It's a good idea to back up the files. You'd better back up the files.

1. I advise you to transfer files via a secure connection.
2. Do not download unknown files.
3. Students are obliged to be on time for all their classes.
4. It isn't a good thing to open email attachments from people you don't know.
5. I advise you to turn on a firewall.
6. You don't need to contact technical support. Jim has already called them.
7. It's necessary to use mail encryption to send sensitive data.
8. It is the best thing to keep your antivirus software updated.
9. It's a good idea to set user access levels on your laptop.
10. You are not allowed to make any changes to the system.
11. Don't use a public Wi-Fi for shopping and banking.
12. It's necessary for you to create a strong password to stop criminals from accessing your private information.

5. Correct the mistakes.

1. I have email some urgent letters.
2. You can't to access the network.
3. You don't must be late for the exam.
4. Sasha can't remove malware from his computer yesterday.
5. Do I could use your laptop?

6. Translate the following sentences into English.

1. Існує ряд Інтернет загроз, з якими ми можемо зіткнутися у мережі: крадіжка особистих даних, шпигунське програмне забезпечення, фальшиві антивіруси та інші шкідливі програми.

2. Гарне антивірусне програмне забезпечення повинно пропонувати захист у режимі реального часу.

3. – Що може заблокувати несанкціонований доступ до комп'ютера з мережі? – Ймовірно це , брандмауер.

4. Одного разу, встановивши антивірусне програмне забезпечення, вам необхідно оновлювати його регулярно.

5. – Я не впевнений, який антивірус підійде для мого комп'ютера. Що ви можете мені порадити? – Спробуйте завантажити безкоштовну пробну версію ось цього програмного забезпечення. Воно надає захист високого рівня без уповільнення роботи вашого пристрою.

6. – Тобі б краще зробити резервні копії твоїх файлів в мережі, іншими словами, в хмарі. – Яка різниця? – Коли ти зберігаєш інформацію в хмарі, вона зберігається на сервері в Інтернеті. Ти завжди можеш мати доступ до своїх файлів, навіть якщо комп'ютер пошкоджений.

7. Вам не слід відкривати поштові додатки, отримані від незнайомих людей або натискати на посилання, що міститься в листі. Інакше ви можете стати жертвою кібершахрайства.

8. – Мені допомогти тобі з програмою щодо шифрування? – Так, будь ласка. Я не можу повністю розібратися в ній.

SPEAKING

1. Work in groups. Discuss the Internet threats shown in Fig. 1. Use the information from the text and your own knowledge.

2. Do you agree with the given in the text tips for staying secure online? Why? Work in small groups, then share your opinion with the class.

3. What additional precautions, (except those described in the text) should we all take to protect our computers while using the Internet? Work in pairs. Make a list of at least three protections.

WRITING

1. Work individually. Make a short summary of the text "Internet Security" (see page 13).

REFERENCES

1. Demetriades, D. Information Technology Workshop / D. Demetriades. – Oxford : Oxford Univ. Press, 2010. – 39 p.

2. Evans, V. Career Paths: Information Technology / V. Evans, J. Do- oley, S. Wright. – Express Publishing, 2014. – 40 p.

3. Evans, V. New Round-Up 6 Student's Book / V. Evans, J. Dooley.– Pearson Education Limited, 2015. – 256 p.

4. Glendinning, E. H. Oxford English Information Technology Student's Book / E. H. Glendinning, J. McEvan. – 2nd ed. – Oxford : Oxford Univ. Press, 2011. – 222 p.

5. Glendinning, E. H. Technology 1 Student's Book / E. H. Glendin- ning, A. Pohl. – Oxford : Oxford Univ. Press, 2012. – 135 p.

6. Glendinning, E. H. Technology 2 Student's Book / E. H. Glendin- ning, A. Pohl. – Oxford : Oxford Univ. Press, 2012. – 135 p.

7. Longman Dictionary of Contemporary English / Pearson Education Limited, 2007. – 1949 p.

8. Ricca-McCarthy, T. English for Telecoms and Information Technology / T. Ricca-McCarthy, M. Duckworth. – Oxford : Oxford Univ. Press, 2007. – 95 p.

9. Academic Tutorials : quick and easy learning [Электронный ре- сурс]. – Режим доступа: http://www.academictutorials.com.

10. BBC [Электронный ресурс]. – Режим доступа : http:// www.bbc.co.uk./education.