Львівський державний університет внутрішніх справ

І. Ю. Сковронська
Л. І. Кузьо
Т. П. Дяк

English for Information Technology and Computing

Інтерактивний навчальний посібник

Львів
2022

УДК 811.111’276.6:004](075.8-028.27)
С 44

Рекомендовано до поширення через мережу Інтернет
Вченою радою Львівського державного університету внутрішніх справ
(протокол від 30 березня 2022 р. № 8_)

Р е ц е н з е н т и :
О. В. Оленюк, кандидат філологічних наук, доцент;
В. В. Сеник, кандидат технічних наук, доцент

Сковронська І. Ю., Кузьо Л. І., Дяк Т. П.
С 44 English for Information Technology and Computing : інтерактивний навчальний посібник. Львів : Львівський державний університет внутрішніх справ, 2022. 228 с.

Основа інтерактивного навчального посібника – комплексний підхід до вивчення англійській мові у закладах вищої освіти з урахуванням сучасних вимог. Інтерактивні методи навчання допомагають інтенсифікувати процес розуміння, засвоєння й творчого застосування знань під час вирішення практичних завдань. Мета посібника – забезпечити розвиток і вдосконалення вмінь і навичок усного та писемного мовлення, читання та перекладу, роботи з фаховою літературою і лексикою у сфері комп’ютерних наук та інформаційних технологій з використанням інтерактивних технологій.

Для здобувачів вищої освіти першого бакалаврського рівня галузі знань 12 «Інформаційні технології», спеціальності 126 «Інформаційні системи і технології» у рамках освітньої програми «Правоохоронні інформаційні системи», а також для всіх, хто прагне вдосконалити власні навички комунікації у цій сфері.

The interactive textbook is based on the comprehensive approach to teaching English in higher education institutions, taking into account modern requirements. Interactive teaching methods help to intensify the process of understanding, mastering and creative application of knowledge while fulfilling practical tasks. The aim is to develop and improve the skills of oral and written speech, reading and translation, work with professional literature and vocabulary in the field of computer science and information technology using interactive technologies.

The textbook is designed for applicants of higher education of the first «bachelor» level of knowledge 12 «Information Technology», specialty 126 «Information Systems and Technologies» of the educational program «Law Enforcement Information Systems», as well as for all who seek to improve their communication skills in this area.

Видано в авторській редакції

УДК 811.111’276.6:004](075.8-028.27)

Contents

ПЕРЕДМОВА

Модернізований підхід до підготовки кваліфікованих кадрів із застосуванням європейського досвіду є чи не найважливішим завданням державної політики нашого часу. Обізнаність із нормами й канонами застосування сучасної англійської мови та вміння послуговуватись ними у повсякденних ситуаціях суттєво важливо для тих, хто хоче активно спілкуватися зі зарубіжними колегами і стати рівноправними членами міжнародних ділових спільнот. Нові вимоги до знання англійської мови ведуть до пошуків ефективних методів і форм навчання. Особливості професійної діяльності фахівців комп'ютерного програмного забезпечення, як і користувачів персональних комп'ютерів, потребують новітнього підходу до навчання мові. Це визначається метою, яка полягає у розвитку знань, навичок і вмінь, необхідних для повсякденного використання.

З огляду на зазначене, основною метою вивчення дисципліни *«Іноземна мова професійного спрямування (англійська)»* є практичне оволодіння англійською мовою фахового спілкування в усній та писемній формах у типових ситуаціях, здійснення перекладу фахової літератури та технічного перекладу комп'ютерного програмного забезпечення.

Завдання дисципліни «Іноземна мова професійного спрямування (англійська)» полягає у розвитку та вдосконаленні таких загальномовних умінь і навичок: формування у студентів потреби вивчення іноземної мови професійного спілкування; оволодіння навичками оглядового, інформативного та поглибленого читання матеріалів оригінальної, науково-технічної літератури за фахом; переклад рідною мовою зі словником та без словника оригінальних науково-популярних і текстів професійного спрямування; вміння брати участь у бесідах, ситуаціях офіційного і неофіційного спілкування на загальні та професійні теми; розвиток навичок пошуку новітньої фахової інформації з іноземних джерел та у всесвітній мережі Інтернет; розвиток навичок реферування й анотування суспільно-політичної, технічної і галузевої літератури

рідною та іноземною мовами; формування читацької і мовленнєвої культури, розвиток творчих здібностей, культури полеміки, критичного мислення у сфері повсякденного та професійного спілкування; формування гуманістичного світогляду, моральних та естетичних цінностей, особистісних рис громадянина України, який сприймає і поділяє національні та загальнолюдські цінності, відчуває свою приналежність до європейської спільноти.

Інтерактивний навчальний посібник із дисципліни «Іноземна мова професійного спрямування (англійська)» укладено з урахуванням тематики, що передбачена навчальною та робочою програмами курсу. Він призначений для здобувачів вищої освіти денної та заочної форм навчання галузі знань 12 «Інформаційні технології», що вивчають англійську мову і працюють над удосконаленням знань щодо її активного використання у професійній діяльності.

Авторський колектив інтерактивного навчального посібника «English for Information Technology and Computing (Англійська мова для інформаційних технологій та обчислень)» визначив такі навчальні пріоритети: забезпечення якості знань здобувачів з англійської мови в контексті аналітичного читання та розуміння літератури фахового спрямування; практичне оволодіння англійською мовою фахового спрямування в усній та писемній формах у типових ситуаціях; розвиток і вдосконалення навичок усного та письмового перекладу фахової літератури та технічного перекладу комп'ютерного програмного забезпечення. Матеріал підручника орієнтований на здобуття знань і вмінь із використанням інноваційних підходів до вивчення іноземної мови професійного спрямування.

Інтерактивний навчальний посібник містить 20 юнітів, об'єднаних за тематикою. Навчальний матеріал викладений послідовно і розкриває поняття, що є ключовими у цій спеціальності і тісно пов'язані з розвитком сучасних інформаційних технологій, застосуванням комп'ютерів і програмного забезпечення у різних сферах людської діяльності.

Матеріал відібраний з сучасних англомовних навчальних джерел, підручників із фаху, журналів, Інтернет-ресурсів тощо. Структура уроків посібника уніфікована та містить завдання для аудиторної, самостійної та індивідуальної роботи здобувачів. Кожен урок містить відео- та аудіоматеріал, текст із супроводжуючим

тематичним словником і післятекстові завдання як лексичного, так і комунікативного характеру. Завершується урок практичними завданнями, максимально наближеними до реальних комунікативних ситуацій, пов'язаних із темою, що вивчається. Застосування відеоматеріалу дає змогу поєднати зорові та звукові образи у типових обставинах, запропонувати мовленнєву ситуацію, в якій вони за допомогою викладача можуть опинитись у ролі активних учасників комунікації. Актуальність цього методу навчання полягає в тому, що він забезпечує звя'зки між роботою в аудиторії та реальним життям.

Використання інтерактивних матеріалів у навчальному процесі сприяє інтенсивному формуванню та розвитку комунікативної компетентності здобувачів вищої освіти, підвищенню мотивації вивчення мови, а також має невичерпний навчальний ресурс. Залежно від умов навчання (кількості годин, рівня знань тощо) посібник може використовуватися як основний, так і допоміжний навчальний засіб для аудиторних занять і самостійної роботи здобувачів вищої освіти.

UNIT 1
INFORMATION TECHNOLOGY IN THE INFORMATION AGE

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«Technology is nothing. What's important is that you have a faith in people, that they're basically good and smart, and if you give them tools, they'll do wonderful things with them».* ***Steve Jobs***

2. Discuss these questions.

– Do you know what age we live in?

– How would you define Information Technology?

– What essential components of IT revolution have changed the world?

– Is it hard to overestimate the strategic significance of the new information technology?

– Does information give you competitive edge?

– How can information technology create substantial and sustainable competitive advantages?

– How have computers and the Internet changed our lives?

– Can you imagine your life without the computer and the Internet? What role do they play in your life?

– Do you think modern technologies have improved our lives?

3. Watch the video «Information technology in the information age».

– Before you begin, say the terms you might hear and use.

– Watch the video and render what you remember about it. Say what you heard in your own words. Check whether suggested by you academic vocabulary was used by the presenter and provide their definitions.

– While you are watching the video, write down any new vocabulary you hear, then check the definitions and build up your own personalized vocabulary booklet.

– Extend the story by saying what you think might happen as alternatives to what is presented in the video. For example:

- *What would you tell your friend about Information Technology in the information age?*
- *What do you think the other people nowadays use IT for?*

– Write down any thoughts that come to mind about what you've seen.

Information Technology in the Information Age.

https://www.youtube.com/watch?v=Eb2K5XPhwAk (2.07min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

rapid – швидкий
capitalizing on computer microminiaturization advances – використання досягнень мікромініатюризації комп'ютерів
impact – вплив, імпульс;
microelectronics – мікроелектроніка;
advent – прихід;
data – дані, інформація;
compilation – збирання;
computing – обчислення;
legion – безліч;
medium – середовище;
process – обробляти;
store – зберігати, накопичувати;

retrieval – пошук, відновлення;
capacity – ємність, потужність, продуктивність (комп'ютера);
application – застосування;
repetitively – повторно;
obviously – очевидно;
substantial – істотний;
USB flash drive – USB-флеш-накопичувач, флешка;
mainframe computer – мейнфрейм (головний комп'ютер обчислювального центру);
accurately – безпомилково, точно;
component – компонент, складова частина;
flexible – гнучкий;
accounting – облік, звітність;
telecommunications – дистанційний зв'язок, дистанційне передавання даних;
conventional – звичайний, загальноприйнятий;
satellite – супутник;
remote control – пульт; дистанційне керування;
transmission of information – передача інформації;
word processing – оброблення текстів;
complex calculation – складний розрахунок;
fibre optics – волоконна оптика;
modern business – сучасна підприємницька діяльність.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these wordcombinations.

1) modern	a) techniques;
2) word	b) devices;
3) information	c) processing;
4) international	d) waves;
5) data	e) control;
6) remote	f) business;
7) electronic	g) calculations;
8) radio	h) communication;
9) complex	i) banks;
10) telecommunications	j) technology.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

INFORMATION TECHNOLOGY

The Information Age (also known as the Computer Age, Digital Age, or New Media Age) is a historical period that began in the mid-20th century, characterized by a rapid epochal shift from the traditional industry established by the Industrial Revolution to an economy primarily based upon information technology.

The onset of the Information Age can be associated with the development of transistor technology.

According to the United Nations Public Administration Network, the Information Age was formed by capitalizing on computer microminiaturization advances, which would lead to modernized information and to communication processes upon broader usage within society becoming the driving force of social evolution.

The microchip revolution is having a huge impact on modern business. While the advent of completely automated (robotized) production systems is producing legions of unemployed workers, people at work are most likely to come into contact with microelectronics through the medium of 'information technology'.

Information technology (IT) covers a wide range of operations based on a combination of computing and telecommunications techniques. It includes the compilation of information in the form of data banks and the material, which may be textual, numeric, pictorial or even vocal can be processed and stored until retrieval is required.

In the past, information management involved massive dependence on paper, but today tiny electronic pulses are stored on USB flash drives. Although modern USB flash drives have an incredible capacity, newer and even more compact devices are being developed.

The earliest forms of computers were so-called mainframe computers, programmed electronic machines capable of processing almost limitless amounts of routine data and making complex calculations repetitively, speedily and accurately.

Microelectronics involves the design, application and production of very small electronic devices containing many miniaturized components. Microcomputers are obviously much smaller in size than the mainframe computers. They are also cheaper and more flexible

in operation. A substantial range of software programs are on offer to perform many of the key office functions such as accounting, stock control and word processing.

The other branch of information technology is telecommunications, which covers the transmission of information by electronic cables (telephone and telegraph or radio waves. Fibre optics (very fine strands of glass) transmitting high speed pulses of light are replacing the old-fashioned, conventional copper cables and allow many thousands more telephone calls to be made. Using microwave transmissions, static space satellites are also revolutionizing international communication. Perhaps the example of the new concepts with which we are most familiar is the infra-red system which we use to operate our television sets by remote control.

7. Comment on the notions expressed in the text.

1) The advent of completely automated (robotized) production systems is producing legions of unemployed workers.

2) Information technology covers a wide range of operations based on a combination of computing and telecommunications techniques.

3) Using microwave transmissions, static space satellites are also revolutionizing international communication.

LANGUAGE DEVELOPMENT

8. Read the article «A world without technology». Find some reasons why technology has become one of the biggest advantages/disadvantages of the modern world.

Having recently moved country, I have been relying upon my phone as my sole means of communication with the world. You can imagine

my panic, therefore, when I found myself cut off from this world of social media shortly after my arrival in France. Although I was reunited with a network signal after a mere week, this experience has led me to question whether our modern-day reliance on technology is becoming unhealthy.

I often forget that androids and smartphones are very much a novel invention. Writing in light of the recent release of the iPhone 6, it is hard to imagine that our parents would have been considered lucky to have a fully functioning television just forty years ago. Nowadays, to the increasing detriment of traditional forms of communication, we rely on our phones for everything. Our androids act as calculators, clocks, cameras, calendars and music players, whilst traditional forms such as the letter are fast becoming a thing of the past. Similarly, our once regular trips to the high street are slowly being replaced by the wonders of online shopping, whilst the Kindle, for example, has become a popular alternative to the book. I can't help but feel a little nostalgic especially about the latter; as a student of English Literature, there is nothing I like more than flicking through a traditional paperback book.

Additionally, I now notice more and more that the smartphone is replacing face-to-face communication. I regularly see groups of people in restaurants, for example, paying more attention to their phones than to each other. I can't be the only person that thinks there is something inherently worrying about this; are we beginning to choose the company of technology over the company of other human beings?

Whilst I myself viewed my recent disconnection from social media negatively at first, I have to admit that I increasingly began to feel an underlying sense of relief. I was finally being forced to enjoy my own company and, dare I say it, there was something intrinsically nice about being alone.

9. Talking points.

– Can you imagine a world without technology?

– Make a list of the ways you use computers at work and in your free time.

VIDEO

Technology addiction

10. Do the preparation tasks (a, b) first. Then watch the video (https://learnenglishteens.britishcouncil.org/study-break/video-zone/

technology-addiction) **and do the exercises. This video gives us some important findings about technology addiction.**
Remember you can read the transcript at any time.

a) Match the words with the definitions.

– daily
– a buzz
– a mobile device
– addicted
– to respond
– a relationship

– a portable computing device such as a smartphone or tablet computer
– to reply
– a low humming or murmuring sound
– enjoying a certain activity a lot and spending as much time as possible doing it
– a way in which two or more people behave towards each other every day

b) How often do you check your phone? How much is too much?

Transcript

Alejandra: My name is Alejandra and I'm thirteen.
How much is too much?
Alejandra: In the morning, I'll go on my phone and I'll check my Instagram, Snapchat, Kik, Twitter, Tumblr, Vine.
78% of teens check their mobile devices at least hourly.
Alejandra: I get more excited than I should get.
Almost ¾ feel the need to immediately respond to messages.
Alejandra: When I hear a buzz, I'm like, oh, I have friends.
And 1 in 2 feel like they are addicted.
Alejandra: I guess it would be addicting because you always have to be on it.
85% of parents feel their teens' device use has not harmed their relationship.
Alejandra: My mom, she doesn't really have, like, rules, I guess.
Yet 1 in 3 teens argue with their parents daily about it.
Alejandra: I hope she thinks I have it under control because I think I do.
What do you think?

11. Check your understanding: True or False.
1. Alejandra is fourteen. **T/F**
Початок форми

Кінець форми
2. She checks her phone in the morning. **T/F**
Початок форми

Кінець форми
3. She gets depressed checking her phone. **T/F**
Початок форми

Кінець форми
4. When she hears a buzz it makes her feel like she has friends. **T/F**
Початок форми

Кінець форми
5. Alejandra's mother has rules about Alejandra using her phone. **T/F**
Початок форми

Кінець форми
6. Alejandra thinks she has checking her phone under control. **T/F**

12. Fill the gaps with the correct number from the list: seventy-eight per cent, one in three, eighty-five per cent, three quarters, one in two.
Початок форми

1. … of teens check their mobile devices at least hourly.
Кінець форми
Початок форми

2. Almost … feel the need to immediately respond to messages.
Кінець форми
Початок форми

3. And … feel like they are addicted.
Кінець форми
Початок форми

4. … of parents feel their teens' device use has not harmed their relationship.
Кінець форми
Початок форми

---

5. Yet … teens argue with their parents daily about it.

13. Work in small groups. Discuss these questions about IT.
– How often do you use your phone?
– Do you think phone addiction is a serious problem?

14. Activate pre-existing knowledge and write a brief article on pros and cons of Information Technology.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.
A man flying in a hot air balloon

A man flying in a hot air balloon suddenly realizes he is lost. He reduces height and spots a man down below. He lowers the balloon further and shouts to get directions, «Excuse me, can you tell me where I am?» The man below says: «Yes. You're in a hot air balloon, hovering 30 feet above this field.» «You must work in Information Technology,» says the balloonist. «I do» replies the man. «How did you know?» «Well,» says the balloonist, «everything you have told me is technically correct, but It's of no use to anyone.» The man below replies, «You must work in management.» «I do,» replies the balloonist, «But how'd you know?» «Well», says the man, «you don't know where you are or where you're going, but you expect me to be able to help. You're in the same position you were before we met, but now it's my fault.»

UNIT 2
COMPUTERS IN THE MODERN WORLD

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«Computers have lots of memory but no imagination».*
Author Unknown

2. Discuss these questions.

– Can you define what a computer is?
– Do you know a lot about computers?
– In what ways have computers transformed our lives?
– Do you think computers will always look similar to the way they do now (a screen with a keyboard)?
– What would happen if all of the world's computers suddenly stopped forever?

3. Watch the video «Computers in the modern world».

– Watch the video and write down the nouns.
– Watch again and write down the verbs.
– Watch a third time and write down the adjectives.
– Write a brief summary using the nouns, verbs and adjectives you wrote down.

What Is a Computer?

https://www.youtube.com/watch?v=Cu3R5it4cQs (2.48 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

computer – комп'ютер;
capability – здатність; ємність;
apply – застосовувати, використовувати;
device – пристрій, прилад;
microprocessor – мікропроцесор;
input – уведення; дані, що вводять у комп'ютер;
mouse – миша;
keyboard – клавіатура;
screen – екран;
process – обробляти;
service – послуга;
mainframe computer – мейнфрейм (головний комп'ютер обчислювального центру);
supercomputer – суперкомп'ютер;
minicomputer – міні-комп'ютер, міні-ЕОМ;
microcomputer – мікрокомп'ютер, мікро-ЕОМ;
performance – виконання; продуктивність, швидкодія, ефективність;
accommodate – розміщувати;
entertainment – розваги;
exploration purpose – з метою дослідження;
desktop computer – настільний ПК;
laptop – лептоп, портативний комп'ютер;
personal digital assistant (PDA) – персональний цифровий секретар;
tablet – планшет;
smartphone – сматрфон;
netbook – нетбук;
notebook – ноутбук;
electronic brain – електронний інтелект, мозок;
embedded system – вбудована система;
data processing – оброблення даних;
run business operations – виконувати бізнес-операції;
data storage capacity – ємність носія даних;
business people – підприємці, бізнесмени.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these wordcombinations.

1) super	a) console;
2) exploration	b) operations;
3) embedded	c) purpose;
4) electronic	d) data;
5) data	e) opportunities;
6) provide	f) computer;
7) business	g) process;
8) store	h) brain;
9) production	i) processing;
10) gaming	j) system.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

TYPES OF COMPUTERS

The fact that computers have considerably changed the lives of human beings can hardly be denied. Computers make people's lives easier and more comfortable: they provide opportunities for staying in touch to billions of people who may be in different parts of the world. Today people can drive computerized cars and work for employers from other countries without even seeing them. There also exists an idea that computer is an electronic brain that people can rely on. Computers are crucial elements to business people and those who need them for work, for study and for entertainment.

There are a lot of terms used to describe computers. Most of these words imply the size, expected use or capability of the computer. While the term computer can be applied to virtually any device that has a microprocessor in it, most people think of a computer as a device that receives input from the user through a mouse or keyboard, processes it in some fashion and displays the result on a screen.

Since the advent of the first computer different types and sizes of computers are offering different services. Computers can be as big as occupying a large building and as small as a laptop or a microcontroller in mobile and embedded systems. The four basic types of computers are as follows: supercomputer, mainframe computer, minicomputer, and microcomputer.

The most powerful computers in terms of performance and data processing are the supercomputers. These are specialized and task specific computers used by large organizations. These computers are used for research and exploration purposes, like NASA uses supercomputers for launching space shuttles, controlling them and for space exploration purpose. The supercomputers are very expensive and very large in size. It can be accommodated in large air-conditioned rooms; some super computers can span an entire building.

Although mainframes are not as powerful as supercomputers, but certainly they are quite expensive nonetheless, and many large firms and government organizations uses mainframes to run their business operations. The mainframe computers can be accommodated in large air-conditioned rooms because of their size. Super-computers are the fastest computers with large data storage capacity, mainframes can also process and store large amount of data. Banks, educational institutions and insurance companies use mainframe computers to store data about their customers, students and insurance policy holders.

Minicomputers are used by small businesses and firms. Minicomputers are also called as «Midrange Computers». These are small machines and can be accommodated on a disk with not as processing and data storage capabilities as super-computers and mainframes. These computers are not designed for a single user. Individual departments of a large company or organizations use minicomputers for specific purposes. For example, a production department can use minicomputers for monitoring certain production process.Desktop computers, laptops, personal digital assistant (PDA), tablets and smartphones are all types of microcomputers. The microcomputers are widely used and the fastest growing computers. These computers are the cheapest among the other three types of computers. The microcomputers are specially designed for general usage like entertainment, education and work purposes. Well known manufacturers of microcomputer are Dell, Apple, Samsung, Sony and Toshiba.

Desktop computers, gaming consoles, sound and navigation system of a car, netbooks, notebooks, PDA's, tablet PC's, smartphones, calculators are all type of microcomputers.

7. Comment on the notions expressed in the text.

1) Computers make people's lives easier and more comfortable.

2) Computer is an electronic brain that people can rely on.

3) Computers are crucial elements to business people and those who need them for work, for study and for entertainment.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) Computers make people's lives easier and more comfortable.

2) People who are in different parts of the world use computers for staying in touch. 3) Computers are decisive elements mostly to business people.

4) Most of terms used to describe computers imply the price, expected use or capability of the computer.

5) The term computer can be applied to virtually any device that has a monitor.

6) Different types and sizes of computers are offering the same services.

7) There are three basic types of computers.

8) The most powerful computers in terms of performance and data processing are the microcomputers.

9) Supercomputers are specialized and task specific computers used by large organizations.

10) Minicomputers are designed for a single user.

LANGUAGE DEVELOPMENT

9. Do the test online «Are you a good digital citizen?» Do the quiz to find out if you're a good digital citizen and then do the exercises (a, b, c, d) to practise and improve your reading skills.

(https://learnenglishteens.britishcouncil.org/skills/reading/pre-inter-mediate-a2/are-you-good-digital-citizen)

a) Choose the correct definition.

a digital citizen: a person who lives in a modern world / a person who is active online

polite: respectful and kind / disrespectful and rude

safe: in danger / protected from danger

to worry: to think about problems or fears / to feel nervous about meeting new people

sensible: acting in a practical way / reacting quickly to changes

privacy settings: special places where you can be private / controls to make your information private

laws: rules that each country has / information about how to behave
illegal: respecting official rules / breaking official rules

b) Try the quiz and check your result at the end.

Are you a good digital citizen?

1. Do you believe all the information you see on the internet?

A. No! I always check that information is true.

B. I don't really think about the information being true or not.

C. I believe everything I see online.

2. Are you interested in modern technology?

A. Yes, I love learning and reading about all kinds of modern technology.

B. I'm interested in some modern technology but not everything.

C. I'm not at all interested in modern technology.

3. Are you nice to people online?

A. Yes, I always think carefully about what I am saying and doing online.

B. I think I am polite most of the time but I don't always think before I write.

C. I don't think much about what I say and do online.

4. Do you know how to stay safe online?

A. Yes, I am very careful about things like my privacy settings and passwords.

B. I think I am safe but I am not sure about things like privacy settings.

C. I don't think there are any dangers online so this doesn't worry me.

5. Do you think carefully before you share a photo?

A. Yes, I always ask myself 'Would I be happy to see this photo?' If the answer is 'yes', I share it.

B. I know that's probably important but I don't always stop to think.

C. I just share photos without thinking. I don't really worry about what people think.

6. Are you confident that you always follow your country's laws online?

A. Yes. I never download illegal files or copy other people's work.

B. I don't know much about the law, but I know not to copy other people's work.

C. Hmm ... I don't think laws are important when you go online.

Mostly As
Congratulations! You're a good digital citizen. You know how to use technology in a safe and sensible way. You also know how to enjoy technology for study and play. Well done!
Mostly Bs
You aren't a bad digital citizen but you could be better! Think carefully when you are online and ask questions if there are areas you don't understand.
Mostly Cs
Oh dear. You need to work on being a good digital citizen. Learn as much as possible about how to behave online or you may find you get into trouble one day.

c) Choose all the ideas that are mentioned in the text.
Which advice is true about being a good digital citizen? Choose six answers.

- You believe most of what you see on the internet.
- You are interested in modern technology.
- You don't worry about privacy settings.
- You think about each photo before you share it.
- You are polite to people online.
- You share photos online every day.
- You check information you read online.
- You know there are dangers online.
- You don't care about your country's online rules.
- You follow your country's online rules.

d) Write the word to fill the gaps.
1. The questions are to check whether you are a good_____citizen.
2. They ask if you believe everything you see on the_____.
3. Other questions are about being kind and_____to people online.
4. You should check your privacy setting to make sure your information is_____and you stay_____.
5. Good digital citizens always think carefully before they a photo online.
6. You should never_____illegal files or copy other people's work.

10. Talking points.

Devices for the disabled

Look at the words in the box and use as many of them as you can to describe the photos.

Blind person motor-impaired person screen magnifier Braille printer adaptive switch touch screen adapted keyboard on-screen keyboard voice recognition system screen-pointing device screen reader pneumatic switch (sip and puff)

11. Discuss these questions.

1. What sort of difficulties do you think are experienced by computer users with limitations of vision or mobility?

2. What types of devices could be helpful to blind users?

3. How can a person with mobility limitations communicate with a computer?

12. Read the text and find the following.

1. The laws which ensure equal opportunities for people with disabilities in the USA and the UK.

2. How the blind student in the photo interacts with the machine.

3. The systems which type on the screen what is being said in meetings.

4. The type of software which reads printed material, recognizes the text and then sends it to the PC.

5. The system which is activated by the user's eye movements.

6. The switch which can be used by someone with quadriplegia.

7. The function of voice recognition devices.

Computers have taken a dominant role in our society, meaning most jobs now require access to computers and the Internet. But what happens if a person is blind, deaf or motor-disabled? They needn't worry. The latest assistive technology is designed to help them use computers and do their jobs in the office, learn at school, or interact with their families at home. In addition, new laws oblige employers to adapt the workplace to accommodate disabled people. For example, the Americans with Disabilities Act or ADA and the UK's Disability Discrimination Act make it illegal for employers to discriminate against people with disabilities.

To work effectively, most blind users need to have their computers adapted with technologies such as **Braille, screen magnifiers, speech synthesis and Optical Character Recognition (OCR).**

Braille keyboards have Braille lettering on keyboard overlays, allowing the blind user to easily identify each key. For Braille output, there are printers that can emboss Braille on both sides of a page at high speed.

For someone with limited but usable vision, a screen magnification program may be appropriate. Magnification programs can enlarge text appearing on the screen by up to 16 times. In addition, they are now being developed with various levels of speech output capabilities, and work with all applications, including the Internet.

A speech-synthesis system is used to read aloud the work on the computer. It has a speech-synthesizer, which produces the audio output, and a screen reader, the program which reads aloud text and menus from word processors, databases, and even the Web.

OCR uses a flatbed scanner and specialized OCR software to read printed material and send the text to the computer. Then the PC can produce a copy of the text in Braille, a magnified copy, or a version that can be read aloud by a speech-synthesis system.

Deaf computer users can overcome many communication difficulties with the aid of **visual alerts and electronic note takers and textphones.**

Visual alerts are indicators that alert the deaf user when there is an error. So instead of hearing a sound, the user is alerted by a menu bar blinking or by a message on the screen. Electronic note-takers are devices which print out what is spoken in meetings or business presentations, where lip-reading is not possible.

Textphones allow the deaf to type and read phone conversations. They can be used in combination with relay services, where an operator says what the text user types, and types what a voice phone user says. Deaf people can also communicate via SMS and instant messaging.

Motor-impaired workers unable to type on a standard keyboard can employ **expanded or ergonomic keyboards, on-screen keyboards, adaptive switches and voice recognition systems**.

On-screen keyboards are software images of a keyboard that appear on the screen and may be activated with a trackball, touch screen, screen-pointing device, or eye movements. In **an eye-gaze system**, the keys on the virtual keyboard are activated by the user's eyes when they pause on a key for 2 or 3 seconds.

Switches come in many shapes and sizes. They are operated by muscle movements or breathe control. For example, a pneumatic switch known as «sip and puff»- allows someone with quadriplegia to control the PC by puffing and sipping air through a pneumatic tube.

Voice-recognition allows the computer to interpret human speech, transforming the words into digitized text or instructions.

LISTENING

13. Listen to an interview

https://www.youtube.com/watch?v=4uk1qrCPlts (min: 22:44)

Make notes about these topics.

1. The work that Mike is currently involved in.
2. Assistive technologies for blind users:
3. The difference between voice recognition and speech synthesis.
4. The goal of the web Accessibility Initiative.
5. Companies developing assistive technology products.

Audio script.

Interviewer: Mr. Hartley, can you tell us what you are working on at the moment?

Mike: Right now we are working with a group of blind employees here in Washington. We are studying each person's needs and abilities, and then we are going to find or design equipment for them.

Interviewer: What types of technology do blind users find helpful?

Mike: Well, a blond person has to interact with the computer in some way and Braille devices and speech synthesis systems are very useful ways of enabling them to do this, as are scanners and voice recognition systems.

Interviewer: What is the difference between voice recognition and speech synthesis?

Mike: Well, voice recognition systems let the user instruct the computer verbally – by talking. Speech synthesis systems allow the computer to communicate with the user by reading the output from the screen in synthetic speech.

Interviewer: Is it easy for blind users to access information on the Web?

Mike: Well, that depends on how the Website is designed. Today web designers are starting to follow the standards and guidelines developed by the Web Accessibility Initiative.

Interviewer: What is the goal of the Web Accessibility Initiative?

Mike: It tries to make web pages accessible to all users, especially to those with disabilities. They encourage designers to use techniques that help disabled users understand, navigate and interact with the Web. For example, they recommend providing audio descriptions as well a text, or to use Cascading style Sheets that can include oral presentations.

Interviewer: Are big companies involved in producing assistive technologies?

Mike: Yes, Microsoft Windows and Apple Mac OS support screen magnifiers, text-to-speech, talking alerts, etc. Compaq has DEC talk Express, a speech synthesizer that let's you hear what is displayed on the screen. IBM has ViaVoice, which is speech recognition software. GW Micro has a full featured talking computer called Small Talk Ultra, which also includes a screen reader for the blind, Wi-Fi, Bluetooth, and USB.

14. Listen to four people talking about how they use computers at work. Write each speaker's job. https://www.youtube.com/watch?v=4uk1qrCPlts (min: 0:17)

Electrical engineer secretary librarian composer

Speaker	Job	What they use computers for
1		
2		
3		
4		

15. Activate pre-existing knowledge and write a short article about the recent developments in the computer industry and the newest types of computers.

UNIT 3
THE HISTORY OF COMPUTERS

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«Man is still the most extraordinary computer of all».* ***John F Kennedy***

2. Discuss these questions.

– https://www.myenglishpages.com/english/proverb-author.php?c=John%20F.%20KennedyDo you know how old computers are?

– How did earlier contributions from other cultures figure into the development of the computer?

– What was the first computer?

– Who invented the first mechanical computer? When did it happen?

– What became the foundation for theories about modern computing and computers?

– What are the main stages in the history of modern computers?

– Can you predict the most important future breacthroughs for computers?

3. Watch the video «The history of computers».

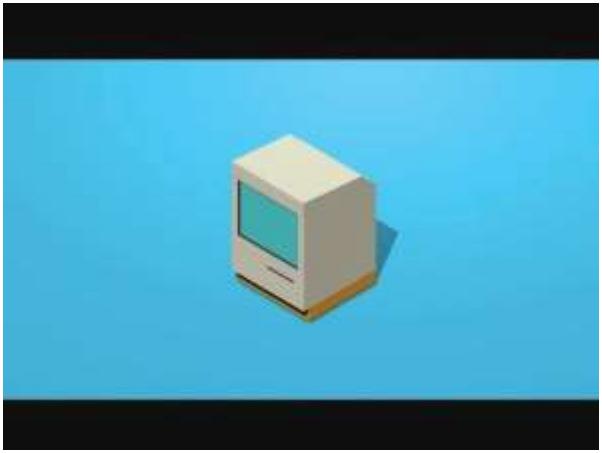
– While watching the video, write down any new vocabulary you hear.

– Check the definition and slowly build up your own personalised vocabulary booklet.

– Render what you remember about the video. Say what you heard in your own words.

The history of computers.

https://www.youtube.com/watch?v=pBiVyEfZVUU (3.33min.) part 1



https://www.youtube.com/watch?v=HRi1BHjID3o (3.09 min.) part 2

READING AND SPEAKING

4. Read and memorize active vocabulary.

devise – розробити;
invent – винаходити;

calculate – обчислювати;
abacus – абака, рахівниця;
bead frame – рамка з бусинами;
slide rule – логарифмічна лінійка;
reduce – зменшувати, понижувати;
ten-toothed gear wheels – зубчаста шестерня;
responsible – відповідальний;
figure out – обчислювати; з'ясовувати;
generation – покоління;
predecessor – попередник;
chip – чіп; мікросхема;
silicon – кремній;
rectangular – прямокутний;
layer – прошарок, шар;
attached – прикріплений;
encapsulate – інкапсулювати;
dependable – надійний;
count in tens – рахувати десятками;
mechanical way– механічний спосіб;
multiplying – множення;
dividing – ділення;
cut out the human being – витіснити людину;
aim guns – прицілитися;
integrated circuit – інтегральна схема.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these wordcombinations.

1) computer	a) problem;
2) calculating	b) calculations;
3) analogy	c) computer;
4) mathematical	d) instructions;
5) vacuum	e) device;
6) perform	f) logarithm;
7) integrated	g) way;
8) complete	h) technology;
9) mechanical	i) circuit;
10) produce	j) tube.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

THE HISTORY OF COMPUTERS

Let us take a look at the history of the computers that we know today. The very first calculating device used was the ten fingers of a man's hands. This, in fact, is why today we count in tens and multiply of tens. Then the abacus was invented, a bead frame in which the beads are moved from left to right. People went on using some form of abacus well into the 16th century, it is being used in some parts of the world because it can be understood without knowing how to read.

During the 17th and 18th centuries many people tried to find easy ways of calculating. J. Napier, a Scotsman, devised a mechanical way of multiplying and dividing, which is how the modern slide rule works. Henry Briggs used Napier's ideas to produce logarithm which all mathematicians use today.

Calculus, another branch of mathematics, was independently invented by both Sir Isaac Newton, an Englishman, and Leibnitz, a German mathematician. The first real calculating machine appeared in 1820 as the result of several people's experiments. This type of machine, which saves a great deal of time and reduces the possibility of making mistakes, depends on a ten-toothed gear wheels.

In 1830 Charles Babbage, an Englishman, designed a machine that was called 'The Analytical Engine'. This machine, which Babbage showed at the Paris Exhibition in 1855, was an attempt to cut out the human being altogether, except for providing the machine with the necessary facts about the problem to be solved. He never finished this work, but many of his ideas were the basis for building today's computers.

In 1930, the first analog computer was built by American named Vannevar Bush. The device was used in World War II to help aim guns. Mark I, the name given to the first digital computer, was completed in 1944. The men responsible for this invention were Professor Howard Aiken and some people from IBM. This was the first machine that could figure out lots of mathematical problems all at a very fast speed.

In 1946 two engineers at the University of Pennsylvania, J. Eckert and J. Mayshly, built the first digital computer using parts called vacuum tubes. They named their new invention UNIAC. The first generation of computers, which used vacuum tubes, came out in 1950. UNIAC

I was an example of these computers which could perform thousands of calculations per second.

In 1960, the second generation of computers was developed and could perform work ten times faster than their predecessors. The reason for this extra speed was the use of transistors instead of vacuum tubes. Second-generation computers were smaller, faster and more dependable than first-generation computers.

The third-generation computers appeared on the market in 1965. These computers could do a million calculations a second, which is 1000 times faster than the first- generation computers. Unlike second-generation computers, these are controlled by tiny integrated circuits and are consequently smaller and more dependable.

Fourth-generation computers have now arrived, and the integrated circuits that are being developed have been greatly reduced in size. This is due to microminiaturization, which means that the circuits are much smaller than before; as many as 1000 tiny circuits now fit onto a single chip. A chip is a square or rectangular piece of silicon, usually from 1/10 to 1/4 inch, upon which several layers of an integrated circuit are attached or imprinted, after which the circuit is encapsulated in plastic, ceramic or metal. Fourth-generation computers are 50 times faster than third-generation computers and can complete approximately 1,000,000 instructions per second. It has been said that if transport technology had developed as rapidly as computer technology, a trip across the Atlantic Ocean today would take a few seconds.

7. Comment on the notions expressed in the text.

1) The very first calculating device used was the ten fingers of a man's hands.

2) Abacus is being used in some parts of the world because it can be understood without knowing how to read.

3) In 1960, the second generation of computers was developed and could perform work ten times faster than their predecessors.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) The very first calculating device used was the abacus.

2) Today we count in dozens and multiply of tens.

3) People are still using some form of abacus nowadays.

4) J. Napier, a German, devised a mechanical way of multiplying and dividing.

5) Calculus, another branch of mathematics, was invented together by Sir Isaac Newton and Leibnitz.

6) The first real calculating machine increased the possibility of making mistakes; 7) Charles Babbage finished designing a machine that was called 'The Analytical Engine' in 1830.

8) The first analog computer was used in World War II to help aim guns.

9) Professor Howard Aiken and some people from IBM invented the first digital computer in 1974.

10) Fourth-generation computers are still to arrive.

LANGUAGE DEVELOPMENT

9. Read the text. Match the paragraphs with the titles.

The wonderful world of computers

(A) British mathematician and inventor Charles Babbage designed the Analytical Engine in 1833. It was the first computer and it was mechanical. Babbage spent 37 years trying to build this machine but the technology was too difficult for him. However, modern computers are based on his original design and he is remembered as «the father of a computer».

(B) «Hackers» are the biggest worry for computer companies. They can enter the company's computer network through an open port or an Internet connection, crack the entry passwords and steal the secret data.

(C) For more than two decades before the 1990s, floppy disks were the best way to store, transfer or back up data. Like all things in the computer industry, the capacity of the floppy disk has changed considerably over the years. The most popular floppy disk can hold up to 1.44 megabytes of data (about 700 pages of text). Modern USB flash drives, portable external hard disk drives, optical disks, memory cards, and computer networks are data storage devices with much greater capacity. Although now, considered almost obsolete, the floppy disk still has some limited uses. The floppy disk symbol is still used by software by user interface elements related to saving files, the «Save» icon in most computer programs is a picture of a floppy.

(D) The first electronic computer was developed in 1946, filled an entire room and weighed over 30 tons! It could do an impressive 5,000 calculations per second.

(E) The second computer game, Pong, (a version of table tennis) was created in 1972 by a student from the USA. Today there are thousands of games. Companies have brought a lot of new technology into the gaming world to produce the highest quality graphics. The games are becoming much more real.

(F) Today computers come in all spheres and sizes – from the enormous super computers and mainframes, that have to be kept in special temperature-controlled rooms, to handhelds. Some handhelds including the iPhone have mini thumb touch keyboards and other handhelds have touch screens that you use with your finger or a pen-like tool called a stylus.

Titles:

1. The father of a computer.
2. A great variety of modern computers.
3. The heaviest calculator of the past.
4. Computer thieves.
5. How the symbol of the «Save» icon appeared.
6. Some words about computer games.

10. Read the statements and tick the ones which describe good points of computers.

1. They make your life easier.
2. It is a good way to entertain oneself and not feel bored.
3. The computer users become addictive.
4. It improves communication, saving time and money.
5. They emit dangerous rays.
6. They are bad for your eyes.
7. They make people more isolated and inactive.

11. Talking points.

– What do you think of this idea: *Some day, we'll be talking to our PC naturally like a friend.* Write down your opinions.

– What negative effects (if any) do computers have on our lives?

– For how much longer will computers continue to be developed?

– What brand of computer do you like and why?

12. There are a lot of synonyms among the computer terms. You are to read two columns and find the words with the same meanings.

Data	to keep
An icon	to choose
Dependent	thieves
Hackers	information
A display	addictive
To select	a sign
To store	a screen

13. Read and translate the text.

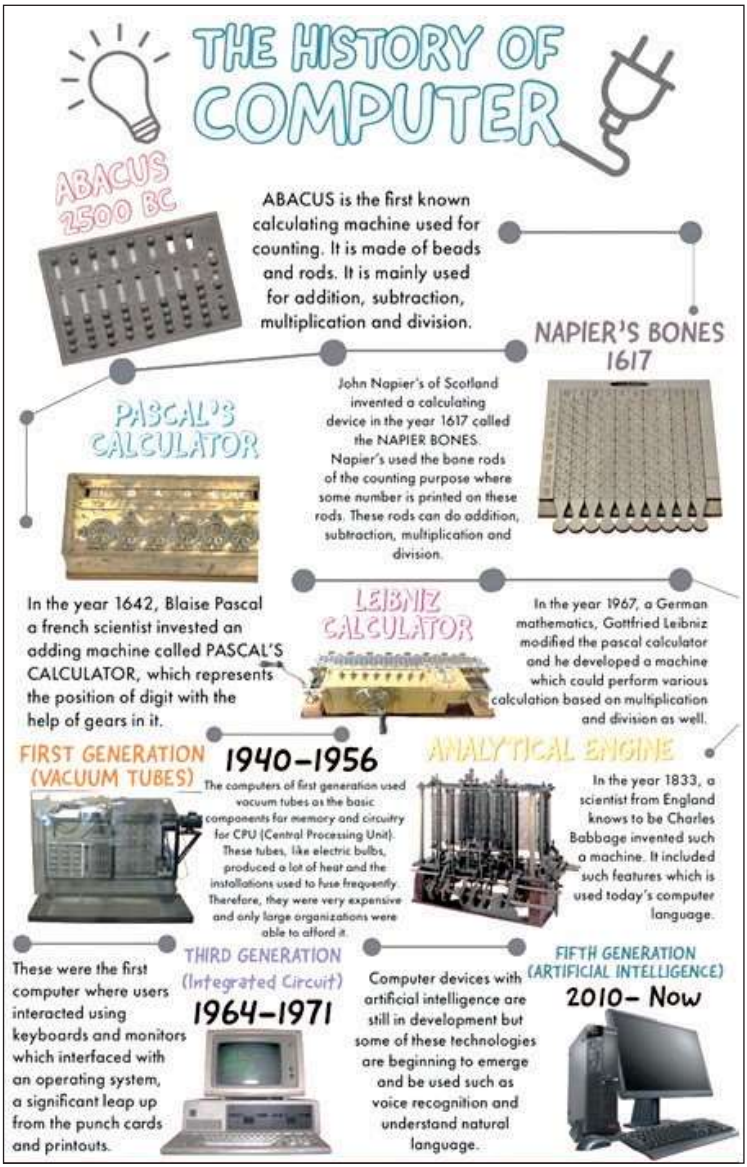
The modern world of high technology has been originated by the development of the computer. Different types and sizes of computers find several uses in our society in the storage or handling of data, from secret governmental files to banking transactions to private household accounts. Computers have started a new era in manufacturing through the techniques of automation, and they have enhanced modern communication systems which have effectet different social, economic fields.

The Internet has produced a sort of revolution not only in trade but also in ordinary people's lives. Computers are essential tools in almost every field of research and applied technology, from constructing models of the universe to producing tomorrow's weather reports, and their use increases day after day. Database services and computer networks make available a great variety of information sources. But the same advanced techniques also make possible invasions of personal and business privacy. Computer crime has become one of the many risks that society must face if it would enjoy the benefits of modern technology.

14. Decide whether these statements are TRUE or FALSE.

1. Computers contributed to the development of high technology.
2. There is only a limited number of sixes and types of computers.
3. Computers have improved communication systems.
4. Database services and computer networks are used only for banking transactions.
5. Problems such as cyber crime have been totally solved.

15. Follow the history of computers and write a short article about the future developments in the computer history and the new possible computer technologies.



READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.
A computer addicted husband

My Dear Husband,

I am sending you this letter via this BBS communications thing, so that you will be sure to read it. Please forgive the deception, but I thought you should know what has been going on at home since your computer entered our lives TWO YEARS AGO. The children are doing well. Tommy is seven now and is a bright, handsome boy. He has developed quite an interest in the arts. He drew a family portrait for a school project, all the figures were good, and the back of your head is very realistic. You should be very proud of him.

Little Jennifer turned three in September. She looks a lot like you did at that age. She is an attractive child and quite smart. She still remembers that you spent the whole afternoon with us on her birthday. What a grand day for Jenny, despite the fact that it was stormy and the electricity was out.

I am doing well. I went blonde about a year ago, and discovered that it really is more fun! George, I mean, Mr. Wilson, the department head, has taken an interest in my career and has become a good friend to us all. I discovered that the household chores are much easier since I realized that you didn't mind being vacuumed but that feather dusting made you sneeze. The house is in good shape. I had the living room painted last spring; I'm sure you noticed it. I made sure that the painters cut holes in the drop sheet so you wouldn't be disturbed.

Well, my dear, I must be going. Uncle George--err--Mr. Wilson, I mean, is taking us all on a ski trip and there is packing to do. I have hired a housekeeper to take care of things while we are away, she'll keep things in order, fill your coffee cup and bring your meals to your desk, just the way you like it. I hope you and the computer will have a lovely time while we are gone. Tommy, Jenny and I will think of you often. Try to remember us while your disks are booting.

Love,

Your Wife

UNIT 4
COMPUTER APPLICATION

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«All of the biggest technological inventions created by man – the airplane, the automobile, the computer – says little about his intelligence, but speaks volumes about his laziness».*
Mark Kennedy

2. Discuss these questions.

– How often do you use a computer?
– What do you use a computer for?
– When did you first start using a computer?
– Think of a few examples of how computers have an educational or an entertainment value.
– Does having a computer make life more complicated or less complicated?
– What are some good things about having a computer?
– What are some bad things about having a computer?
– Do you think a computer can bring us happiness?

3. Watch the video «Computer application».

– Before you begin, say the terms you might hear.
– Watch the video and render what problems are explained. Say what you heard in your own words.
– Check whether suggested by you academic vocabulary was used by the presenter and provide their definitions.
– Write questions about the video.

Computer application

https://www.youtube.com/watch?v=3gMOYZoMtEs (1.29 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.
impact – вплив, імпульс, поштовх;
apply – застосовувати, вживати, використовувати;
evolve – розвиватися, еволюціонувати;
dexterity – вправність;
application programs – прикладні програми;
extirpate – винищувати;
shortcoming – недолік
ingenuity – винахідливість;
acumen – кмітливість;
acquisitiveness – користолюбство;
predict – прогнозувати, передбачати;
lag behind – відставати;
design– проектувати;
record keeping – облік;
inventory – товарний запас;
account and auditing – облік і аудит;
flexible – гнучкий;
accounting – облік, звітність;
business concern – комерційна фірма;
manufacturing concern – промисловий концерн;
intelligence – інтелект;

entertainment – розваги;
tremendous – величезний;
every walk of life – всі сфери життя;
telephone and address directory – телефонний довідник;
production scheduling – планування виробництва;
keep records – вести облік;
transaction – операція, транзакція, справа;
a medium of exchange – засіб обміну;
audio visual accessorise – аудіовізуальне обладнання.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these wordcombinations.

1) address	a) records;
2) keep	b) cars;
3) application	c) processing;
4) extirpate	d) marketing;
5) design	e) demands;
6) word	f) directory;
7) stock	g) information;
8) business	h) defects;
9) meet	i) programs;
10) store	j) concern.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

COMPUTER APPLICATIONS

Computers have become an essential part of modern human life. Since the invention of computer they have evolved in terms of increased computing power and decreased size. Owing to the widespread use of computers in every sphere, life in today's world would be unimaginable without them. They have made human lives better and happier. Therefore, computer becomes more and more popular and important to our society.

Computers have brought about a tremendous revolution in every walk of life and are expected to open more vast fields due to the dexterity of those who design software and those who develop application

programs. In a very short period, scientists have been able to extirpate all the defects, the limitations and the shortcoming of computer and much is expected from their ingenuity, acumen and acquisitiveness. The fields of application of computers are various and new applications are being searched out. The scientists applied it to predicting weather, earthquakes and storms, controlling of satellites and atomic reactions in reactors and else where. Engineers have not lagged behind. They use computers in designing cars, aeroplanes, ships, buildings, bridges and tools, etc.

In the business world, computers are playing great roles. They are used to word processing, record keeping, inventory controlling, patrol processing, account keeping and auditing, and stock marketing and ticket reservations. They are now used to keep personal telephone and address directory. Business concerns use computers in forecasting demands and planning to meet them. Manufacturing concerns use them in forecasting material requirements, inventory management, production scheduling, control and other purposes

Bank now use them to keep records of day-to-day transactions, keeping accounts and managing overall investment. Computers have been placed at the hands of bank customers. This provides facility for making withdrawals at odd hours. Financial houses take the help of the computers to make their credit cards a medium of exchange.

For entertainment purposes, computers are now used to play complex games, I.Q games and simulation games. Computers have also played a vital role in communication field. It has become so advantageous that the 21st century is being called «information century» because information can easily be transferred from one place to another within seconds by using Internet. We can convey our messages and send reports with audio visual accessories.

Computers can be used to compose music, write poems and produce drawings and paintings. Computers are also used in the study of the fine arts, particularly, literature. They have also been programmed to help scholars identify paintings and sculptures from ancient civilizations.

But computers do not have intelligence in the way humans do. They cannot think for themselves. What they are good at is carrying out arithmetical operations and making logical decisions at phenomenally fast speed. But they only do what humans program them to do.

Apart from the speed at which computers execute instruction, two developments in particular have contributed to the growth in the use

of computers – efficient storage of large amounts of data and diminishing cost. Today, computers can store huge amount of information on magnetic media and any item of this information can be obtained in a few milliseconds and displayed or printed for the user.

7. Comment on the notions expressed in the text.

1) Owing to the widespread use of computers in every sphere, life in today's world would be unimaginable without them.

2) The fields of application of computers are various and new applications are being searched out.

3) Computers do not have intelligence in the way humans do.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) Computers have made serious modernization in every sphere of life.

2) Since the invention of computer they have become more powerful and smaller in size.

3) We can easily imagine life in modern world without computers.

4) The fields of application of computers are identical.

5) Engineers use computers in designing cars, aeroplanes, ships, buildings, bridges and tools, etc.

6) In the business world, computers are used to word processing, record keeping, inventory controlling, patrol processing, account keeping and auditing, and stock marketing and ticket reservations.

7) Computers enhance speed and efficiency in a business, they make accurate and unbiased data available to business owners and related parties.

8) Many small businesses keep and store important business documents on their computers.

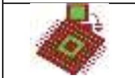
9) To save time, business owners or human resource managers can use virtual technologies to communicate and train their staff.

10) A computer can be used to make business research on the Internet.

LANGUAGE DEVELOPMENT

9. Write the names under the correct pictures.

COMPUTERS & ME: MATCHING

					
		E-MAIL HARD DISK MICROPHONE LAPTOP MUSIC MIXER CD PRINTER MOUSE MONITOR CD BURN SMARTCARD WIFI MOTHERBOARD HEADPHONES SCANNER SPEAKERS PDA MODEM SAVE AS NETWORK BUG PEN DRIVE CHIP SHIELD FLOPPY DISK TABLET FLAT SCREEN GAME CONSOLE TEXT DOCUMENT MOUSEMAT CHAT WEBCAM USER TRASH JOYSTICK COMPUTER CASE KEYBOARD			
					
					
					
					
					
					

10. Read the following text.

GENERATION M

Lisa is in her room doing her homework. However, homework is just one of the things she's doing while her eyes are fixed on the computer screen. As well as studying for her Biology exam, Lisa is also listening to music, chatting with her best friend online, downloading songs and occasionally texting people on her mobile phone. «My parents keep telling me off for multi-tasking while studying but they don't understand that it helps me concentrate, «she says.

Young people today spend about six hours a day using various types of media, and doing different things at the same time. This is the reason why they are called the Generation M. But when it comes to learning new information, multi-tasking has a bad impact according to researchers. Dividing your attention between many activities makes the knowledge you gain harder to use later. We are not saying you shouldn't multi-task, just don't multi-task while you are trying to learn something new. According to specialists, it is also essential to take time away from electronic media. Generation M should take time to relax and reflect. There's a life beyond the screen and the pleasure of face-to-face communication cannot be replaced.

11. Find evidence for the following information in the text.

1. Lisa's parents believe that Lisa doesn't take her studies very seriously.

_____

2. The phrase «Generation M» means teenagers are good at doing many tasks at the same time. _____

_____

3. Learning is made easier when you concentrate on one thing at a time.

_____

_____

4. Specialists believe students need to spend less time using electronic media. _____

_____

12. Talking points.

- How have computers changed the way you work or study?
- What are everyday situations when computer is used?
- What are the fields that computers have entered?
- How is the computer used in each field?

13. Activate pre-existing knowledge and write a description of the computer use in one of the areas that you consider the most important.

UNIT 5
COMPUTER CONFIGURATION

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«The Internet is becoming the town square for the global village of tomorrow».*
Bill Gates

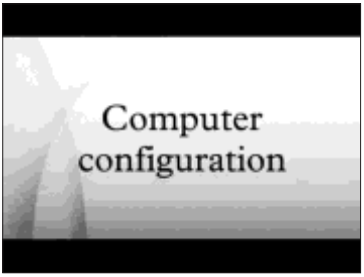
2. Discuss these questions.

– Do you have a computer at home?
– How often do you use it?
– What are the main components and features (configuration) of your computer system?
– What factors help you decide whether the computer is suitable for you?
– What common applications programs do you use?

3. Watch the video «Computer configuration».

– While watching the video, write down any new vocabulary you hear.
– Check the definition and slowly build up your own personalised vocabulary booklet.
– Present a short plan so that you can summarize and render what you heard in the video.

Computer configuration



https://www.youtube.com/watch?v=4w27ZDUzTPw (0.46 min,)

https://www.youtube.com/watch?v=osstgCRQZCg (2.51min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

user interface – інтерфейс користувача *(комп'ютерної програми)*;
remove – пересувати; переміщати;
harmful – шкідливий, згубний;
reproduce – відтворювати; робити копію; виробляти; відновлювати;
attach – прикріпляти; прикладати; приєднуватися;
select – вибирати, відбирати, добирати;
typewriter – друкарська машинка;
refer – стосуватися; посилатися (*на* – to);
enable – давати змогу або право *(щось зробити)*;
interlink – тісно пов'язувати; зчіпляти;
require – вимагати від когось; наказувати; потребувати;
interactive – взаємодіючий, взаємний, обопільний;
vast – широкий, безкраїй, просторий;
coat – вкривати;
enclose – оточувати, замикати; вкладати;
case – футляр, чохол; корпус;

expansion slot – гніздо для плати розширення, гніздо[слот] розширення;
socket – гніздо на платі чи, наприклад, жорсткому диску, куди вставляється і в такий спосіб під'єднується певний пристрій;
downloading – скачування;
smart card – «розумна» карточка, смарт-карта, кредитна або платіжна карточка з мікропроцесором;
client – клієнт, користувач, комп'ютер або програма, яка запитує послуги, ресурси, інформацію або оброблення у іншої програми або іншого комп'ютера и отримує результати обслуговування, наприклад, Web-браузер – типовий клієнт Web-сервера;
browsing – вільний перегляд та редагування;
information superhighway – інформаційна супермагістраль;
edutainment – (education entertainment) навчальні ігри, ігрове навчання, мультимедійне ПЗ на компакт-дисках або он-лайнові послуги, які використовуються для навчання в цікавій, ігровій формі;
downloading – скачування;
smart card – «розумна» карточка, смарт-карта, кредитна або платіжна карточка з мікропроцесором;
search engine – пошуковий механізм, пошукова машина, пошукова служба програма, яка дає змогу шукати інформацію в Web за ключовими словами, темами т.д. (наприклад, AltaVista, Excite, Google, HotBot, Infoseek, Lycos, Magellan, Rambler, Yahoo!);
expert system – експертна система, ЕС система яка використовує базу знань (правил) для рішення задач (видачі рекомендацій) в певній предметній області, наприклад в медицині, діагностиці поломок, виборі конфігурації складної комп'ютерної системи;
browsing – вільний перегляд та редагування;
information superhighway – інформаційна супермагістраль.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these wordcombinations.

1) word	a) interface;
2) search	b) slot;
3) operating	c) processor;
4) graphical	d) circuit;
5) input	e) device;

6) personal	f) camera;
7) expansion	g) system;
8) integrated	h) system;
9) digital	i) computer;
10) expert	j) engine.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

COMPUTER CONFIGURATION

A computer is a device that processes data according to a set of instructions known as a program. The equipment is known as the hardware and the programs and data are the software. A special set of programs, called an operating system, provides an interface for the user and allows applications programs to communicate with the hardware. Common applications programs include word processors for creating and editing texts, spreadsheets for calculating mathematical formulae and databases for storing data in a way that allows the data to be sorted and searched. Anti-virus programs are used to detect and remove viruses (harmful programs that can reproduce themselves and attach themselves to other programs). Some operating systems have graphical (user) interfaces that allow the computer user to select items from menus (lists of choices) and to start programs using an input device called a mouse. This is done by pressing a button on the mouse i.e. clicking the mouse. The main device for inputting the data is a typewriter – style keyboard and the output is commonly displayed on a monitor screen that looks like a small television screen. There is a range of sizes and types of computer. Those designed for use by one person at a time are known as personal computers (PCs) although the term PC is usually only applied to personal computers that are compatible with the standards laid down by the company known as IBM (International Business Machines). Personal computers include desktop computers (for use on an office desk) and handheld computers that can be carried around by the user. Electronics can be added to desktop computers by plugging in expansion cards (electronic circuit boards that can be plugged into special sockets called expansion slots). It is also possible to build all the main parts of a computer into one electronic integrated circuit packaged as a single electronic chip (the common name for a microchip; an electronic integrated circuit in a small package)

i.e. the ‘computer on a chip’. This enables computers to be built into other devices including household devices such as washing machines and fridges and to be incorporated into plastic cards i.e. smart cards, which are able to store information such as health records, drivers’ licences, bank balances, etc. Devices that include a computer circuit are commonly referred to as smart devices. A multimedia computer can process different forms of data including text, graphics, audio (sound), animation and video. This enables computer systems to be used for a combination of education and entertainment, sometimes referred to as edutainment. Unlike most machines, computers do not have a fixed purpose. They are multi-purpose tools. They can be used in a very wide variety of situations and are found in a wide range of systems including security systems, cars and phones. Advanced systems, known as expert systems, enable computers to ‘think’ like experts. Medical expert systems, for example, can help doctors diagnose an illness and decide on the best treatment. As computer systems are developed, they are becoming more common and are gradually being used for more and more purposes. How they are developed, and for what purposes they are actually used in the future, can be influenced by computer users. A variety of devices known as peripherals can be added externally to a computer. One of the most common peripherals is a printer used for printing the computer output on paper. A digital camera allows photographs to be input to a computer for editing. Not all computer systems are compatible i.e. they cannot use the same programs and data. Connecting computers together to form a network can provide the ‘connectivity’ required to enable computers and software to communicate and to share resources. Networks connected together form an internet. The connection of networks throughout the world is known as the Internet (note that a capital I is used) or, more simply, the Net. Various communication services are available on the Internet, including email for sending and receiving text messages and IRC (Internet Relay Chat) which allows users to communicate using text messages in real-time i.e. without any delay, while the users are logged on (connected to a network system account, normally using a password) to the system. An Internet service called FTP (File Transfer Protocol) is used for transferring data or program files between the powerful server computers that provide the network services and the client computers that use these services e.g. downloading music files. Note that copying data from a larger server system to a client is referred to as downloading and copying from the client to the server is known

as uploading. One of the newest and most popular services available on the Internet is the World Wide Web which is often simply referred to as the Web (note the use of the capital W). The Web contains interlinked documents called web pages. A set of related web pages stored together on a server computer is called a website. Websites, such as Dogpile and AskJeeves, give the user access to special programs called search engines that are designed to allow the user to find relevant web pages on the Web. An Internet system designed to provide free, interactive access to vast resources for people all over the world is sometimes referred to as an information superhighway.

Services such as these allow people to telecommute (use their computers to stay in touch with the office while they are working at home). Computer uses mentioned in this unit include producing greetings cards; learning, using three-dimensional graphics programs called 'Splat the Cat' and 'Pets 3'; using the Microsoft Word word processing program including features such as clipart (ready-drawn graphic images that can be inserted into documents); communicating on the Internet using email and chat programs including the use of email attachments (other types of files e.g. video files attached to simple email text messages); distance learning and videoconferencing (a form of communication over a network that uses video cameras so that the people taking part can see and hear each other); electronic classrooms or boardrooms; browsing the Web (moving from webpage to webpage using a Web browser program); selling, using a website; painting; scanning pictures; downloading music and creating CD-ROMs (compact disk read only memory, commonly referred to as CDs). CD-ROMs are storage devices that use laser light for reading and writing data. The most common storage device is a hard disk (a set of aluminium disks coated in a magnetic material and enclosed in a vacuum-sealed case) used for storing the operating system and applications programs as well as the user's data.

7. Comment on the notions expressed in the text.

1) Unlike most machines, computers do not have a fixed purpose.

2) Devices that include a computer circuit are commonly referred to as smart devices.

3) One of the newest and most popular services available on the Internet is the World Wide Web which is often simply referred to as the Web.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) A computer is a device that processes data according to a set of instructions known as a command;

2) The equipment is known as the circuits and the programs and data are the software.

3) An operating system provides a screen for the user and allows applications programs to communicate with the hardware.

4) Anti-virus programs are used to prevent, detect, and remove malware.

5) There are a lot of various sizes and types of computer.

6) A multimedia computer can process different forms of data including text, graphics, audio (sound), animation and video.

7) Like most machines, computers have a fixed purpose.

8) The connection of networks throughout the world is known as the World Wide Web.

LANGUAGE DEVELOPMENT

9. Read the text and do the activities.

Types of computer systems

From mainframes to wearable computers

A **mainframe** is the most powerful type of computer. It can process and store large amounts of data. It supports multiple users at the same time and can support more simultaneous processes than a PC. The central system is a large server connected to hundreds of terminals over a network. Mainframes are used for large-scale computing purposes in banks, big companies and universities.

A **desktop** has its own processing unit (or CPU), monitor and keyboard. It is used as a personal computer in the home or as a workstation for group work. Typical examples are the IBM PC and the Apple Macintosh. It's designed to be placed on your desk. Some models have a vertical case called a tower.

A **laptop** (also called a notebook PC) is a lightweight computer that you can transport easily. It can work as fast as a desktop PC, with similar processors, memory capacity, and disk drives, but it is portable and has a smaller screen that produces very sharp images. Instead of a mouse they have a touchpad built into the keyboard – a sensitive pad that you can touch to move the pointer on the screen.

They offer a lot of connectivity options: USB (Universal Serial Bus) ports for connecting peripherals, slots for memory cards, etc.

They come with battery packs, which let you use the computer when there are no electrical outlets available.

A **tablet PC** looks like a book, with an LCD screen on which you can write using a special digital pen. You can fold and rotate the screen 180 degrees. Your handwriting can be recognized and converted into editable text. You can also type at the detached keyboard or use voice recognition. It's mobile and versatile.

A personal digital assistant or **PDA** is a tiny computer which can be held in one hand. The term PDA refers to a wide variety of hand-held devices, palmtops and pocket PCs.

For input, you type at a small keyboard or use a stylus – a special pen used with a touchscreen to select items, draw pictures, etc. Some models incorporate handwriting recognition, which enables a PDA to recognize characters written by hand. Some PDA's recognize spoken words by using voice recognition software. They can be used as mobile phones or a personal organizers for storing notes, reminders and addresses. They also let you access the Internet via wireless technology, without cables.

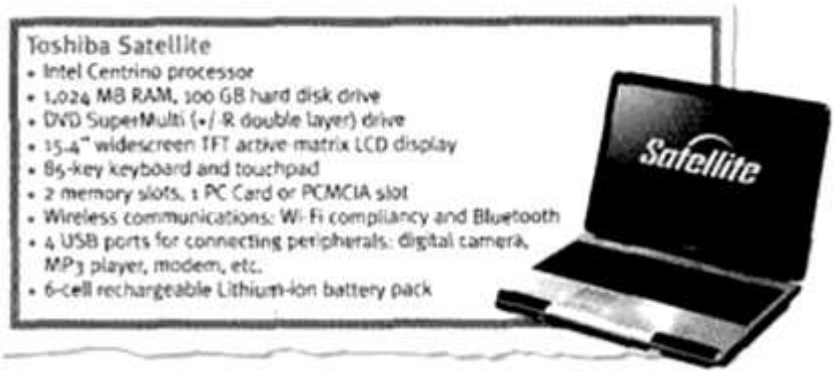
A **wearable** computer runs on batteries and is worn on the user's body, for example

on a belt, backpack or vest; it is designed for mobile or hands-free operation. Some devices are equipped with a wireless modem, a small keyboard and a screen; others are voice-activated and can access email or voice mail.

10. Which type of computer do these descriptions refer to?

1. A hand-held computer which can be used as a telephone, a web explorer and a personal organizer.
2. A typical computer found in many businesses and popular for home use.
3. A large computer used for intensive data processing and often linked to many terminals.
4. A small computer that fits into items of clothing.
5. A portable computer that can be closed up like a briefcase, but it can be as powerful as a desktop PC.
6. A full function PC, though it only weighs 1.2 kg –you can go to a meeting and write your notes on it, like a paper notepad: its screen mode can be changed from portrait to landscape.

11. Look at the computer advertisement and find this information.



1. What type of computer is advertised?
2. What kind of screen does it have?
3. Which pointing device replaces the mouse?
4. What type of ports does it have for connecting cameras and music players?
5. What sort of power supply does it use?

12. Read the interview with Adam Hawkins, an IT manager, and complete it with words from the PDA section above.

Interviewer: What are the basic features of a PDA?

Adam: Well, a typical PDA is a (1) ... device that runs on batteries and combines computing, phone and Net capabilities.

Interviewer: And how do you enter information?

Adam: For input, you use a (2) ... or pen to write and make selections on a (3) ...; they also have buttons for launching programs. Some models have a small keyboard.

They may have a (4) ... system that reacts to the user's voice.

Interviewer: Do they need special software?

Adam: Yes, most of them run on *Windows Mobile*. Palmtops supported by Palm Inc. use *Palm OS*. Pen-based systems include (5) ... so you write on the screen and the computer recognizes your handwriting and inserts the appropriate letters.

Interviewer: What sort of things can you do with a PDA?

Adam: You can store personal information, take notes, draw diagrams and make calculations. Many PDAs can access the Net via (6) ... technology.

13. Talking points.

– How important is technology for you?
– Which technological device is essential in your life?
– Describe the computer of your dreams: type of display, resolution (image quality) etc.

14. Below is a short text about «Mobile Phones». Read it carefully and complete it using the words in the box.

MP3 player	Sending	device
services	cheaper	
messaging	Videos	mobile phone

A mobile telephone or cellular telephone (commonly, (1)_____ or cell phone) is a long range, portable electronic (2)_____ used for mobile communication. In addition to the standard voice function of a telephone, current mobile

phones can provide many additional (3)_____ such as SMS for text (4)_____, e-mail, packet switching for access to the Internet and MMS for (5)_____ and receiving photos and (6)_____.

A mobile phone is more than just a phone for most teenagers: it's also an (7)_____ and a camera. Text messaging is (8)_____ and more private so they use it a lot more than phoning.

15. Activate pre-existing knowledge and write a brief summary on a computer configuration.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.

An artist, a lawyer, and a computer scientist

An artist, a lawyer, and a computer scientist are discussing the merits of a mistress. The artist tells of the passion, the thrill which comes with the risk of being discovered. The lawyer warns of the difficulties. It can lead to guilt, divorce, bankruptcy. Not worth it. Too many problems. The computer scientist says «It's the best thing that's ever happened to me. My wife thinks I'm with my mistress. My mistress thinks I'm home with my wife, and I can spend all night on the computer!»

UNIT 6

CHARACTERISTICS OF COMPUTERS

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«The production of too many useful things results in too many useless people».*
Karl Marx

2. Discuss these questions.

– What is the difference between computers and other electronic devices?

– What computer characteristics have contributed towards making it such a popular device?

3. Watch the video «Characteristics of Computers».

– Before you begin, think about the terms you might hear.

– Watch the video and render what you remember about it. Say what you heard in your own words. Check whether suggested by you academic vocabulary was used by the presenter and provide their definitions.

– Extend the story by saying what you think might happen as alternatives to what is presented in the video.

– Write down any thoughts that come to mind about what you've seen.

Characteristics of Computers

https://www.youtube.com/watch?v=zV34VW5X7AY
(1.57 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

perform operations – виконувати операції;
characteristic – характерна риса, особливість;
speed – швидкодія; швидкість;
accuracy – точність, безпомилковість;
reliability – надійність;
automation – автоматизація; автоматичне оброблення;
diligence – ретельність;
versatility – різносторонність; універсальність;
storage capacity – об'єм диску;
cost effectiveness – ефективність витрат;
data – дані;
efficiency – ефективність, продуктивність;
evaluation – обчислення; оцінювання;
to carry out – виконувати;
multiple program – множинна програма;
to solve problem – вирішити проблему;
annual rate – річна процентна ставка.

5. Match English words and word combinations on the left with their Ukrainian equivalents on the right.

1) arithmetic operation	a) множинна програма;
2) processing	b) головний комп'ютер обчислювального центру;
3) alphabetic sequence	c) комп'ютерна мережа;
4) system error	d) графічне зображення;
5) mainframe computer	e) алфавітна послідовність;
6) multiple program	f) арифметична операція;
7) graphic image	g) економічний;
8) computer network	h) резервування подорожі;
9) cost effective	i) оброблення;
10) travel reservation	j) системна помилка.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

CHARACTERISTICS OF COMPUTERS

A computer is a programmable machine designed to perform arithmetic and logical operations automatically and sequentially on the input given by the user and gives the desired output after processing. The characteristics of computers that have made them so powerful and universally useful are speed, accuracy, reliability, automation, diligence, versatility, storage capacity, and cost effectiveness. Let us discuss them briefly.

Speed

A computer can add and subtract numbers, compare letters to determine alphabetic sequence, move and copy numbers and letters. The speed with which computers carry out these operations is significant. This speed varies from a few microseconds (millionth of a second) to Nano (billionth of a second). For instance, people would need to do a lot of waiting in queues for grocery payments, for making telephone calls, for making travel reservations, etc. But with the help of computers the processing can be done in a fraction of a second. The speed of a computer at performing a single operation can be measured in terms of:

a) Millisecond – One thousandth of a second (1/1000);

b) Microsecond – One millionth of a second (1/1000000);

c) Nanosecond – One billionth of a second (1/1000000000). The speed at which a computer performs logical operations is measured in nanoseconds;

d) Picosecond – One trillionth of a second (1/1000000000000).

Accuracy

You may work for years before experiencing a system error, such as an updating of the wrong record or an incorrect addition. Errors do occur in computer-based information but precious few can be directly attributed to the computer systems. The vast majority of these errors can be traced to a program logic error, a procedural error, or erroneous data. These are human errors. Hardware errors are usually detected and corrected by the computer system itself.

Computers are very accurate. They can perform their hundreds of thousands of operations with great accuracy. They can run error less for days at a time.

Reliability

Computer output is generally very reliable, subject to the condition that the input data entering the computer should be correct and the program of instructions should be reliable and correct. Incorrect input data and unreliable programs give us computer errors and wrong results. Hence, the phrase GARBAGE IN-GARBAGE OUT (GIGO).

Storage Capability

Computer systems have total and instant recall of data and an almost unlimited capacity to store these data. A typical mainframe computer system will have many billions of characters, and perhaps thousands of graphic images, stored and available for-instant recall. When properly used, a computer can improve the efficiency of an organization. It provides a fast, accurate, and reliable device with which to process data. The storing capacity of a computer is measured in terms of bytes, kilobytes and gigabytes.

Bit	Byte	Kilobyte	Megabyte	Gigabyte
8	1	–	–	–
8,192	1,024	1	–	–
8,388,608	1,048,576	1,024	1	–
8,589,934,592	1,073,741,824	1,048,576	1,024	1

Automation

Computers are quite capable of functioning automatically, once the process is given to the computer. They do not require any instruction from the operator at any stage of the process. Computers can be programmed to perform a series of complex tasks involving multiple programs. Computers will execute the programs in the correct sequence, provided they are programmed correctly.

Diligence

Human beings suffer from physical and mental fatigue. They cannot perform the same task over and over again with the same speed, accuracy and enthusiasm as in the first time. This will affect the performance. Being a machine, a computer does not suffer from such weaknesses. The computer is capable of performing task repeatedly at the same level of speed and accuracy even if it has to carry complex operation for a long period of time.

Versatility

Computers are versatile (can do many types of jobs). It can carry out processes ranging from simple mathematical calculations to highly complex and logical evaluations for any extended period of time. Computers can communicate with other computers and can receive and send data in various forms such as text, video, etc. This ability of the computer to communicate to one another has led to the development of computer networks, Internet, and so on. All this is possible because of computers and other related technologies.

Scientific Approach

The entire approach to solving problems is highly scientific, objective and sequentially carried out, leaving no room for emotional and subjective evaluations made by man, which are sources of potential errors and unjustified results. There are many companies that utilize computers for intangible benefits such as flexibility, ability to accommodate growth and the psychological factor that may give them a competitive edge in attracting consumers to buy their products or services.

Reduced Cost

With the ever-increasing advances being made in the state of the art, the cost of computer equipment has dropped drastically over the years. Hardware costs have been decreasing at an estimated annual rate of 25%. Thus, companies that at one time could not justify the cost of acquiring their own computer system may now find it not only feasible to acquire a system, but cost effective as well.

7. Comment on the notions expressed in the text.

1) Errors do occur in computer-based information but precious few can be directly attributed to the computer systems.

2) When properly used, a computer can improve the efficiency of an organization.

3) The entire approach to solving problems is highly scientific, objective and sequentially carried out, leaving no room for emotional and subjective evaluations made by man.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1. Computers work at an incredible speed.

2. A powerful computer is capable of performing about 3–4 million simple instructions per second.

3. In addition to being fast, computers are also tidy.

4. Errors that may occur can almost always be attributed to occasional errors.

5. Like human beings, computers are highly consistent.

6. Computers only seem to be better than human beings in performing voluminous and repetitive jobs.

7. Computers are versatile machines and are capable of performing any task as long as it can be broken down into a series of logical steps.

8. A piece of information once recorded (or stored) in the computer, can never be forgotten and can be retrieved almost instantaneously.

LISTENING

9. Imagine you are in a computer shop. Choose five things that would improve your digital life. Compare your choices.

10. Listen to two people making enquiries in a computer shop. Do they buy anything? https://www.youtube.com/watch?v=4uk1qrCPlts (min: 8:00)

11. **Complete the conversation in the shop.**

Assistant: Do you need any …..?

Ann: Yes, we are looking for a Mac computer. Have you got any fairly basic ones?

Assistant: Yes, sure. If you would like to come over there.

Ann: what different … are there?

Assistant: At the moment we have got these two models: the iMac, which is a desktop computer with an Intel Core 2 Duo processor … at 2.33 gigahertz, and the portable MacBook, which has a processor … at 2.00 gigahertz. Core Dou technology actually means two cores, or processors, built into a single chip, offering up to twice the speed of a traditional chip.

Ted: So, they are both very …, then. And which one has more memory? I mean, which has more RAM?

Assistant: Well, the iMac has two gigabytes of RAM, which can be … up to three gigabytes, and the MacBook has one gigabyte, expandable to two gigabytes. It all depends on your needs. The iMac is … for home users and small offices. The MacBook is more … if you travel a lot.

LANGUAGE DEVELOPMENT

12. Role play. One of you wants to buy a computer, the other is a shop assistant. Use the prompts and product descriptions below to role play the conversation.

Shop assistant:

– Greet the customer and offer help.

– Show the customer two possible models.

– Give technical specs (describe the processor, RAM and storage capacity). Compare the two different models.

– Give the information required.

– Answer and mention any final details that might persuade the customer to buy the computer.

Customer:

– Explain what you are looking for.

– Ask for some technical specs.

– Ask about any further technical specs (DVD drive, monitor, communications).

– Ask the price.

– Decide which computer to buy or leave the shop.

Toshiba satellite *laptop* 1.0 GHz Core 2 Duo processor 2GB RAM expandable to 4GB 160 GB hard drive Super Multi drive (double layer) 15.4'' wide XGA display Wireless LAN< Wi-Fi compliancy 999$	**Dell desktop PC** AMD Athlon at 2.4 GHz 1GB RAM expandable to 4GB 320 GB hard drive DVD+/-RW drive 17''' LCD monitor 670$	Palm TX handheld Intel312 MHz ARM-based processor 128 MB Flash memory (non-volatile) Support for memory cards 320×480 TFT touch screen Wi-Fi and Bluetooth Lithium-ion battery 1300$

13. Read and translate the text «Log on and learn».

No more teachers? No more books? For today's kids, the Internet has all the answers.

Gadgets come and go and most of them don't have a very long life. The Internet, however, seems to be here to stay. The World Wide Web is now the largest information resource in the world and teenagers can find more or less anything they want there. They can download music and films, watch TV, listen to the radio, send e-mails and even shop online

In the United States for example, more than 78% of kids go online, according to a recent study. A lot of them are just surfing the Web and instant messaging their friends. But 94% of those online said they also used it for schoolwork. This technology has allowed them to access a vast store of knowledge which was inaccessible before. With online tutoring and virtual schools, technology allows students to get specific help. It is also possible to be a part of a study group or discuss school projects with international e-mail pals. Perhaps more than anything, the Internet search engine Google has changed homework habits across the globe. But the problem is that it is so easy to «copy and paste» that teachers need to change homework assignments or projects every year...

E-learning, which simply means learning online is now becoming one of the most popular uses of the Internet. You can choose your own timetable and you can work at your own pace. This means fewer people will give up their studies because they can't combine studies and work.

14. Answer the following questions using your own words as far as possible.

1. Does the author think the Internet will be around for long?

_____

2. How can the Internet help students in their schoolwork?

_____

3. What is the negative aspect of the Internet, according to the text?

_____

4. Why is E-learning becoming popular?

_____

15. Activate pre-existing knowledge and explain why Windows is so popular.

UNIT 7
COMPUTER HARDWARE

LEAD-IN

1. Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:
«But they (computers) are useless. They can only give you answers».
Pablo Picasso

2. Discuss these questions.

– What is the impact of the microcomputer, or «computer-on-a-chip» on modern world?

– Do you know what main physical components determine the performance of a microcomputer?

– What unit performs all the arithmetic, logic, and data handling functions of the *microcomputer*?

3. Watch the video «Computer Hardware».

– While watching the video, write down any new vocabulary you hear.

– Check the definition and slowly build up your own personalised vocabulary booklet.

– Present a short plan so that you can summarize and render what you heard in the video.

– Write a brief summary.

Computer Hardware

https://www.youtube.com/watch?v=zlT-Lg_QFTA (2.17 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

central processing unit (CPU) – центральний процесор;
control unit – пристрій керування;
instruction – машинна команда;
circuit – схема, мікросхема; канал, лінія зв'язку;
disk drive – дисковод;
monitor – монітор;
arithmetic logic unit (ALU) – арифметико-логічний пристрій, АЛП;
register – регістр;
program counter (PC) – лічильник команд, програмний лічильник;
instruction register (IR) – регістр команд;
main memory / internal memory – основна пам'ять, оперативна пам'ять, ОЗП;
secondary storage device – вторинний [зовнішній] пристрій зберігання даних;
RAM (random access memory) – оперативна пам'ять, оперативний запам'ятовуючий пристрій, ОЗП;
ROM (read only memory) – постійний запам'ятовуючий пристрій, ПЗУ;
expansion slot – гніздо розширення, роз'єм розширення;
adapter – адаптер, перехідник;
clock – генератор синхроімпульсів, тактовий генератор;
clock speed – тактова частота;
execute – виконувати;
supervise – наглядати;
overall – повний, загальний, граничний; всеосяжний;
evolve – розвивати(ся); розгортати(ся); еволюціонувати;
temporary – тимчасовий;
permanent – постійний, незмінний; довгочасний; перманентний;
performance – продуктивність, швидкодія, ефективність, характеристика *(роботи машини і т. ін.)*;
architecture – архітектура; побудова;
expand – поширювати(ся); розширяти(ся);
extra – особливий; окремий; додатковий; позачерговий; вищої якості;
execute – виконувати;
program instructions – програмні команди;
specified – зазначений, заданий;

store – запам'ятовувати, зберігати;
high-resolution graphics board – плата графіки високої роздільної здатності;
handle – обробляти.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these word-combinations.

1) super	a) console;
2) exploration	b) operations;
3) embedded	c) purpose;
4) electronic	d) data;
5) data	e) opportunities;
6) provide	f) computer;
7) business	g) process;
8) store	h) brain;
9) production	i) processing;
10) gaming	j) system.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

WHAT IS INSIDE A MICROCOMPUTER?

The nerve centre of a microcomputer is the central processing unit or CPU. This unit is built into a single microprocessor chip – an integrated circuit – which executes program instructions and supervises the computer's overall operation. The unit consists of three main parts:

– the control unit, which examines the instructions in the user's program, interprets each instruction and causes the circuits and the rest of the components – disk drives, monitor, etc. – to be activated to execute the functions specified;

– the arithmetic logic unit (AIU), which performs mathematical calculations (+, –, etc.) and logical operations (and, or, etc.);

– the registers, which are high-speed units of memory used to store and control information. One of these registers is the program counter (PC) which keeps track of the next instruction to be performed in the main memory. Another is the instruction register (IR) which holds the instruction that is currently being executed.

One area where microprocessors differ is in the amount of data – the number of bits – they can work with at a time. There are 8, 16, 32 and 64-bit processors. The computer's internal architecture is evolving so quickly that the new 64-bit processors are able to address 4 billion times more information than a 32-bit system.

The programs and data which pass through the central processor must be loaded into the main memory (also called the internal memory) in order to be processed. Thus, when the user runs an application, the microprocessor looks for it on secondary storage devices (disks) and transfers a copy of the application into the RAM area. RAM (random access memory) is temporary, i.e. its information is lost when the computer is turned off. However, the ROM section (read only memory) is permanent and contains instructions needed by the processor.

Most of today's computers have internal expansion slots that allow users to install adapters or expansion boards. Popular adapters include high-resolution graphics boards, memory expansion boards, and internal modems.

The power and performance of a computer is partly determined by the speed of its microprocessor. A clock provides pulses at fixed intervals to measure and synchronize circuits and units. The clock speed is measured in MHz (megahertz) and refers to the frequency at which pulses are emitted. For example, a CPU running at 500 MHz (500 million cycles per second) is likely to provide a very fast processing rate and will enable the computer to handle the most demanding applications.

7. Comment on the notions expressed in the text.

1) The nerve centre of a microcomputer is the central processing unit.

2) One area where microprocessors differ is in the amount of data they can work with at a time.

3) The power and performance of a computer is partly determined by the speed of its microprocessor.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) The CPU directs and coordinates the activities taking place within the computer system.

2) The arithmetic logic unit performs calculations on the data.

3) 32-bit processors can handle more information than 64-bit processors.

4) A chip is an electronic device composed of silicon elements containing a set of integrated circuits.

5) RAM, ROM and secondary storage are the components of the main memory.

6) Information cannot be processed by the microprocessor if it is not loaded into the main memory.

7) Permanent' storage of information is provided by RAM (random access memory).

8) The speed of the microprocessor is measured in megahertz. One MHz is equivalent to one million cycles per second.

LANGUAGE DEVELOPMENT

9. Read, translate and discuss how different professionals use computers in their work.

A. Computers: friend …

People who have grown up with PCs and microchips are often called the digital generation. This is how some people answered when questioned about the use of computers in their lives.

I have a **GPS**, Global Positioning System, fitted in my car. With this navigation system I never get lost. And the **DVD recorder** is perfect for my children's entertainment.

I use an **interactive whiteboard**, I like a large touchscreen monitor, at class. I find computers very useful in education.

Assistive technology, for people with disabilities, has helped me a lot. I can hardly see, so I use a screen reader, a program that reads aloud onscreen text, menus and icons.

This new **HMD, head-mounted display**, allows me to watch films, and enjoy **virtual reality**, the artificial environment of the latest video games.

The upgraded **wireless network** at my university is great: we can connect our laptops, PDAs and Wi-Fi cell phones to the network anywhere in the campus. Communication is becoming easier and easier.

B. … or foe?

– Our society has developed **technological dependence**. When computers are down, our way of life breaks down: planes stop flying, telephones don't work, banks have to close.

– Computers produce **electronic waste**, plastic cases and microchips that are not biodegradable and have to be recycled or just thrown away.

– They are responsible for health problems, e.g. **computer addiction**, an inappropriate and excessive use of computers.

– **Cybercrime**, crime committed with the help of computers, is creating serious problems.

– Citizens may feel a **loss of privacy** because of unauthorized use of personal data or receiving unwanted electronic messages.

C. Things we can do on the computer …

A secretary: 'I use computers to do the usual office things like write letters and faxes, but what I find really useful is email. We are an international company and I send emails to our offices all over the world.'

A publisher: 'We use PCs to produce all sorts of texts in digital format. We publish e-books (electronic books) and interactive e-learning programs on CD, and we help a local company to design an online newspaper, displayed on the Web.'

A bank manager: 'We use financial software to make calculations and then generate graphs or charts. We also use a database to store information so that it can be easily searched:

A home user: 'I like to retouch photos on my computer; I improve them by making a few touches and then save them on a CD. I also enjoy looking at music portals on the Web. I surf the Web every day and I often download files, I copy music files from the Net to my PC.'

10. Complete these sentences with the suitable words from *section A*.

1. The .....is a piece of software that interfaces with your PC and allows you, via keyboard commands, to get any text information read to you in synthetic speech.

2., as popularized by virtual reality, lets the user immerse him/ herself in a synthetically generated environment.

3. An.....is a touch-sensitive device where a special pen or your finger can act as a mouse.

4. Bill James is now the proud owner of a dark silver Vogue, complete with leather interior, ...navigation, and a…….with LCD TV screens.

11. What problem from *section* B do these sentences refer to? Discuss.

1. We are sorry to announce that most flights are delayed or cancelled.
2. He should go to a psychologist. He spends hours surfing the Web.
3. Technology changes so quickly that we have to scrap computers when they become obsolete.
4. I've been getting emails about offers for lots of different products.
5. My computer system has been broken into and some useful information has been destroyed.

12. Study and keep in mind the difference.

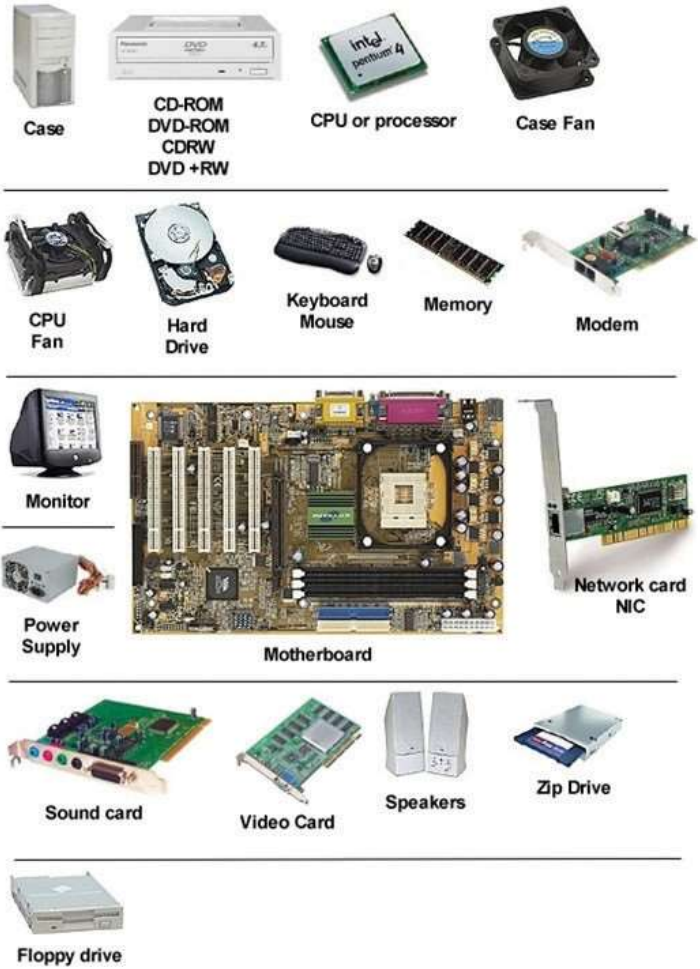
Computer hardware parts

A personal computer is made up of two key elements, which are hardware and software.

What is computer hardware?

Computer hardware is all the parts that you can physically touch with your hands.

Personal computer parts



What is a hard drive?

A hard drive, which can also be called a hard disk drive or HDD, is one of the main parts of all modern computers. The hard drive is used to store all your programs and files. If the drive should become damaged for what ever reason, most likely will lose everything you have stored on your computer if you haven't done some sort of back up.

When you say the following, 'saved on my computer', it is widely understood that you are talking about the hard drive, don't worry

it is fine to use both as sometimes people might not understand what a hard drive is.

Examples of needing a bigger hard drive

What is a hard copy?

A hard copy is a printed version of the data stored on a computer and printed on a piece of paper.

What is a soft copy?

A soft copy is the file stored on the computer.

VIDEO

13. Watch Special Commemorative Issue on the Newsweek.
A look back at the life of Steve Jobs

Video: https://www.nbcnews.com/video/a-look-back-at-the-life-of-steve-jobs-44462147781

14. Fill in the gaps in the text using the following words

Era generosity intensely limited power transplant electronic pride reinvent string equals surgery

Apple Inc. announced tonight that company co-founder and former Chief Executive Steve Jobs has died at the age of 56. Here is a look back at his career.

He was the father of the iPhone, the iPod and the Apple Mac computers turning _____ gadgets into objects of desire. «I think if you do something and it turns out pretty good, then you should go do something else wonderful.» As he was fond of saying, «Wait, there's more!» «Today Apple is going to _____ the phone.» And people did wait in long lines for the first iPhones in 2007. Then three years later they lined up for the iPad changing the way people consume media. «Design plus function _____ the right life style and that's what he felt.»

In 1976 Jobs co-founded Apple Computer and within a few years was worth one hundred million dollars. In 1984 he was showing off his new_____and joy, the Macintosh. «And this has turned out insanely great». As critics hailed the Mac, Jobs was on the losing end of a_____struggle at his company

and left Apple a year later. He went into computer animation acquiring Pixar Studios and striking failure with a_____of hit movies starting with Toy Story «To infinity and beyond!» Jobs came back to Apple in 1996 and began reinventing the Mac dressing it up in a variety of colours. «They look so good you kinda wanna lick them.»

Concerns about the health of Steve Jobs began in 2004 when he underwent_____for pancreatic cancer. A year later he spoke about that during a commencement at Stanford University. «This was the closest I've been to facing death and I hope it's the closest I get for a few more decades.» An_____private man with a quick temper kept reporters at bay saying his health was nobody's business. But Jobs was losing weight, something revealed in these photos taken in 2007 and 2008. In April 2009 he underwent a liver_____. Five months later back on the job at Apple he expressed his gratitude. «I now have the liver of a mid-twenties person who died in a car crash and was generous enough to donate his organs. And I wouldn't be here without such_____.» On August 24th of this year he stepped down as Apple's CEO.

Back in 2005 he offered this bit of advice to the Stanford University grads «Your time is_____so don't waste it living someone else's life. Don't let the noise of others' opinions drown out your inner voice.» Steve Jobs, a man whose own inner voice led him to create some of the most visionary products of the internet _____. Jobs leaves behind a wife and four children.

George Lewis, NBC News, Los Angeles

15. Match the words in bold in the text with the definitions on the right. Put the correct letter into the box next to each word.

1	gadgets		a)	prevented them from coming close
2	lined up		b)	a feeling of thankfulness
3	hailed		c)	shown, displayed
4	acquiring		d)	left his position
5	commencement		e)	praised, said how good it was
6	kept reporters at bay		f)	stood in a line
7	revealed		g)	students who had just got their degrees
8	gratitude		h)	graduation ceremony
9	stepped down		i)	small useful devices or machines
10	grads		j)	getting, buying

16. Fill in the key dates in the timeline of Steve Jobs' life and work.

A timeline of Steve Jobs' life and career

	Steve Jobs co-founds Apple Computer.
	The Makintosh computer goes on sale.
	Jobs resigns from Apple.
	He buys Pixar.
	He comes back to Apple.
	He undergoes surgery for pancreatic cancer.
	He gives his famous commencement speech at Stanford University.
	Apple releases its first smartphone, the iPhone.
	He undergoes a liver transplant.
	The iPad, Apple's tablet computer, goes on sale.
	He steps down as Apple's CEO.
	Jobs dies after a long battle with pancreatic cancer.

17. Activate pre-existing knowledge and write a brief report on microcomputer organization.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.

Bill Gates at hell or heaven?

Bill Gates suddenly dies and finds himself face to face with God. God stood over Bill Gates and said, «Well Bill, I'm really confused on this one. It's a tough decision; I'm not sure whether to send you to Heaven or Hell. After all, you helped society enormously by putting a computer in almost every home in America, yet you also created that ghastly Windows '95 among other indiscretions. I believe I'll do something I've never done before; I'll let you decide where you want to go».

Bill pushed up his glasses, looked up at God and replied, «Could you briefly explain the difference between the two?» Looking slightly puzzled, God said, «Better yet, why don't I let you visit both places briefly, then you can make your decision. Which do you choose to see first, Heaven or Hell?»

Bill played with his pocket protector for a moment, then looked back at God and said, «I think I'll try Hell first.» So, with a flash of lightning and a cloud of smoke, Bill Gates went to Hell.

When he materialized in Hell, Bill looked around. It was a beautiful and clean place, a bit warm, with sandy beaches and tall mountains, clear skies, pristine water, and beautiful women frolicking about. A smile came across Bill's face as he took in a deep breath of the clean air. «This is great,» he thought, «if this is Hell, I can't wait to see heaven».

Within seconds of his thought, another flash of lightning and a cloud of smoke appeared, and Bill was off to Heaven. Heaven was a place high above the clouds, where angels were drifting about playing their harps and singing in a beautiful chorus. It was a very nice place, Bill thought, but not as enticing as Hell.

Bill looked up, cupped his hands around his mouth and yelled for God and Bill Gates was sent to Hell for eternity.

Time passed, and God decided to check on the late billionaire to see how he was progressing in Hell. When he got there, he found Bill Gates shackled to a wall in a dark cave amid bone thin men and tongues of fire, being burned and tortured by demons.

«So, how is everything going?» God asked.

Bill responded with a crackling voice filled with anguish and disappointment, «This is awful! It's nothing like the Hell I visited the first time!! I can't believe this is happening! What happened to the other place with the beaches and the mountains and the beautiful women?

«That was the demo,» replied God.

UNIT 8
MAIN MEMORY: *RAM AND ROM*

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«It has become appallingly obvious that our technology has exceeded our humanity».*
Albert Einstein

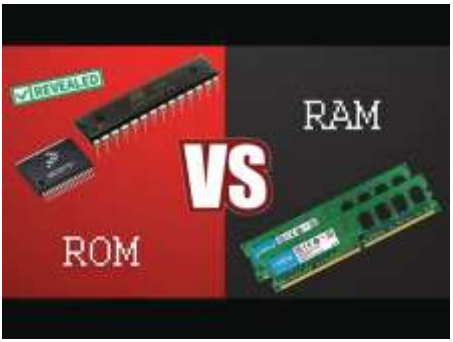
2. Discuss these questions.

– What do you know about computer memory?
– How many types of computer memory are there?
– What is RAM and ROM use?
– What is the major difference between a ROM and a RAM chip?

3. Watch the video «Main Memory: RAM and ROM».

– Before you begin, say the terms you might hear.
– Watch the video and render what problems are explained. Say what you heard in your own words.
– Check whether suggested by you academic vocabulary was used by the presenter and provide their definitions.
– Make up questions about the video.

Main Memory: RAM and ROM



https://www.youtube.com/watch?v=XBv_FY3cqwU (2.23 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

central processing unit (CPU) – центральний процесор;
main board / motherboard – материнська плата;
RAM (random access memory) – оперативна пам'ять, оперативний запам'ятовуючий пристрій, ОЗП;
ROM (read only memory) – постійний запам'ятовуючий пристрій, ПЗУ;
cache memory – кеш-пам'ять;
firmware – вмонтоване програмне забезпечення, програмно-апаратні засоби;
sequential – послідовний;
storage device – накопичувач;
floppy – дискета;
hard disk – жорсткий диск;
application – застосування; прикладна програма;
expand – розширювати, збільшувати;
single in-line memory module (SIMM) – модуль пам'яті з однорядним розташуванням виведень, модуль SIMM;
designate – визначати, позначати;
routine – підпрограма;
instruction – машинна команда;
character – символ;
erase – стирати, видаляти, знищувати;
run an application – запускати програму;
increase the performance of a computer – збільшити продуктивність комп'ютера;
start up the computer – запустити комп'ютер.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these word-combinations.

1) random	a) computer;
2) sequential	b) chip;
3) storage	c) order;
4) hard	d) information;
5) cache	e) access;
6) main	f) memory;

7) electronic	g) application;
8) store	h) disk;
9) run	i) card;
10) start up	j) device.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

MAIN MEMORY: RAM AND ROM

The main memory of a computer is also called the 'immediate access store', as distinct from any storage memory available on disks. Microcomputers make use of two types of main memory: RAM and ROM, both contained in electronic chips connected to the main board of the computer.

RAM stands for 'random access memory' and is the working area of the computer, that is, the basic location where the microprocessor stores the required information. It is called 'random access' because the processor can find information in any cell or memory address with equal speed, instead of looking for the data in sequential order. All the information stored in the RAM is temporary, so it is lost when the machine is turned off. Therefore, if we want to use this information later on, we have to save it and store it on a disk. When running an application, the microprocessor finds its location in the storage device (the floppy or hard disk) and transfers a temporary copy of the application to the RAM area. Consequently, the size of RAM is very important if we want to increase the performance of a computer when several applications are open at the same time or when a document is very complex.

The RAM capacity can sometimes be expanded by adding extra chips. These are usually contained in single in-line memory modules or SIMMs, which are installed in the motherboard of the computer.

We can designate a certain amount of RAM space as a cache in order to store information that an application uses repeatedly. A RAM cache may speed up our work, but it means that we need enough internal memory or a special cache card.

ROM is an acronym for 'read only memory', which implies that the processor can read and use the information stored in the ROM chip, but cannot put information into it. ROM chips have 'constant' information, including instructions and routines for the basic operations of the CPU.

These instructions are used to start up the computer, to read the information from the keyboard, to send characters to the screen, etc. They cannot be changed and are not erased when the power is turned off. For this reason, the ROM section is also referred to as firmware.

RAM vs ROM: What Is The Difference between RAM and ROM?

RAM vs ROM difference	**RAM**	**ROM**
Data	The data is not permanent and it can be altered any number of times.	The data is permanent. It can be altered but only a limited number of times that too at slow speed.
Speed	It is a high-speed memory.	It is much slower than the RAM.
CPU Interaction	The CPU can access the data stored on it.	The CPU can not access the data stored on it. In order to do so, the data is first copied to the RAM.
Size and Capacity	Large size with higher capacity.	Small size with less capacity.
Usage	Primary memory (DRAM DIMM modules), CPU Cache (SRAM).	Firmware like BIOS or UEFI. RFID tags, microcontrollers, medical devices, and at places where a small and permanent memory solution is required.
Cost	It doesn't come cheap.	Way cheaper than RAM.

7. Comment on the notions expressed in the text.

1) Microcomputers make use of two types of main memory: RAMand ROM.

2) All the information stored in the RAM is temporary.

3) ROM is an acronym for 'read only memory', which implies that the processor can read and use the information stored in the ROM chip, but cannot put information into it.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) Memory refers to the computer hardware devices used to process information for further use in a computer.

2) Random-access memory is synonymous with the storage.

3) Volatile and non-volatile memories are two different kinds of semiconductor memory.

4) All the information stored in the RAM is permanent.

5) The RAM capacity can sometimes be expanded by adding extra chips.

LANGUAGE DEVELOPMENT

9. Read the text «How memory is measured: bits or bytes?» and answer the questions.

1. How many digits does a binary system use?
2. What is a bit?
3. What is a collection of eight bits called?
4. What does ASCII stand for?
5. What is the purpose of ASCII?

Computers do all calculations using a code made of just two numbers – 0 and 1. This system is called **binary code**. The electronic circuits in a digital computer detect the difference between two states: ON (the current passes through) or OFF (the current doesn't pass through) and represent these states as 1 or 0. Each 1 or 0 is called a **binary digit**, or **bit**.

Bits are grouped into eight-digit codes that typically represent characters (letters, numbers and symbols). Eight bits together are called a **byte**. Thus, each character on a keyboard has its own arrangement of eight bits. For example, 01 000001 for the letter A, 01 00001 for B, and 01000011 for C.

Computers use a standard code for the binary representation of characters. This is the American Standard Code for Information Interchange, or **ASCII** – pronounced /'aeski/. In order to avoid complex calculations of bytes, we use bigger units such as kilobytes, megabytes and gigabytes.

We use these units to describe the RAM memory, the storage capacity of disks and the size of a program or document.

Memory Capacity Conversion Chart

Term (Abbreviation)	Approximate Size
Byte (B)	8 bits
Kilobyte (KB)	1024 bytes / 10^3 bytes
Megabyte (MB)	1024 KB / 10^6 bytes
Gigabyte (GB)	1024 MB / 10^9 bytes
Terabyte (TB)	1024 GB / 10^{12} bytes
Petabyte (PB)	1024 TB / 10^{15} bytes
Exabyte (EB)	1024 PB / 10^{18} bytes
Zettabyte (ZB)	1024 EB / 10^{21} bytes
Yottabyte (YB)	1024 ZB / 10^{24} bytes

10. Complete these descriptions with the correct unit of memory.

1. A ¬¬¬¬¬_____is about one trillion bytes – about as much text as the books and magazines in a huge library.
2. A ¬¬¬¬¬_____is about one million bytes – about as much text as 300-page novel.
3. A ¬¬¬¬¬_____is about one thousand bytes – equivalent to one sheet of A4.
4. A ¬¬¬¬¬_____is about one billion bytes – about as much text as 1 000 books.
5. A ¬¬¬¬¬_____can store a single character such as the letter h or number 7.

11. Talking points.

Make notes about the features of your computer that you would most like to have. Think about the features in the box.

CPU Speed Optical disk drives Wireless connectivity Minimum/ maximum RAM Monitor Ports and card memory slots Hard disk Software

12. Describe your ideal computer system. Give reasons for your choices using *Useful Language section*:

It's got …, It's very fast. It runs at ..., The standard RAM memory is … and it is expandable …, The hard disk can hold…, I need a large flat LCD screen because …, As for the Internet, ….

LISTENING

Memory in a flash

13. Listen to a salesperson describing two flash products to a potential customer. https://www.youtube.com/watch?v=4uk1qrCPlts (min: 28:15)

Which product (a or b) is the visitor most interested in?

a) The Dragon flash drive

b) The Dragon MP4 player

14. Listen again and tick which features the salesperson mentions for each device.

Features:	The Dragon flash drive	The Dragon MP4 player
Back up computer data		
Transport files between PCs		
Audio and video playback		
FM radio tuner		
Voice recorder		
Games		

15. Listen again and answer these questions.

1. What is the storage capacity of the Dragon flash drive?
2. How do you connect it to the computer?
3. According to the salesperson, what are the advantages of a USB flash drive over a DVD or an external hard drive?
4. Some portable media players are also known as MP4 players. Why?
5. What is the screen size of the Dragon MP4 player?
6. How long does the battery last?

VIDEO

Video worksheet: «Short film 'Sight'»

Watch the film here: https://www.youtube.com/watch?v=lK_cdkpazjI

Pre-watching

16. Choose one of the words related to technology from the table to complete each sentence.

gadget	browse	touchscreen	upload	profile	apps

1. _____ some of our favorite Android_____ in the wonderful collection.

2. These photos look great! Why don't you_____them to your Facebook page so your friends can see them?

3. The only problem I have with these_____devices is that I get greasy fingerprints everywhere and have to clean it every day!

4. Many technological_____make our lives easier and more fun!

5. Check out my friend's_____picture. You´ll love it!

2. In pairs/groups of three think of the following questions:

a) What do you think an app called 'sight' might do?

b) What will the short film be about?

While-watching

17. Answer these questions orally:

– Were your predictions right? What is Sight and what can you use it for?

– What may be the advantages or disadvantages of this gadget?

– Would you like to have a device like this one? Will you use it? What will you use it for?

– What's 'Wingman'? What does Patrick use it for?

After-watching

18. Look at the description of 'Wingman', the app from the film. In groups, create an app you would like to have in the future and write a description.

UNIT 9
INPUT AND OUTPUT DEVICES

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«Technology is a useful servant but a dangerous master».*
Christian Lous Lange

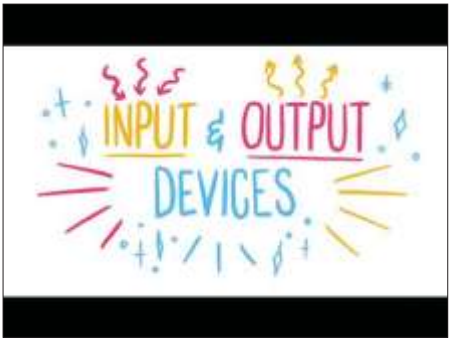
2. Discuss these questions.

– How can operations in a computer system be performed?
– What devices enable computers to operate effectively and efficiently?
– What is the difference between an input and output device?
– What modern input and output devices can you name?

3. Watch the video «Input and output devices».

– While watching the video, write down any new vocabulary you hear.
– Check the definition and slowly build up your own personalised vocabulary booklet.
– Render what you remember about the video. Say what you heard in your own words.

Input and Output Devices



https://www.youtube.com/watch?v=NkoS2JXaBuM (1.55 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

input device – пристрій вводу;
output device – пристрій виводу;
Central Processing Unit (CPU) – центральний процесор, ЦП;
image – образ, зображення;
digital camera – цифрова камера;
feed data – завантажувати дані;
keyboard – клавіатура;
typewriter – друкарська машинка;
key – клавіша;
typing – друкування, набір тексту;
layout – схема розміщення;
cursor – курсор, покажчик;
click – клацати, натискати кнопку миші;
scan – переглядати, сканувати;
convert – перетворювати, конвертувати;
scrolling – прокручування, скролінг, перегляд;
monitor – монітор;
printer – принтер;
speaker – динамік ПК;
woofer – динамік для низьких звукових частот;
Cathode Rays Tube (CRT) – електронно-променева трубка, ЕПТ;
Liquid Crystal Display (LCD) – рідкокристалічний екран;
browsing the Internet – переглядати мережу Інтернет;
launch a program – запускати програму;
come in handy – стати в нагоді;
enhancing sound quality – підвищення якості звуку.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these word-combinations.

1) input	a) keys;
2) perform	b) system;
3) word	c) task;
4) feed	d) camera;
5) numeric	e) the Internet;
6) alphabetic	f) document;
7) computer	g) device;

8) browse	h) data;
9) process	i) order;
10) digital	j) data.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

INPUT AND OUTPUT DEVICES

A computer system is more than just a computer. It is a combination of «components working together to perform a specific task». When these components are attached to the Central Processing Unit then a user can perform tasks, from playing movies, listening to songs, playing games, preparing your assignments in MS word, or browsing the Internet. We call these components as input and output devices. Without these input / output devices, a computer is just a dumb machine that can't operate effectively and efficiently to perform a specific task.

Input and output devices perform two types of operations in a computer system. Input is any data that we send to a computer for processing. That can be an image from a digital camera, or some letters typed via keyboard in a word document. Output is the result of the data we can see through some output device like a picture displayed by the monitor, a word document printed by a printer etc.

An input device feeds data to the computer system for processing. Keyboard is the most common input device of a computer system. The keyboard resembles a typewriter. Modern keyboards have more than just the letters and numeric keys. They have multimedia keys for volume control, Play / Pause videos etc. Every single key on a keyboard is assigned binary numbers to it which transmits that binary pattern to the computer.

The keys on a keyboard are not in alphabetic order. The keys are laid out in the QWERTY order so that those keys that are often struck in succession were not next to each other. Therefore, the QWERTY layout is intended for slow typists. While for speed typing there is another keyboard available with «Dvorak» layout.

Same is the case with the numeric keys layout. If you have noticed, the layout of a phone is different from that of a numeric keys on a keyboard. It's because earlier phones cannot handle fast diallers. However, the layout of numeric keys on a keyboard is designed for speed typing.

Mouse is another commonly used input device of a computer system. The mouse is a pointing device that moves the cursor on the screen. You can place the cursor on icons and by clicking you can launch a program. A typical mouse has two buttons, the left and right clicking buttons and a wheel in the center for scrolling. A user can perform many operations through a mouse, like selecting or arranging different program icons on the desktop, copying / pasting text in a word document, and scrolling webpages. The mouse can also come in handy while playing computer games.

Scanner is the third important input device of a computer system. A scanner converts printed documents in to images. Some types of scanners scan documents and produce the results in black and white images. The scanner operates in the same manner as a photocopier. A colored scanner works somewhat in a complicated manner as compared to a simple scanner.

Digital cameras are used to capture images. Those images are then transferred to a computer when the camera is connected to the computer. Mostly the digital camera images are in JPEG format.

Output devices display the processed form of data to the end user. Common output devices include monitor, printer, and speaker.

Monitor is the most important output device of a computer system. The monitor is the display screen of a computer. Cathode Rays Tube (CRT) and Liquid Crystal Display (LCD) are the two types of monitors.

The CRT monitor looks like a television. At one end of CRT monitor there is a device that produces electrons and bombards it towards the other end where the screen is located, resulting in the screen glowing because of a substance on the screen. The CRT monitors are expensive and occupy more space as compared to LCD Monitors.

LCD stands for Liquid Crystal Display. It has the properties of both liquid and solid, that's why it has a sharp and better picture quality than CRT monitors. LCD monitors are relatively more expensive than CRT monitors. Basically, the LCD monitors were designed for laptops. Nowadays they are getting popular because of the slim size and flat screen.

A printer takes print commands from a computer and print out text / images on paper. Different types of printers are available for various purposes. A printer for office use must be heavy duty and fast while for photographs it must produce high quality prints. Dot-Matrix, Ink-Jet, Laser-Jet are the different types of printers. Print quality of Laser-Jet printer is excellent as compared to Ink-Jet or other types of printers,

but they are relatively more expensive than the others. Most laser printers produce black & whiter prints while some can produce color prints as well. The color laser printers are much more expensive than black & white laser printers.

Speaker is an important part of a computer system. Some systems have a built-in speaker, though they are small in size. Speaker is an essential part of a computer because they can notify about various system notifications through various sounds. Big speakers, woofers and sub-woofers are used for enhancing sound quality or creating a mini home theatre.

7. Comment on the notions expressed in the text.

1) Without the input / output devices, a computer is just a dumb machine.

2) Input and output devices perform two types of operations in a computer system.

3) The numeric keys layout of a phone is different from that of numeric keys on a keyboard.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) A keyboard typically contains keys for individual letters, numbers and special characters, as well as keys for specific functions.

2) A keyboard is connected to a computer system using a broadband connection.

3) Most keyboards for desktop computers also contain a separate numeric keypad to the left.

4) The typical keyboard layout has remained remarkably unchanging over the years.

5) Most keyboards around the world contain regular Greek characters.

6) The function keys typically perform a very specific task within a particular software application.

7) We usually use a fountain pen to enter the text into a computer.

8) On smaller keyboards, like those on most laptops, numeric keypads are much smaller due to space constraints.

9) The most widely used layout in the English language is called QWERTY, named after the sequence of the first six letters from the top left.

LANGUAGE DEVELOPMENT

9. Complete this text about the mouse with verbs from the box.

Click double-click drag grab select move control

A mouse allows you to …… the cursor and move around the screen very quickly. Making the same movements with the arrow keys on the keyboard would take much longer. As you … the mouse on your desk, the pointer on the screen moves in the same direction. The pointer usually looks like an I-bar, an arrow or a pointing hand, depending on what you are doing.

A mouse has one or more buttons to communicate with the computer. For example, if you want to place the insertion point or choose a menu option, you just … (press and release) on the mouse button, and the option is chosen.

The mouse is also used to … text and items on the screen. You can highlight text to be deleted, copied or edited in some way.

The mouse is widely used in graphics and design. When you want to move an image, you position the pointer on the object you want to move, press the mouse button, and … the image to a new location on the screen. Similarly, the mouse is used to change the shape of a graphic object. For example, if you want to convert a square into a rectangle, you … one corner of the square and stretch it into a rectangle.

The mouse is also used to start a program or open a document: you put the pointer on the file name and … on the file name – that is, you rapidly press and release the mouse button twice.

10. Talking points.

In groups, discuss these questions.

– What are the benefits of speech recognition software?

– What kind of tasks would you find speech recognition useful for?

– Who would benefit most from advances in speech recognition technology?

– What is the future of this kind of technology?

– Do you think it will ever be possible to control your computer using only your thoughts?

11. Interact with your computer.

Study the input devices.

Input devices are the pieces of hardware which allow us to enter the information into the computer: *keyboard, mouse joystick, digital camera, webcam, scanner, microphone, graphics tablet, touchscreen, light pen, barcode reader, touchpad, trackball.*

Which input device would you use for these tasks?

– To play computer games.
– To copy images from paper into a computer.
– To read price labels in a shop.
– To select text and click on links on web pages.
– To enter drawings and sketches into a computer.
– To input voice commands and dictate text.
– To draw pictures or select menu options directly on the screen.
– To take and store pictures and then download them to a computer.

12. Debate: Is cyber communication a good thing for society? Give your personal opinion. Use expressions such as *I agree, I disagree, I think, in my opinion, and so forth.*

Yes, it's a good thing	No, it's a bad thing
It's easier to **stay in touch** with friends and family. You can communicate **across the miles.** If you want learn about a new culture or to practice a new language you can contact people abroad. Cyber communication saves time. You don't need to go **door to door** or **put pen to paper to** communicate with people any more. You can send messages to large groups of people in a few seconds. Cyber communication is **as cheap as chips**. It's free to use Facebook, make Skype calls and send Whatsapp messages as long as you have a suitable device and a wifi connection. Advances in technology mean that computers and smartphones are cheaper too.	We're losing the art of real communication. The increasing use of electronic devices means we're **drifting away from** face to face communication. Text speak has also led to a deterioration in written communication. It's easier to **get you wires crossed**. You can't see someone's body language or listen to someone's intonation when you receive an electronic message. This can lead to confusion and misunderstanding. There are lots of **dodgy** people in the world and it's easy for someone to lie on the internet. You have to be careful about what data you trust and who you share things with.

Cyber communication has led to increased knowledge sharing. If you have a question you can **look up** the answer on the internet. Free online courses are **two a penny** on the internet. It's easier to communicate electronically now. Advances in technology make surfing the internet and sending messages **a piece of cake.** Cyber communications helps to publicise human rights abuses, animal abuse, corruption and other criminal acts. This should help to **curb** this behaviour. Cyber communication gives vulnerable people a voice. Anonymous posting increases **freedom of expression** and protects **whistleblowers**. Cyber communication **breaks down barriers.** People with different political views and people from different social classes and countries regularly communicate on the internet. Many stars communicate directly with their fans. Cyber communication can help people feel safer. For example, children can call their parents to let them know where they are. If your car breaks down you can call for assistance without leaving your vehicle. Hikers can call mountain rescue if they get lost.	Stuff you post online **can come back to haunt you.** It's difficult to delete things you post online so all the **daft** things you do will be there for all the world to see. Cyber communication presents new privacy concerns. There are a lot of stories in the media about press and government **snooping**. Your information is also vulnerable to **hackers**. Cyber communications have resulted in new social divides. Not all people can afford a computer, Smartphone or broadband connection. There are some **silver surfers** but the majority of elderly people don't know how to use a computer or the internet. Cyber communication isn't healthy. Increasing use of electronic devices is turning us all into **couch potatoes.** Staring at screens can also damage your eyes. If your **out in the sticks** you probably won't have internet connection or coverage to use mobile phones. Cyber communications can be used for antisocial purposes. Online gambling sites cause misery. It makes it easier for criminals to steal your information and for terrorists to **hatch their plans**. Internet addiction is a growing problem. Many people are **hooked** on social networking sites and **glued to a screen** for most of the day.

LISTENING

Describing Input devices

13. Listen to a computer technician describing three input devices. Write which device he is talking about.

https://www.youtube.com/watch?v=4uk1qrCPlts (min: 11:29)

1. This device is_____enter information into a computer.
2. … it may also_____function keys and editing keys_____special purposes.
3. This is a device____the cursor and selecting items on the screen.
4. It usually____two buttons and a wheel.
5. … the user____activate icons or select items and text.
6. It____detecting light from the computer screen and is used by pointing it directly at the screen display.
7. It____the user_____answer multiple-choice questions and …

Audio script

1. This device is used to enter information into the computer. As well as having normal typewriter keys for characters and a numeric keypad, it may also have function keys and editing keys for special purposes.

2. This is a device for controlling the cursor and selecting items on the screen. The ball underneath is rolled in any direction across the surface of a desk to move the cursor on the screen. It may have an optical sensor instead of a ball. It usually features two buttons and a wheel. By clicking a button, the user can activate icons or select items and text. A wireless version works without cables.

3. In shape, this input device is similar to an ordinary pen. It works by detecting light from the computer screen and is used by pointing it directly at the screen display. It allows the user to answer multiple-choice questions and to draw diagrams or graphics.

14. Listen to an interview and tick the features that are mentioned.

https://www.youtube.com/watch?v=4uk1qrCPlts (min: 12:42)

Speech recognition systems:

– need a good sound card and a microphone.
– can take dictation with accuracy.
– allow you to create and compile a computer program.

– allow you to execute programs and navigate around menus using voice commands.

– allow you to surf the Web by speaking.

– allow you to design graphics.

15. Listen again and answer these questions.

1. What do people usually use to communicate with a computer?
2. How do you get the best results from speech recognition software?
3. What rate of accuracy is possible with the software?
4. How can you train the software to be more accurate?
5. What kinds of words aren't in the software's dictionary?

16. The Internet has lots of websites where you can get free advice and software how to keep your virus protection updated. Activate pre-existing knowledge and summarize what we should do to improve our computer security?

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.
Great news!

Bill Clinton, Boris Yeltsin, and Bill Gates were called in by God. God informed them that he was very unhappy about what was going on in this world. Since things were so bad, he told the three that he was destroying the Earth in 3 days. They were all allowed to return to their homes and businesses and tell their friends and colleagues what was happening. God did tell them though, that no matter what they did he was «not» changing his mind.

Bill Clinton went in and told his staff, «I have good news and bad news for you. First the good news . . . there «is» a God. The bad news is that he is destroying the Earth in 3 days.»

Boris Yeltsin went back and told his staff, «I have good news and terrible news. The first is that there «is» a God. The second is that he is destroying the Earth in 3 days.»

Bill Gates went back and told his staff, «I have good news and good news. First, God thinks I am one of the three most important people in the world. Secondly, you don't have to fix the bugs in Windows 95.

UNIT 10

COMPUTER KEYBOARD

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution».*
Albert Einstein

2. Discuss these questions.

– What is a keyboard used for?
– How is a keyboard connected to a computer system?
– What does a keyboard typically contain?
– What is the most widely used layout in the English language called?

3. Watch the video «Computer Keyboard».

– Watch the video and write down the nouns.
– Watch again and write down the verbs.
– Watch a third time and write down the adjectives.
– Write a brief summary using the nouns, verbs and adjectives you wrote down.

Computer Keyboard.

https://www.youtube.com/watch?v=LAutjbYnco0 (3.27 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

key – клавіша;
keyboard – клавіатура;
typing – уведення із клавіатури;
character – символ;
specific functions – конкретні функції;
cable – шнур;
wireless connection – безпровідне з'єднання;
original layout – первинна схема розміщення;
typewriter – друкарська машинка;
alphanumeric keys – алфавітно-цифрові клавіші;
special keys – керуючі клавіші;
character keys – посимвольні клавіші;
editing keys – клавіші редагування;
modifier keys – модифікуючи клавіші;
navigation keys – навігаційні клавіші;
lock keys – блокувальні клавіші;
function keys – функціональні клавіші;
cursor keys – клавіші керування курсором;
numeric keypad – цифрова клавіатура;
constraints – обмеження;
typing skills – навички уведення із клавіатури;
power cord – шнур живлення;
plug in – під'єднати, під'єднувати;
reboot a computer – перезавантажувати комп'ютер;
log off / quit – вийти з системи;

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these word-combinations.

1) character	a) connection;
2) input	b) skills;
3) editing	c) off;
4) numeric	d) device;
5) accomplish	e) task;
6) log	f) characters;
7) computer	g) letter;

8) typing	h) keypad;
9) wireless	i) keys;
10) capital	j) keyboard.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

A COMPUTER KEYBOARD – PARTS, LAYOUT AND FUNCTIONS

A computer keyboard is an input device used to enter characters and functions into the computer system by pressing buttons, or keys. It is the primary device used to enter text. A keyboard typically contains keys for individual letters, numbers and special characters, as well as keys for specific functions. A keyboard is connected to a computer system using a cable or a wireless connection.

Most keyboards have a very similar layout. The individual keys for letters, numbers and special characters are collectively called the character keys. The layout of these keys is derived from the original layout of keys on a typewriter. The most widely used layout in the English language is called QWERTY, named after the sequence of the first six letters from the top left.

Other sets of keys common to almost all keyboards are entering and editing keys (e.g., Enter, Delete, Insert), modifier keys (e.g., Control, Shift), navigation keys (e.g., arrows for up, down, left, right) and lock keys (e.g., Caps Lock). Additional keys are very operating system specific (such as the Windows and Apple keys).

Most keyboards also include a set of function keys at the top (F1, F2, etc.). The function keys typically perform a very specific task within a particular software application. So, what they do may depend on what you are doing on your computer at the time.

Most keyboards for desktop computers also contain a separate numeric keypad to the right. Even though there are numeric keys already in a row near the top, having them all close together makes it faster to enter numeric data. On smaller keyboards, like those on most laptops, these numeric keypads are typically no longer present due to space constraints.

There are many different variations on this layout, although most manufacturers follow the general pattern. However, this general layout

has remained remarkably unchanging over the years. This has made it easy for users to transition from one computer system to the next and to use their typing skills on multiple devices.

For many tasks, you need to press more than one key at the same time. For example, to get a capital letter 'A' you need to press the Shift key and the A key at the same time. When reading or writing instructions for how to accomplish a particular task, this would be described as 'Shift + A.' As another example, in most software applications, Ctrl + S means to save the current document. If you have been using computers for some time, you are probably familiar with a number of such combinations.

Do you want to know the most famous combination of all? Ctrl + Alt + Del, also referred to as Control-Alt-Delete. In older computer systems, this actually rebooted your computer. Sort of like pulling the power cord and plugging it back in again. In more modern versions of the Windows operating system, the combination brings up options to log off or shut down, as well as options to force a particular software application to quit. This is useful if you are not able to exit an application in a regular fashion.

Keyboards are language specific. While most keyboards around the world will also contain regular English characters, they may contain separate keys for commonly used characters in their local language that are not used in English, such as the accented letters in French. In addition, languages like Japanese that use a totally different set of characters need unique keys for those characters. Users can then switch between their own language and English characters.

7. Comment on the notions expressed in the text.

1) Most keyboards have a very similar layout.

2) For many tasks, you need to press more than one key at the same time.

3) Keyboards are language specific.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) A keyboard usually includes alphabetic, numerical, and common symbols used in everyday transcription. Keyboards for personal computers are connected to the machine through serial or USB plugs. See also QWERTY keyboard, Dvorak keyboard.

2) A keyboard is connected to a computer system using a broadband connection.

3) Most keyboards for desktop computers also contain a separate numeric keypad to the left.

4) The typical keyboard layout has remained remarkably unchanging over the years.

5) Most keyboards around the world contain regular Greek characters.

6) The function keys typically perform a very specific task within a particular software application.

7) We usually use a fountain pen to enter the text into a computer.

8) On smaller keyboards, like those on most laptops, numeric keypads are much smaller due to space constraints.

LANGUAGE DEVELOPMENT

VIDEO

9. Watch the «10 Keyboard Combinations That Can Make Your Life Easier»
video providing recommendations concerning how to save time and increase productivity of computer users.

Follow this link: https://www.youtube.com/watch?v=HG5aNPH0eKs

Find out the following.

– What two groups are computer users usually divided into?

– How can you increase your productivity when working with a keyboard?

– What are 10 keyboard shortcuts that will turn you into a power user?

10. Match up a word (1–7) with its definition (a–g).

1) application
2) layout
3) peripheral devices
4) keyboard
5) data
6) character
7) letter

a) External input device used to type data into some sort of computer system whether it be a mobile device, a personal computer, or another electronic machine;

b) Auxiliary equipment used for computer input (keyboard, mouse, scanner), output (printer, speaker), storage (hard disk, CD drive), communication (modem, router) or other functions under the direct control of a computer;
c) The plan or design or arrangement of something;
d) A program (as a word processor or a spreadsheet) that performs one of the major tasks for which a computer is used;
e) A symbol (as a letter or number) that represents information; also: a representation of such a symbol that may be accepted by a computer;
f) Information that is produced or stored by a computer;
g) Any of the set of symbols used to write a language, representing a sound in the language.

11. Fill in the gaps in the sentences.

1. A computer keyboard is an input device used to enter characters and functions into the computer system by_____, or keys.
2. The individual keys for letters, numbers and special characters are collectively called the_____.
3. The most widely used layout in the English language is named after the _____ of the first six letters from the top left.
4. The set of keys such as Enter, Delete, Insert common to almost all keyboards are entering and _____ keys.
5. On smaller keyboards, like those on most laptops, _____ keypads are typically no longer present due to space constraints.
6. Most keyboards also include a set of_____keys at the top (F1, F2, etc.).
7. In more modern versions of the Windows operating system, the combination brings up options to_____or shut down, as well as options to force a particular software application to quit.
8. While most keyboards around the world will also contain regular English characters, they may contain separate keys for commonly used characters in their_____that are not usedin English.
9. For many tasks, you need_____more than one key at the same time. 10. In more modern versions of the Windows operating system, the combination brings up options to log off or_____, as well as options to force a particular software application to quit.

12. Match these descriptions with the names of keys.

Space Bar Shift Key Numeric Keypad Enter Key Function Key Touchpad Character Set

a) The key that you press on a computer keyboard when you want to write a capital letter;
b) Computing a small flat surface on a laptop computer that you touch with your finger in order to move the cursor on the screen;
c) The long narrow bar at the front of a computer keyboard that you press to make a space between words when you are typing;
d) A special button on a computer keyboard that is used for a particular operation in a program. They are keys near the top of a keyboard marked 'F1' to 'F12';
e) The part of a computer keyboard to the right of the main keys that has keys with numbers on them;
f) A key on a computer keyboard that makes the computer perform an action or start a new line of writing;
g) A complete set of letters, numbers, or symbols that can be used by a computer.

13. Read the texts and do the exercises A and B.
Text 1. The implications of humanoid robots as laboursaving devices are more ominous than most people realize.

In the not-too-distant future, artificial intelligence will advance to the point where robots can perform useful functions in our everyday lives. But it's not just artificial intelligence that needs to advance in order to enable useful humanoid robots; we also need major advancements in portable power, vision recognition, touch sensing, and even muscle control.

Language detection capabilities are also desperately needed before we will see useful robots, but assuming that these technical hurdles will at

some point be resolved, we will eventually end up with useful humanoid robots that can start to do some things for us around the house, around the office, around medical facilities, and other similar places.

Initially, these robots will be perceived as useful. It's sort of the way that people now use the floor sweeping robot Roomba, which wanders aimlessly around your house clogging its wheels with hair and dust. But eventually, as humanoid robots become more and more useful, they will begin to compete with human labour, and at that point we have a collision of interest. We'll eventually have the large, powerful robot-manufacturing corporations, which will probably be Japanese companies, facing off against the minimum-wage labour force.

Let's face it, if humanoid robots can flip burgers then you probably don't need to hire people to flip burgers, and there are many similar menial jobs that robots could be taught to do. It's not a stretch to imagine these machines could be programmed to clean floors and toilets, or carry objects such as supply items in a hospital or office supplies in a work environment. Robots could help with gardening, construction and, of course, security. If you have a roving robot that walks around your house or office keeping an eye on things, then you probably don't need to hire security guards to do it.

http://www.naturalnews.com

Text 2. Connected Living: Smart home of the future debuts at CeBIT. The 'Smart Home' would be able to find the cheapest electricity, warn of potential problems and use applications to combine and simplify everyday tasks.

It may seem like a Star Trek idea, but the home's intelligent technology for living would use computers to close doors by themselves, turn lights on and off when the last person leaves a room and switch heating to energy-saving mode. And that's just to start.

The futuristic 'Smart Home' debuts to digital industry experts and the general public over some

200 square metres 1st - 5th March at the CeBIT trade fair in Germany. The home will offer features designed to meet particular needs of singles, families and seniors.

Easing everyday tasks while saving energy

One of the innovations on display includes a Home Service Platform, a kind of control centre from which various services and systems are controlled for home networking, among them household appliances, entertainment systems, heating, lighting and monitoring systems for burglary, fire or water damage.

Of special interest, is that the new home would enable household devices to communicate in real time over a so-called Home Service Box, an integrated add-on application (App) for energy management, which would also show a device's energy consumption. The system would be able to communicate real-time messages with its user and turn on a household device.

Additional clever home options to feature at CeBIT include programmes for digital identification at the door, light control in individual rooms and the connection of Internet TV with mobile devices like iPads. Connected Living options will include such clever ideas as a personal trainer connected to a home exercise machine that coordinates with Internet TV or a personal chef in the kitchen. Of interest to senior citizens or the disabled, the Home Service Platform would also be able to communicate medical data in case of emergency.

Best of all, the Home Service Platform will not be tied to any particular equipment manufacturer, but rather it is to work on an open standard that can be networked with devices from different manufacturers. The Home Service Box is to make its way into stores in Germany within the next two years.

A-Say whether the following sentences are TRUE or FALSE. Quote the texts to justify your choice.

1- It's necessary to make more developments to have useful humanoid robots.

2- People's reaction to the use of robots is going to change.

3- One of the immediate consequences of using of robots is unemployment.

4- The «smart house» is prepared to satisfy old people's needs.

5- The Home Service Platform was designed to fulfil kids' needs.

B-Reread text 2 and answer the following questions.

1- Point out 4 things the «smart house» will do.

2- What is the «Home Service Box»?

3- When and where will it appear in the market?

14. Make a list of uses of robots at home and at work. Write reasons for using it at home or at work.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.

Science class

The teacher of the earth science class was lecturing on map reading. After explaining about latitude, longitude, degrees and minutes the teacher asked, «Suppose I asked you to meet me for lunch at 23 degrees, 4 minutes north latitude and 45 degrees, 15 minutes east longitude…?»

After a confused silence, a voice volunteered, «I guess you'd be eating alone.»

UNIT 11

BASIC CLASSIFICATION OF SOFTWARE

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«Getting information off the Internet is like taking a drink from a fire hydrant».*
Mitch Kapor

2. Discuss these questions.

– How can the user interact with a computer, its hardware, or perform tasks?

– What is the difference between software and hardware?

– How do you use computer software?

3. Watch the video «Basic Classification of Software».

– Before you begin, say the terms you might hear.

– Watch the video and render what you remember about it. Say what you heard in your own words. Check whether suggested by you academic vocabulary was used by the presenter and provide their definitions.

– Extend the story by saying what you think might happen as alternatives to what is presented in the video. For example:

– Write down any thoughts that come to mind about what you've seen.

Basic Classification of Software

https://www.youtube.com/watch?v=BTB86HeZVwk (5.47 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

software – програмне забезпечення, ПЗ;
hardware – апаратні засоби, апаратура, устаткування, апаратне забезпечення;
variable – змінний, перемінний;
device – пристрій, прилад;
application software – прикладне програмне забезпечення, прикладні програми;
system software – системне програмне забезпечення;
operating system – операційна система, ОС;
middleware – міжплатформенне програмне забезпечення, зв'язувальне ПЗ;
utility – утиліта, сервісна програма;
interface – інтерфейс;
software engineering – програмо-техніка, інженерія розроблення програмного забезпечення;
kernel – ядро, серцевина;
means – засіб;
availability – наявність, доступність;
a remote work request – запит на дистанційну роботу;
carry out testing – проводити тестування;
develop intuitive user interface – розробити інтуїтивно зрозумілий інтерфейс;
handle complexities – впоратися зі складностями;
different walks of life – різні сфери життя.

5. Match up a word on the left with a word on the right to make a ommon word partnership. Make up some sentences of your own using these wordcombinations.

1) application	a) computer;
2) operating	b) team;
3) software	c) testing;
4) carry out	d) engineering;
5) operate	e) application;
6) user	f) accounting;
7) guide	g) software;
8) run	h) design;

9) engineering	i) interface;
10) financial	j) system.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

WHAT IS SOFTWARE?
BASIC CLASSIFICATION OF SOFTWARE

Software is a general term for the various kinds of programs used to operate computers and related devices. The term hardware describes the physical aspects of computers and related devices. Software can be thought of as the variable part of a computer and hardware the invariable part. Software is often divided into application software (programs that do work users are directly interested in) and system software (which includes operating systems and any program that supports application software). The term middleware is sometimes used to describe programming that mediates between application and system software or between two different kinds of application software (for example, sending a remote work request from an application in a computer that has one kind of operating system to an application in a computer with a different operating system).

An additional and difficult-to-classify category of software is the utility, which is a small useful program with limited capability. Some utilities come with operating systems. Like applications, utilities tend to be separately installable and capable of being used independently from the rest of the operating system.

In earlier times, software was simple in nature and hence, software development was a simple activity. However, as technology improved, software became more complex and software projects grew larger. Software development now necessitated the presence of a team, which could prepare detailed plans and designs, carry out testing, develop intuitive user interfaces, and integrate all these activities into a system. This new approach led to the emergence of a discipline known as software engineering.

Software engineering provides methods to handle complexities in a software system and enables the development of reliable software systems, which maximize productivity. In addition to the technical aspects of the software development, it also covers management

activities which include guiding the team, budgeting, preparing schedules, etc. The notion of software engineering was first proposed in 1968. Since then, software engineering has evolved as a full-fledged engineering discipline, which is accepted as a field involving in-depth study and research. Software engineering methods and tools have been successfully implemented in various applications spread across different walks of life.

The software family is categorized into two broad branches – system software and application software. System software is the base level software needed to run any application. It has to be present for the applications software to function. This software decides which program gets priority in the use of the various resources, such as disk, printer, or memory. It translates the application software into a form understandable by the computer. System software understands the computer's insides, and makes it easier for the uninitiated to fruitfully use the computer without knowing its nuts and bolts. Considering the hardware as the kernel, we can liken system software to the immediate layer after it and application software to the outer layer.

Application software is software designed to specifically perform a particular user function or application. For the application software, the computer is a means, not the focus. The project management package the manager may be using is application software. Application software is the software for the user who uses the computer to do the processing and give the results needed. It could be for any area – be it financial accounting or payroll, operations research or engineering design.

In any computer, system software availability is a major factor in deciding the complexity of the application software that can be built for it, as it is the system software that determines the limits to which the computer can be taken. It is this inner core of system software that makes it possible for users to access the hardware and dictate terms to it. Making system software is thus a specialized field, and those who venture into it are normally specialists in the computer field.

7. Comment on the notions expressed in the text.

1) Software can be thought of as the variable part of a computer.

2) The software family is categorized into two broad branches – system software and application software.

3) Application software is software designed to specifically perform a particular user function or application.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) Software is a generic term used to describe computer programs.

2) Software is often divided into two categories: system software and application software.

3) Without software, most computers would be useless.

4) Without an operating system, the browser could not run on your computer.

5) Although application software is thought of as a program, it can be anything that runs on a computer.

6) Once the software is installed on the computer hard drive, the program can be used anytime by finding the program on the computer.

7) Examples of system software include office suites, gaming applications, database systems and educational software.

8) Application software includes device drivers, operating systems (OSs), compilers, disk formatters, text editors and utilities helping the computer to operate more efficiently.

9) Application software can be a single program or a collection of small programs.

LISTENING

9. Listen to two friends talking about how to move text in Word. How many steps are involved in carrying out the Cut and Paste task?

https://www.youtube.com/watch?v=4uk1qrCPlts (min: 33:17)

10. Listen again and complete the dialogue.

Anna: Ben, do you know how I can move this paragraph? I want to put it at the end of this page.

Ben: Er … I think so. (1)_____, use the mouse to select the text you want to move. (2)_____choose the Cut command from the Edit menu.

Anna: (3)_____?

Ben: Yes. The selected text disappears and goes onto the clipboard. (4)_____you find where you want the text to appear and you click to position the insertion point there.

Ann: Mm, OK. Is that (5)_____?

Ben: Yes, if that's where you want it. (6)__, choose Paste from the Edit menu, or hold down Ctrl and press V. (7)____, click that the text has appeared in the right place.

Anna: OK, I've (8)_____. Is that (9)_____?

Ben: Yes, that's it. If you make a mistake, you can choose Undo from the Edit menu, which will reverse your last editing command.

Anna: Brilliant! Thanks a lot.

Ben: That's OK, it's my pleasure.

11. Choose the proper term for the following definitions.

1. A general term for the various kinds of programs used to operate computers and related devices is … .

a) firmware b) hardware c) software d) middleware;

2. The term … is sometimes used to describe programming that mediates between application and system software or between two different kinds of application software.

a) firmware b) hardware c) software d) middleware;

3. Computer programs contained permanently in a hardware device (such as a read-only memory) are … .

a) firmware b) hardware c) software d) middleware;

4. The term … describes the physical aspects of computers and related devices.

a) firmware b) hardware c) software d) middleware;

5. A small useful program with limited capability is … .

a) application b) programming c) tool d) utility;

6. A branch of computer science that deals with the design, implementation, and maintenance of complex computer programs is … .

a) software development b) software engineering c) preparing schedules d) system software;

7. … is the base level software needed to run any application.

a) system software b) application software c) middleware d) firmware;

8. … is software designed to specifically perform a particular user function or application.

a) system software b) application software c) middleware d) firmware.

12. **Listen to a podcast interview with Bill Thompson, a program developer:** https://www.youtube.com/watch?v=LVhSemNfVdc (min: 30:45)

Windows Vista

Audio script

Interviewer: There is no doubt that Windows has revolutionized the way we use computers today. Bill, can you explain just why it's so popular?

Bill: Well, very simply, people find Windows very easy to use because everything is presented in graphic images. It's also compatible with thousands of programs.

Interviewer: The big news at the moment is, of course, the launch of Windows Vista – the successor to Windows XP. I understand that there are several versions of Vista available. Could you give us some advice on which one to get?

Bill: Yes, you're right – there are four main editions Home Basic, Home Premium, Business and Ultimate. Home Basic is designed for users with basic needs, such as email and internet access. Home Premium is for more advanced home computing and entertainment. It includes a DVD maker, a movie maker and a Media Centre, which lets you listen to music, watch video and record TV programmes on your PC. The Business edition is ideal for business organizations of all sizes. It offers new backup technologies and advanced networking capabilities. Finally, the Ultimate edition combines all the features of the other editions, making it the most complete. It has everything you need to enjoy the latest in music games, digital photography and high-definition TV. It's aimed at high-end PC users, gamers and multimedia professionals.

Interviewer: And what other factors make Windows Vista so attractive?

Bill: The user interface has been redesigned with new icons and a new visual style The system gives you more flexibility when you search and organize your files, and it offers support for the latest technologies, from DVD creation to speech recognition.

Interviewer: What about internet connections? Have they been improved?

Bill: Yes, Internet Explorer is more reliable and secure. The Security Centre includes an anti-spyware program called Windows Defender and a firewall that protects your computer from internet attacks.

Interviewer: And what sort of application software can you use with Windows?

Bill: The most popular is still Microsoft Office, a suite that includes the word processor, Word, an email program, the Excel spreadsheet program, and the presentation graphics program, PowerPoint.

13. Answer these questions.

– Why is Windows so popular? Give two reasons.

– Which Windows Vista edition is aimed at high-end PC users, gamers and multimedia professionals?

14. Listen again and complete this fact file.

Windows Vista editions:

_____ is designed for users with basic needs, such as e-mail and internet access.

Home Premium is for advanced home computing and_____.

The Business edition is ideal for_____.

The Ultimate edition is the most complete.

Other features:

The user interface has been redesigned with new icons and a new____.

It offers support for the latest technologies, from DVD creation to_____.

Internet and security

Internet Explorer is more reliable and secure.

The Security Centre includes an_____program called Windows Defender and a firewall that protects your computer from_____.

Windows programs:

The most popular is still____ a suite that includes the_____, Word; an email program; the Excel spreadsheet program; and the program PowerPoint.

LANGUAGE DEVELOPMENT

15. Read the text «GUI operating systems»

The term user interface refers to the standard procedures that the user follows in order to interact with a computer. In the late 1970s and early 80s, the way users accessed computer systems was very complex. They had to memorize and type a lot of commands just to see the contents of a disk, to copy files or to respond to a single prompt. In fact, it was only experts who used computers, so there was no need for a user-friendly interface.

In 1984, Apple produced the Macintosh, the first computer with a mouse and a graphical user interface (GUI). Macs were designed with one clear aim: to facilitate interaction with the computer. A few years later, Microsoft launched Windows, another operating system based on graphics and intuitive tools. Nowadays, computers are used by all kinds of people, and as a result there is a growing emphasis on accessibility and user-friendly systems.

A **GUI** makes use of a **WIMP** environment: windows, icons, menus and pointer. The background of the screen is called the **desktop**, which contains labeled pictures called icons. These **icons** represent **files** or **folders**. Double-clicking a folder opens a window which contains **programs, documents**, or more nested folders. When you are in a folder you can launch a program or document by double-clicking the icon, or you can drag it to another location. When you run a program, your PC opens a window that lets you work with different tools. All programs have a high level of consistency, with similar toolbars, menu bars, buttons and dialog boxes. A modern OS also provides access to networks and allows multitasking, which means you can run several programs – and do various tasks – at the same time.

The most popular operating systems are:

– The Windows family – designed by Microsoft and used on most PCs.

– Mac OS – created by Apple and used on Macintosh computers.

– Unix – a multi-user system, found on mainframes and workstations in corporate installations.

– Linux – open-source software developed under the GNU General Public License. This means anybody can copy its source code, change it and distribute it. It is used in computers, appliances and small devices.

– Windows Mobile – used on most PDAs and smartphones (PDAs incorporating mobile phones).

– Palm OS – used on Palm handed devices.

– RIM OS – used on BlackBerry communication devices. Developed by Research In Motion.

– The Symbian OS – used by some phone makers, including Nokia and Siemens.

These computer platforms differ in areas such as device installation, network connectivity or compatibility with application software.

16. Answer the questions.

1. When did Apple produce the first computer with a mouse and a graphical user interface?
2. What operating system is the most popular?
3. What OS is used in Blackberry communication devices?
4. What OS is used by some phone makers?
5. What OS is created by Apple and used on Macintosh computers?
6. What OS is developed under the General Public License?
7. What OS can be found on mainframes and workstations in corporate installations?

17. Complete the sentences.

a) In 1984, Apple produced the Macintosh, the first computer with a mouse and a_____.
b) The background of the screen is called the_____, which contains labeled pictures called_____.
c) These icons represent files or_____.
d) When you are in a folder, you can_____a program or document by double-clicking the_____or you can drag it to another location.
e) When you run a program, your PC_____a window that lets you work with different tools.
f) All the programs have a high level of_____, with similar tool-bars, menu bars, buttons and dialog boxes.
g) A modern OS also provides access to networks and allows_____, which means you can run several programs – and do various tasks – at the same time.

18. Circle the correct answer. Minecraft meets Gerunds and Infinitives.

1. I am very good at **to play/playing** Minecraft, which is a 3-D game.
2. Many people are interested in **to play/playing** Minecraft now- it is very popular.

3. If you are keen on **to learn/learning** how to play computer games- you'll love Minecraft.
4. I hate **to explode/exploding** Creepers- they are very scary and dangerous.
5. My brother and I decided **to buy/buying** Minecraft, because everyone is crazy about it.

6. Are you crazy about **to play/playing** computer games?

7. I hope **to beat/beating** the zombies and the skeletons in the survival mode.

8. My brother promised **to let/letting** me play the games as much as I wanted.

9. Watch out for the Ender Dragon! Don't be afraid of **to destroy/destroying** it.

10. In the survival mode I have to learn how **to collect/collecting** resources. I also would like **to battle/battling** mobs and to fight/fighting hunger.

11. The game begins in the over land where players practice **to build/building** structures.

12. When you are in a cave don't forget **to look out for/looking out** for dangerous mobs.

13. One character that is dangerous and I can't stand **to look/looking** at is the Ender Dragon.

14. I look forward **to defeat/to defeating** the Ender Dragon and winning the game.

15. You have to practice **to make/making** armor, bows, and other weapons.

16. I would avoid **to run into/running into** zombies, spiders, and creepers.

17. If you enjoy **to triumph/triumphing** over evil and to overcome/ overcoming many obstacles, this game is for you.

18. Once you start playing, it is almost impossible **to stop to attack/ attacking** monsters of all kinds.

19. I love **to have/having** good triumph over evil and **to finish/finishing** the game successfully.

20. If you like **to be/being** a survivor and a winner try Minecraft, if you don't like **to challenge/challenging** terrifying monsters, then this game is not for you.

19. Activate pre-existing knowledge and write about two possible applications of using computer graphics in business.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.

I thought my son was spending too much time playing computer games, so I stopped him and said, «Son, when Abe Lincoln was your age, he was studying books by the light of the fireplace».

He considered that for a moment before replying, «Yeah, well, when Abe Lincoln was your age, he was The President of the United States».

UNIT 12
APPLICATION SOFTWARE

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«Any sufficiently advanced technology is equivalent to magic».* ***Arthur C. Clarke***

2. Discuss these questions.

– What kind of software allows your computer to go above and beyond just running itself?

– What are software programs written specifically to boost your computer performance referred to as?

– What examples of application software can you provide?

3. Watch the video «Application Software».

– While watching the video, write down any new vocabulary you hear.

– Check the definition and slowly build up your own personalised vocabulary booklet.

– Present a short plan so that you can summarize and render what you heard in the video.

– Write a brief summary.

Application Software замінити

https://www.youtube.com/watch?v=BTB86HeZVwk (5.47 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

applications software – прикладне програмне забезпечення;
productivity program – робоча програма (на відміну від «іграшки»);
spreadsheet – електронна таблиця;
database – база даних;
word processor – текстовий редактор;
margin – край, поле (друкованої сторінки);
font – шрифт;
application – застосування;
software suite – пакет програмного забезпечення;
Web browser – веб-браузер, навігатор;
content – зміст, контент, інформаційне наповнення;
hyperlink – гіперпосилання;
type – друкувати (на клавіатурі); вводити, набирати;
retrieve – відновлювати, відшукувати;
calculation – розрахунок;
accounting – облік, звітність; бухгалтерська справа;
bookkeeping – бух облік;
enable the user to complete tasks – дозволяти користувачеві виконувати завдання;
handling – оброблення;
volumes of financial data – великі обсяги фінансових даних.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these word-combinations.

1) productivity	a) graphics;
2) complete	b) aficionado;
3) word	c) tasks;
4) designing	d) options;
5) video	e) spacing;
6) create	f) software;
7) line	g) the needs;
8) suit	h) suite;
9) formatting	i) processing;
10) software suite	j) a document.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

APPLICATIONS SOFTWARE

Applications software, or simply applications, are often called productivity programs or end-user programs because they enable the user to complete tasks, such as creating documents, spreadsheets, databases and publications, doing online research, sending email, designing graphics, running businesses, and even playing games! Application software is specific to the task it is designed for and can be as simple as a calculator application or as complex as a word processing application. When you begin creating a document, the word processing software has already set the margins, font style and size, and the line spacing for you. But you can change these settings, and you have many more formatting options available. For example, the word processor application makes it easy to add color, headings, and pictures or delete, copy, move, and change the document's appearance to suit your needs.

Microsoft Word is a popular word-processing application that is included in the software suite of applications called Microsoft Office. A software suite is a group of software applications with related functionality. For example, office software suites might include word processing, spreadsheet, database, presentation, and email applications. Graphics suites such as Adobe Creative Suite include applications for creating and editing images, while Sony Audio Master Suite is used for audio production.

A Web browser or simply browser is an application specifically designed to locate, retrieve, and display content found on the Internet. By clicking a hyperlink or by typing the URL of a website, the user is able to view websites consisting of one or more Web pages. Browser such as Internet Explorer, Mozilla Firefox, Google Chrome, and Safari are just a few of the many available to choose from.

Word processing, database, spreadsheet and presentation software are productivity software which simplifies the process of preparing documents for the workplace or school. There are numerous application software for entertainment seekers, including gaming software such as World of WarCraft for the avid gamer, iTunes for music lovers and YouTube for the video aficionado.

Word processing is the most common application for a personal computer. Most word processing software programs allow us to create,

edit, and save documents, along with changing the position of the text in a document, inserting new information in the middle of the text, or removing words and sections no longer needed. With a typewriter, you would have to re-type the entire document after a few major changes. Given a computer, a document can be stored electronically and retrieved at any time for modification. Examples of word processing programs include Word Perfect, MS-Word, MultiMate, WordStar, DisplayWrite, Word for Windows, and Word Perfect for Windows.

One of the primary functions of the first mainframe computers was to store and calculate volumes of financial data for banks and large businesses. Nowadays, a personal computer is capable of handling the accounting and finances of almost any small to medium-sized business. Many different programs are available for plotting financial trends and performing everyday bookkeeping functions. One of the most popular financial tools is called a spreadsheet. An electronic spreadsheet is a software program, which performs mathematical calculations and 'want – if ' analysis. Besides replacing your pencil and calculator for solving financial and statistical problems, spreadsheets can display line graphics, bar chats, and scatter plot diagrams. Often accounting and spreadsheet programs are designed to work together, in efforts to provide the financial solution. Examples of spreadsheet programs include Lotus 1-2-3, MS-Excel, Quatro Pro, and Supercale.

7. Comment on the notions expressed in the text.

1) Software can be thought of as the variable part of a computer.

2) The software family is categorized into two broad branches – system software and application software.

3) Application software is software designed to specifically perform a particular user function or application.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) One of the primary functions of the first laptop computers was to store and calculate volumes of financial data for banks and large businesses.

2) End-user programs enable the user to perform tasks, such as creating documents, spreadsheets, databases and publications, doing online research, sending email, designing graphics, running businesses, and even playing games.

3) Application software is common to the task it is designed for.

4) When you begin creating a document, the word processing software will need to set the margins, font style and size, and the line spacing for you.

5) The word processor application allows you to add color, headings, and pictures or delete, copy, move, and change the document's appearance to suit your needs.

6) A software suite is a group of software applications with related functionality.

7) Sony Audio Master Suite is used for video production.

8) A Web browser or simply browser is an application specifically designed to locate, retrieve, and display content found on the Internet.

9) There are numerous application software for researchers and students, including gaming software such as World of Warcraft for the avid gamer, and iTunes for music lovers.

10) Word processing is the most specific application for a personal computer.

LANGUAGE DEVELOPMENT

9. There are certain etiquette rules you should follow if you want to use chat rooms and other communication environments correctly. Next time you enter a chat room, keep them in mind:

– Be polite. You're speaking to a human being not to a machine.

– Don't use CAPITAL LETTERS! This is considered as shouting.

– Have a look at the tone of the conversation in the room before you take part. You may not like that channel.

– Ignore those people who don`t follow these rules.

– Don't believe all the things people might tell you. Some people lie just for fun.

– Don't give personal information (your real name, address, password, etc.)

– Protect your computer. Use a firewall and antivirus programs.

– Don't accept files from people you don't know. They might be or contain trojans.

– In short, follow the same rules as in real life.

– Enjoy your chat and have fun!

10. Study SMS Message Dictionary. Match the symbols with the meanings.

SMS Message Dictionary

Match the symbols with the meanings:

1. @	a) excellent
2. 2DAY	b) later
3. @MORO	c) wait
4. 2NITE	d) before
5. 4EVER	e) mate
6. 4	f) see you
7. B	g) seeing
8. B4	h) forever
9. BCOZ	i) great
10.CING	j) why
11.CU	k) please
12.FRND	l) tomorrow
13.GR8	m) are
14.H8	n) late
15.L8	o) be
16.L8R	p) tonight
17.M8	q) you
18.PLZ	r) because
19.R	s) hate
20.THX	t) for
21.U	u) friend
22.W8	x) at
23.XLNT	y) thanks
24.Y	z) today

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

LISTENING

11. Listen to a sales assistant explaining the system requirements needed to run multimedia software. https://www.youtube.com/watch?v=4uk1qrCPlts (min: 51:28)

Which answers (a or b) best describe what she says.

1) Multimedia is defined as …

a) the integration of video and telecommunications with traditional computing;

b) the integration of text, graphics, audio, video and animation in a single application.

2) With multimedia encyclopedias, …

a) You have more fun but you learn more slowly;

b) You get much more involved than with print encyclopedias.

3) Interactive games …

a) Use multimedia and virtual reality features;

b) Do not require much RAM memory.

12. Find words in the text which mean the following.

1) the programs used to direct the operation of a computer, as well as documentation giving instructions on how to use them;

2) a computer data file;

3) a type of software that offers the user a visual display of a simulated multicolumn worksheet and the means of using it especially for financial plans and budgets;

4) a comprehensive collection of related data organized for convenient access, generally in a computer;

5) a software program that allows the user to find and read encoded documents in a form suitable for display, especially such a program for use on the World Wide Web;

6) substantive information or creative material viewed in contrast to its actual or potential manner of presentation;

7) an ardent devotee; fan, enthusiast;

8) the act or process of calculating; computation;

9) the act of solving a problem, question, etc.

10) diligent and systematic inquiry or investigation into a subject in order to discover or revise facts, theories, applications, etc.

13. There is a logical connection among three of the four words in each of the following groups. Which is the odd one out, and why?

1) delete – copy – cook – move;
2) create – understand – design – edit;
3) complex – applications – program – software;
4) word – book – image – icon;
5) door – font – margin – line;
6) colour – heading – history – picture;
7) locate – retrieve – draw – display;
8) seeker – lover – aficionado – attorney;
9) insert– influence – edit – create;
10) store – consume – calculate – handle.

14. Read the text «Multimedia Magic» and match the headings (1–4) with the paragraphs (a–d).

1. Sound, Music, MIDI.
2. Products full of pictures, action and sound.
3. Creating and editing movies.
4. The potential of Multimedia.

A. _____

Multimedia applications are used in all sorts of fields. For example, museums, banks and estate agents often have information kiosks that use multimedia; companies produce training programs on optical discs; businesspeople use Microsoft PowerPoint to create slideshows; and teachers use multimedia to make video projects or to teach subjects like art and music. They have all found that moving images and sound can involve viewers emotionally as well as inform them, helping make their message more memorable.

The power of multimedia software resides in **hypertext, hypermedia** and **interactivity** (meaning the user is involved in the programme). If you click on a hypertext link, you can jump to another screen with more information about a particular subject. Hypermedia is similar, but also uses graphics, audio and video as hypertext elements.

B. _____

As long as your computer has a **sound card**, you can use it to capture sounds in digital format and play them back. Sound cards offer two important capabilities: a built-in stereo synthesizer and a system called **MIDI** or **M**usical **I**nstrument **D**igital **I**nterface, which allows electronic musical instruments to communicate with computers. A **Digital Audio**

Workstation (DAW) lets you mix and record several tracks of digital audio.

You can also listen to music on your PC, or transfer it to a portable **MP3** player. MP3 is short for **MPEG audio layer 3,** a standard format that compresses audio files. If you want to create your own MP3 files from CD, you must have a **CD ripper**, a program that extracts music tracks and saves them on disk as MP3s.

Audio is becoming a key element of the Web. Many radio stations broadcast live over the Internet using **streaming audio technology**, which lets you listen to audio in a continuous stream while it is being transmitted. The broadcast of an event over the Web, for example a concert, is called a **webcast**. Be aware that you won't be able to play audio and video on the Web unless you have a **plug-in** like RealPlayer or QuickTime.

C. _____

Video is another important part of multimedia. **Video computing** refers to recording, manipulating and storing video in **digital format**. If you wanted to make a movie on your computer, first you would need to capture images with a **digital video camera** and then transfer them to your computer. Next, you would need a **video editing** program like iMovie to cut your favourite segments, re-sequence the clips and add transitions and other effects. Finally, you could save your movie on a DVD or post it on websites like YouTube and Google Video.

D. _____

Multimedia is used to produce dictionaries and encyclopedias. They often come on DVDs, but some are also available on the Web. A good example is the Grolier Online Encyclopedia, which contains thousands of articles, animations, sounds, dynamic maps and hyperlinks. Similarly, the Encyclopedia Britannica is now available online, and a concise version is available for iPods, PDAs and mobile phone. Educational courses on history, science and foreign languages are also available on DVD. Finally, if you like entertainment, you'll love the latest multimedia video games with surround sound, music soundtracks, and even film extracts.

15. Complete the text «Your smartphone could replace hotel Keys» with the words from the box:

iPhone standard develop digital plastic posted innovation year Registration technology traditional

(CNN) – Got a smartphone? Never lose your hotel key, or even have to stop at the_____desk, again.

That's the vision of a hotel chain that plans to send _____ keys to guests' phones via an app instead of making them check in and get the_____(and famously **lose-able**)_____swipe cards. Arriving guests could bypass the front desk and go **straight** to their rooms.

Starwood Hotels & Resorts, which owns more than 1,150 hotels in nearly 100 countries, plans to debut the system in the next three months at two of its Aloft hotels – in the Harlem neighborhood of New York City and Cupertino, California.

Cupertino is likely **no accident** – being, of course, the home of Apple's headquarters. If all goes well, the company says it could have the feature in all of its hotels by next_____. A spokeswoman said the app will initially be compatible with recent_____models (4S and newer) and newer Android phones. The app will use Bluetooth _____ to unlock the room with a tap.

«We believe this will become the new_____for how people will want to enter a hotel,» Frits van Paasschen, Starwood's CEO, told The Wall Street Journal. «It may be a **novelty** at first, but we think it will become **table stakes** for managing a hotel.»

Starwood, a **chain** that's heavy on boutique hotels, has a history of tech_____and employs its own digital team.

Just last year, the company launched a plan to_____solar power at its hotels, offered discounts during a «Cyber Monday» sale and **premiered** an iPad-specific mobile app. Starwood also announced Instagram integration on its websites, which lets visitors see images that guests have_____.

16. Match the words or expressions with the meanings:

a. Lose-able ___group
b. Straight ___on purpose
c. No accident ___common
d. Novelty ___performed for the first time

e. Table stakes ___easy to lose
f. Chain ___new thing
g. Premiered ___directly

17. Check True or False:

a) Just iPhones will run the app. (T) (F)
b) Apple is launching a hotel chain (T) (F)
c) The new feature is going to be implemented next year (T) (F)
d) The article is about an app develop to find the customer's plastic key. (T) (F)
e) You can watch videos on Instagram. (T) (F)
f) Starwood has used na app before. (T) (F)
g) Cupertino is a neighborhood in New York City. (T) (F)

REMEMBER

MODALS OF CERTAINTY:

must / might / could / may / can't

- **must** + infinitive
- **might** / **might not** + infinitive
- **could** / **could not** + infinitive
- **may** / **may not** + infinitive
- **can't** + infinitive

For example:

I am waiting for Julie with another friend, David.
I ask: 'Where is Julie?'
David guesses:

- She **must** be on the bus. (I'm fairly sure this is a good guess)
- She **might** come soon. (maybe)
- She **could** be lost. (maybe)
- She **may** be in the wrong room. (maybe)
- She **can't** be at home. (I'm fairly sure this isn't true)

Notice that the opposite of '**must**' is '**can't** in this case.

Will / won't

We use **will** and **won't** when we are very sure:

- She'll be at work now.

Can

Can is used for something that is generally possible, something we know sometimes happens:

- Prices can be high in London.

18. For each sentence, choose between can't, might or must to fill each space.

1. Your mother_____be a great cook. You are always so keen to get back home to eat!

2. I don't know why I am so tired these days. I _____ be working too hard. Or maybe I am not sleeping too well.

3. Do you know where Carl is? He_____be out - his car keys are on the table.

4. You seem to know everything about the theatre. You _____ go every week.

5. To give the promotion to Harold was silly. He_____know much about this company after only a year working here.

6. Go and look in the kitchen for your gloves. They _____ be in there.

7. Oh, the phone is ringing. Answer it. It_____be Kate. She always rings at this time.

8. Dan has been drinking that whiskey since early this afternoon. He___be totally drunk by now.

9. That couple_____think much of this film. They're leaving already - after only 20 minutes!

10. That's the second new car they have bought this year. They _____ be very rich!

19. You probably have a paint program at home. Activate pre-existing knowledge and describe what you do with it.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.

Virus

There is a dangerous virus going around. It is called WORK. If you receive WORK from your colleagues, your boss, or anyone else, via E-mail or any other means, DO NOT TOUCH IT!

This virus wipes out your private life completely. If you should come into contact with WORK, put on your jacket, take two good friends and go straight to the nearest pub.

Order the antidote known as BEER. Take the antidote repeatedly until WORK has been completely eliminated from your system.

Forward this warning immediately to at least 5 friends. Should you realize that you do not have 5 friends, this means that you are already infected and that WORK already controls your life.

Remember! It is a deadly virus!

UNIT 13
SYSTEM SOFTWARE

LEAD-IN

1. Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought: «One machine can do the work of fifty ordinary men. No machine can do the work of one extraordinary man». Elbert Hubbard

2. Discuss these questions.

– What type of software enables functional interaction between hardware, software and the user?

– How can systems software be categorized?

– What examples of system software can you provide?

3. Watch the video «System Software».

– Before you begin, say the terms you might hear.

– Watch the video and render what problems are explained. Say what you heard in your own words.

– Check whether suggested by you academic vocabulary was used by the presenter and provide their definitions.

– Write questions about the video.

System Software

https://www.youtube.com/watch?v=MHyXOsHGinE (2.06 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

system software – системне програмне забезпечення;
operating system – операційна система;
utility – утиліта, сервісна програма;
driver – драйвер;
firmware – вмонтоване програмне забезпечення;
maintain – підтримувати, обслуговувати;
tools – інструментарій, інструментальні програмні засоби;
device – пристрій, прилад;
interface – інтерфейс;
backup – резервна копія, дубль; резервне копіювання даних;
storage – збереження інформації; зовнішня пам'ять;
cloud storage – хмарна система зберігання даних;
translator – транслятор, перекладач;
plug in – під'єднати, вставляти;
embedded – вбудований;
remote control – пульт дистанційного управління;
digital watch – цифровий годинник;
peripheral – периферійний пристрій;
solve a particular problem – вирішити певну проблему;
solid knowledge of computers – ґрунтовні знання комп'ютерів;
avid computer user – завзятий користувач комп'ютера;
stay in tip-top shape – залишатися в першокласної формі;
low-level program – програма на мові низького рівня;
Plug-and-Play – «під'єднай і працюй» (принцип і специфікація швидкого під'єднання до комп'ютера додаткового устаткування і самоконфігурування системи).

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these word-combinations.

1) word	a) maintenance;
2) system	b) program;
3) device	c) tools;
4) computer	d) device;
5) disk	e) systems;
6) harmful	f) driver;

7) storage	g) backup;
8) cloud	h) processor;
9) create	i) storage;
10) embedded	j) software.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

SYSTEM SOFTWARE

Software is a generic term for an organized collection of computer data and instructions. There are two types of software: application software and system software. Application software helps users solve a particular problem or carry out a specific task. A word processor is an example of application software.

System software coordinates the activities and functions of hardware and software, and it controls the operations of computer hardware. A computer's operating system is an example of system software. Operating systems control the computer hardware and act as an interface with application programs. System software also includes utility software, device drivers and firmware.

Utility software helps manage, maintain and control computer resources. Operating systems typically contain the necessary tools for this, but separate utility programs can provide improved functionality. Utility software is often somewhat technical and targeted at users with a solid knowledge of computers. If you use a computer mostly for e-mail, some Internet browsing and typing up a report, you may not have much need for these utilities. However, if you are an avid computer user, these utilities can help make sure your computer stays in tip-top shape. Examples of utility programs are antivirus software, backup software and disk tools. Let's look at each of these in a bit more detail.

Antivirus software, as the name suggests, helps protect a computer system from viruses and other harmful programs. A computer virus is a computer program that can cause damage to a computer's software, hardware or data. It is referred to as a virus because it has the capability to replicate itself and hide inside other computer files. One of the most common ways to get a virus is to download a file from the Internet. Antivirus software scans your online activity to make sure you are not downloading infected files. New viruses are coming out all the time, so antivirus software needs to be updated very frequently.

Backup software helps in the creation of a backup of the files on your computer. Most computer systems use a hard disk drive for storage. While these are generally very robust, they can fail or crash, resulting in costly data loss. Backup software helps you copy the most important files to another storage device, such as an external hard disk. You can also make an exact copy of your hard disk. Increasingly, backup software uses cloud storage to create backups. This typically means you pay a fee to use the storage space of a third party and use their backup software to manage which files are going to be backed up.

Disk tools include a range of different tools to manage hard disk drives and other storage devices. This includes utilities to scan the hard disks for any potential problems, disk cleaners to remove any unnecessary files, and disk defragmenters to re-organize file fragments on a hard disk drive to increase performance. Disk tools are important because a failure of a hard disk drive can have disastrous consequences. Keeping disks running efficiently is an important part of overall computer maintenance.

A device driver is a computer program that controls a particular device that is connected to your computer. Typical devices are keyboards, printers, scanners, digital cameras and external storage devices. Each of these need a driver in order to work properly. Device drivers act as a translator between the operating system of the computer and the device connected to it. For many types of devices, the necessary drivers are built into the operating system. When you plug in a device, the operating system starts looking for the right driver, installs it and you are ready to start using the device. This is referred to as plug-and-play and is much preferred over having to manually install the correct drivers.

There are so many different devices, however, that not all of them are built into the operating system. As an alternative, the operating system can look online to find the right driver to install. Many hardware devices, however, come with the necessary drivers. For example, if you buy a printer, it may come with a CD that typically will include the correct driver. The advantage of this is that the hardware manufacturer can make sure you have the right driver for the printer.

Firmware is a combination of software and hardware. Firmware is a type of software that provides control, monitoring and data manipulation of engineered products and systems. Typical examples of devices containing firmware are embedded systems (such as traffic lights, consumer appliances, remote controls and digital watches),

computers, computer peripherals, mobile phones, and digital cameras. The firmware contained in these devices provides the low-level control program for the device.

7. Comment on the notions expressed in the text.

1) Utility software is often somewhat technical and targeted at users with a solid knowledge of computers.

2) A computer virus is a computer program that can cause damage to a computer's software, hardware or data.

3) Firmware is a type of software that provides control, monitoring and data manipulation of engineered products and systems.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) Computer software can be put into two different categories: application software and system software.

2) However, in addition to those categories, an entire new batch of wares has entered the computer vernacular in recent years.

3) The operating system is the program that actually makes the computer operate.

4) Application software coordinates the activities and functions of hardware and software.

5) System software helps users solve a particular problem or carry out a specific task.

6) System software also includes utility software, device drivers and firmware.

7) Operating systems typically contain the necessary tools for helping manage, maintain and control computer resources.

8) Examples of utility programs are device drivers and firmware.

VIDEO

9. **Follow this link:** https://www.youtube.com/watch?v=3re5Y_KEcwo

Watch the video «Device Driver» providing information concerning meaning, definition and explanation of device drivers.
Find out the following.

1) What does the term device driver mean?

2) What does the device driver provide?

3) What is the main purpose of device drivers?

4) What does writing a device driver require?
5) Whose task is writing device drivers?
6) What is the primary benefit of running a driver in user mode?

LANGUAGE DEVELOPMENT

10. Match up a word with its definition.

1) interface 2) firmware 3) virus 4) backup
5) driver 6) word processor 7) utility.

a) a copy of information held on a computer that is stored separately from the computer;
b) a computer program or part of a computer program that can make copies of itself and is intended to prevent the computer from working normally;
c) a set of instructions that form part of an electronic device and allow it to communicate with a computer or with other electronic devices;
d) a connection between two pieces of electronic equipment, or between a person and a computer;
e) a program used for preparing documents and letters, or a computer for doing this;
f) a computer program that makes it possible for a computer to use other pieces of equipment such as a printer;
g) a small program that provides an addition to the capabilities provided by the operating system.

11. Fill in the gaps in the sentences.

a)engaged b) layer c) embedded d) categories e) mobiles; f) hardware g) tasks h) programs i) includes j) running;

Software refers to a set of …*1*… which is capable of performing some specific …*2*… on a computer system. They can be broadly classified into two …*3*… – System software and Application software. System Software is usually …*4*… in background processes. This software sync the work of …*5*… and other types of programs. It acts as a middle …*6*… between hardware and user applications. System software …*7*… programs like operating system. It is a well-known example of system software. This software interacts with the hardware and provides the capability for …*8*… various types of programs. Desktop uses operating systems like Windows, Linux and MacOS, whereas Android and Windows

are commonly used operating systems for …*9*… . There are different types of operating systems like real time, distribute, …*10*…, etc.

12. Talking points.
Discuss these questions.

– What is desktop publishing?

– What kind of documents can be produced with a desktop publishing system?

– Page layout software is the key component of a desktop publishing system. Which file types can be imported into a page layout program?

13. Read the text and check your answers.

What is desktop publishing?

Desktop publishing (DTP) refers to the use of computers to design and publish books, brochures, newsletters, magazines and other printed pieces. DTP is really a combination of several different processes including word processing, graphic design, information design, output and pre-press technologies, and sometimes image manipulation.

DTP centres around a **page layout program**. Typically, a layout program is used to import texts created in word processing programs; charts and graphs from spreadsheet programs; drawings and illustrations created in CAD, drawing or paint programs; and photographs. The program is then used to combine and arrange them all on a page. It is this ability to manipulate so many different items and control how they are used that makes layout software so popular and useful. However, modern word processors also have publishing capabilities, meaning the line separating such programs from DTP software is becoming less clear. In general, though, powerful new publishing systems use high-quality scalable fonts and give you control over typographic features such as **kerning** (adjusting the spaces between letters to achieve even, consistent spacing). Another key feature of DTP software is **text flow** – the ability to put text around graphic objects in a variety of ways.

Once composed, DTP documents are printed on a laser printer or on a high-resolution imagesetter (see Unit 8). For transfer to a commercial printer, the documents are generally saved in their native page layout format (such as Adobe InDesign or QuarkXPress) or as **PDF** files. PDF stands for **P**ortable **D**ocument **F**ormat and allows people to view, search and print documents exactly as the publisher intended –

you don't need to have the software and fonts used to create it. PDF files can be published and distributed anywhere: in print, attached to email, posted on websites, or on DVD. To open a PDF file, only the Adobe Acrobat Reader (a free download) is required.

In modern commercial printing, DTP files are output directly to the **printing plates** without using film as an intermediate step. This new technology is known as **Computer-To-Plate (CTP)** or **direct to plate**, and the machine that generates plates for a printing press is called a **plate setter**. CTP machines are expensive, so most people take their files to a **service bureau**, a company that specializes in printing other people's files. Service bureau offer a full range of scanning and printing solutions.

14. Read the text again and answer these questions.

– What type of software is used for the creation of DTP documents?

– What are three differences between DTP software and word processors?

– What is a PDF and what can it do?

– Which program do you need to view a PDF document?

– Why do people send their DTP files to service bureau?

15. Read and study.

Teens Experiencing Facebook Fatigue [STUDY]

Online gaming site Roiworld surveyed 600 teens ages 13 to 17 in late April and found that teens spend two hours per day online on average, 80% of which is spent using a social network. These same teens are, however, showing signs of «Facebook Fatigue.» Nearly one in five (19%) who have an account no longer visit Facebook or are using it less.

Of the group that are saying goodbye to Facebook, 45% have lost interest, 16% are leaving because their parents are there, 14% say there are «too many adults/older people» and 13% are concerned about the privacy of their personal information.

While interest in Facebook may be waning, it's still the most popular social network among teens – 78% have created a profile and 69% still use it. YouTube ranks second; 64% of teens claim to have a YouTube profile and continue to use the site. MySpace comes in a distant third (41%) and Twitter takes the fourth spot (20%).

The study also suggests that the teens that continue to stick to Facebook do so primarily to play games. Roiworld found that more than one-third of the teens who play games on Facebook admit to spending at least 50% of their time on the site immersed in gameplay. The online gaming trend extends far beyond Facebook, as 75% of surveyed teens claim to play games on the web.

It seems obvious that the newest generation of online users would have few qualms about spending money online, and this study supports that theory. The research purports that 43% of teens using social sites have spent money within a social network. They're purchasing items such as currency for virtual items (35%), music (33%), avatar accessories (30%) and points to level up (23%). Nearly half of this crowd (49%) indicate that they have an allowance for such expenditures.

http://mashable.com/2010/06/30/teens-social-networks-study/

16. Select six facts from the text and give your personal opinion about each one of them. Use expressions such as I agree, I disagree, I think, in my opinion, and so forth.

FACT	**OPINION**

17. Next time you surf the Web, look at the pages you visit in detail and decide if they are well designed. Write a short article.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.

My boss calls me «The computer».
Not because of my calculation skills but because I go to sleep when left unattended for 15 minutes.

UNIT 14
GRAPHICAL USER INTERFACE

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«Technology is a word that describes something that doesn't work yet».*
Douglas Adams

2. Discuss these questions.

– What was the way in which users had access to a computer system in the past?

– What helps the user interact with a particular computer nowadays?

– Why is a good user interface important?

– What are the benefits of a graphical user interface?

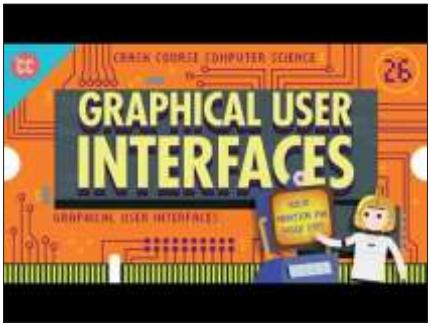
3. Watch the video «The Graphical User Interface».

– While watching the video, write down any new vocabulary you hear.

– Check the definition and slowly build up your own personalised vocabulary booklet.

– Render what you remember about the video. Say what you heard in your own words.

The Graphical User Interface



https://www.youtube.com/watch?v=XIGSJshYb90 (12.58 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

graphical user interface (GUI) – графічний інтерфейс користувача;
interact – взаємодіяти;
icon – піктограма, іконка, позначка;
window – вікно;
secondary notation – система вторинних позначень;
label – мітка, позначка;
learning curve – крива навчання;
command-line interface (CLI) – інтерфейс командного рядка;
release – випускати (версію продукту);
input device – пристрій введення;
smartphone – смартфон, інтелектуальний стільниковий (мобільний) телефон;
tablet – планшет;
touchscreen – сенсорний екран;
menu bar – смужка (лінійка) меню;
navigate – пересуватися, переміщатися;
swipping – гортання;
pinching – затискання;
knob – кнопка;
natural user interface – природний інтерфейс користувача;
zoom in – збільшити масштаб зображення;
zoom out – зменшити масштаб зображення;
appropriate type of input – відповідний тип введення.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these word-combinations.

1) secondary	a) interface;
2) menu	b) command;
3) user	c) notation;
4) visual	d) device;
5) graphical	e) detection;
6) spoken	f) bar;
7) remote	g) control;
8) motion	h) recognition;
9) speech	i) indicator;
10) mobile	j) elements.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

GRAPHICAL USER INTERFACE

The graphical user interface (GUI, /'gu:i/), is a type of user interface that allows users to interact with electronic devices through graphical icons and visual indicators such as secondary notation, instead of text-based user interfaces, typed command labels or text navigation. GUIs were introduced in reaction to the perceived steep learning curve of command-line interfaces (CLIs), which require commands to be typed on a computer keyboard.

It is a user interface that includes graphical elements, such as windows, icons and buttons. The term was created in the 1970s to distinguish graphical interfaces from text-based ones, such as command-line interfaces. However, today nearly all digital interfaces are GUIs.

The first commercially available GUI, called «PARC,» was developed by Xerox. It was used by the Xerox 8010 Information System, which was released in 1981. After Steve Jobs saw the interface during a tour at Xerox, he had his team at Apple develop an operating system with a similar design. Apple's GUI-based OS was included with the Macintosh, which was released in 1984. Microsoft released their first GUI-based OS, Windows 1.0, in 1985.

For several decades, GUIs were controlled exclusively by a mouse and a keyboard. While these types of input devices are sufficient for desktop computers, they do not work as well for mobile devices, such as smartphones and tablets. Therefore, mobile operating systems are designed to use a touchscreen interface. Many mobile devices can now be controlled by spoken commands as well.

Because there are now many types of digital devices available, GUIs must be designed for the appropriate type of input. For example, a desktop operating system, such as OS X, includes a menu bar and windows with small icons that can be easily navigated using a mouse. A mobile OS, like iOS, includes larger icons and supports touch commands like swipping and pinching to zoom in or zoom out. Automotive interfaces are often designed to be controlled with knobs and buttons, and TV interfaces are built to work with a remote control. Regardless of the type of input, each of these interfaces are considered GUIs since they include graphical elements. Specialized GUIs that operate using speech recognition and motion detection are called natural user interfaces, or NUIs.

7. Comment on the notions expressed in the text.

1) The graphical user interface, is a type of user interface that allows users to interact with electronic devices through graphical icons and visual indicators.

2) GUIs must be designed for the appropriate type of input.

3) It is well known that computers running under an attractive interface stimulate users to be more creative and produce high quality results, which has a major impact on the general public.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) The graphical user interface allows users to communicate easily with each other from any location.

2) The graphical user interface requires commands to be typed on a computer keyboard.

3) Command-line interfaces include graphical elements, such as windows, icons and buttons.

4) The first commercially available GUI was called «XEROX».

5) Nowadays GUIs must be designed for the appropriate type of input.

VIDEO

9. Have a look at different online shops. Study their design and the different elements they have used, and make a list of the type of products and services they offer.

«The History of the Graphic User Interface»

Follow this link: https://www.youtube.com/watch?v=U1Oy4X5Ni8Y

Watch the video providing information concerning the history of GUI.

10. Find out the following.

1) What two main types of computer user interfaces are mentioned?

2) What way of interacting with a computer does the command line interface provide?

3) What is the main input device used for the command line interface?

4) What is the biggest disadvantage of the command line interface?

5) What way of interacting with a computer does the graphic user interface provide? 6) What are the input devices used for the graphic user interface?

7) What was at the very beginning of interacting man with a computer?

8) What happened in 1962?

9) Why is 1973 highlighted in the video?

10) What other important events in the history of graphic user interface are mentioned?

LANGUAGE DEVELOPMENT

11. Choose the proper term for the following definitions.

1. The piece of computer hardware used to input text, characters, and other commands into a computer or similar device is … .

a) touchscreen b) keyboard c) mouse d) microphone;

2. A palm-sized, button-operated pointing device that can be used to move, select, activate, and change items on a computer screen is … .

a) touchscreen b) keyboard c) mouse d) microphone;

3. A touch-sensitive display screen on a computer or other electronic device: touching different portions of the screen with a finger or stylus will cause the device to take actions determined by a computer program.

a) touchscreen b) keyboard c) mouse d) microphone;

4. A device used in sound-reproduction systems for converting sound into electrical energy, usually by means of a ribbon or diaphragm set into motion by the sound waves.

a) touchscreen b) keyboard c) mouse d) microphone;

5. A picture or symbol that appears on a monitor and is used to represent a command, as a file drawer to represent filing is … .

a) icon b) image c) cursor d) emoticon;

6. Computer hardware or software designed to communicate information between hardware devices, between software programs, between devices and programs, or between a device and a user is … .

a) software b) interface c) interaction d) boundary;

7. … is a separate viewing area on a computer display screen in a system that allows multiple viewing areas as part of a graphical user interface.

a) window b) icon c) image d) cursor;

8. … is a very thin, portable computer, usually battery-powered, having a touchscreen as the primary interface and input device and lacking a physical keyboard and lid.

a) mainframe b) tablet c) laptop d) interface.

12. Complete the following sentences.

1) The graphical user interface (GUI) allows users … .
2) Command-line interfaces (CLIs) require commands to … .
3) A user interface includes … .
4) Today nearly all digital interfaces are.… .
5) The first commercially available GUI, called «PARC,» was developed by … .
6) For several decades, GUIs were controlled exclusively by … .
7) GUIs must be designed for the appropriate type of input as … .
8) A menu bar and windows with small icons that can be easily navigated using …. 9) TV interfaces are built to work with a remote control… .
10) Automotive interfaces are often designed to be controlled with … .

13. Fill in the blanks with words and word-combinations from the table.

a) command b) power c) interface d) monitor e) effectively; f) user g) first h) popular i) designed j) complex.

GUI is a program …1… that takes advantage of the computer's graphics capabilities to make the program easier to use. Well-designed graphical user interfaces can free the …2… from learning … 3… command languages. On the other hand, many users find that they work more …4… with a command-driven interface, especially if they already know the …5… language. The …6… graphical user interface was …7… by Xerox Corporation's Palo Alto Research Center in the 1970s, but it was not until the 1980s and the emergence of the Apple Macintosh that graphical user interfaces became …8… . One reason for their slow acceptance was the fact that they require considerable CPU …9… and a high-quality …10…, which were prohibitively expensive.

14. Read and translate the text.

Types of graphics software

Computer graphics are pictures created, changed or processed by computers. There are two categories.

1. **Bitmapped graphics** represent images as bitmaps; they are stored as pixels and can become a bit distorted when they are manipulated. The density of dots, known as the resolution and expressed in dots per inch, determines how sharp the image is.

2. **Vector graphics** represent images as mathematical formulae, so they can be changed or scaled without losing quality. They are ideal for high-resolution output.

There are different types of graphics software.

– **Image manipulation programs** let you edit your favourite images. For example, you can scan a picture into your PC or transfer a photo from your camera and then add different effects, or filters.

– **Painting and drawing programs**, also called **illustration packages**, offer facilities for freehand drawing, with a wide choice of pens and brushes, colours and patterns. One example is *Windows Paint*.

– **Business graphics programs**, also called **presentation software**, let you create pie charts, bar charts and line graphs of all kinds for slide shows and reports. You can import data from a database or spreadsheet to generate the graphs.

– **Computer-aided design (CAD)** is used by engineers and architects to design everything from cars and planes to buildings and furniture. First they make a **wireframe**, a drawing with edges and contour lines. Then if they want to colour the objects and add texture, they create a surface for the object; this is called 'filling the surface'. Finally, the design is **rendered** to make the object look realistic. Rendering is a process that adds realism to graphics by using shading, light sources and reflections.

– **Desktop publishing (DTP)** is based around a page layout program, which lets you import text from a word processor, clip-art (ready-made pictures) from graphics packages, and images from scanners or cameras, and arrange them all on a page. It is used to design and publish books, newspapers, posters, advertisements, etc.

– **Digital art**, or **computer art**, is done with applets that use mathematical formulae to create beautiful bright shapes called fractals. A fractal is a geometric figure with special properties, e.g. the Koch

snowflake or the Mandelbrot set. Fractals can also be used to model real objects like clouds, coastlines or landscapes.

Computer animation uses graphics program (e.g. digital cartooning systems) to create or edit moving pictures. Each image in a sequence of images is called a 'frame'.

– **Geographic information systems (GIS)** allow cartographers to create detailed maps.

15. Decide which type of graphics software is best for these users.

1) a person who wants to edit photos at home;

2) an economist who wants to present statistics in a form that can be easily understood;

3) engineers who need to design the interior and exterior of a new airplane;

4) a company which needs to design and publish a magazine;

5) an artist who wants to produce illustrations and freehand drawings for a book;

6) an organization that needs to make maps and 3D virtual models of the surface of the Earth;

7) computer animators who make movies like Toy Story and Shrek;

8) a mathematician who wants to make fractal shapes of natural phenomena

16.Complete the sentences with the words in the box.

presentation software image manipulation filters bitmaps page layout rendering fractals

1. … are stored as pixels and can become a bit distorted when they are manipulated. 2. In painting programs and image editors, … are special effects that can be applied to a picture, including drop shadows, textures, distortions, etc. 3. … let you create pie charts, bar charts and line graphs. 4. … adds textures to each surface and generates realistic reflections, shadows and highlights. 5. … are geometrical patterns that are repeated at a small scale to generate irregular shapes, some of which are similar to objects in nature. 6. … program lets you import text from a word processor, clip-art from graphics packages and images from scanners or cameras. 7. … programs let you edit your favourite images.

17. Talking points.
Discuss the following questions:

1. What computer graphics programs do you know?
2. Where can we use computer graphics?
3. What skills should a computer graphics developer have?

18. Read the text.

Henry Ford was an inventor, philanthropist and successful American businessman. Ford was the founder of the still popular Ford Motor Company which had its first success with the Model T Ford car that was released in 1908. Henry Ford revolutionized the way cars were designed and built, introducing assembly line factories for producing mass amounts of vehicles that led to lower prices for consumers and an explosion in car ownership throughout the United States.

Henry Ford was born on July 30, 1863 in Dearborn, Michigan, United States, in what was then known as Springwells Township. Ford's parents were Irish immigrants and the family lived on a farm, with Henry Ford being the eldest of six children. The family had a comfortable upbringing on the farm with a decent income, but even as a young person, Ford believed there was too much work and not enough income living from the land.

Ford began **his** career as an apprentice machinist in 1879, then returned to his family farm in 1882 before starting work with the Westinghouse company to service their steam engines. Ford then went to work at the Edison Illuminating Company where he became chief engineer in 1893.

Henry Ford had always enjoyed mechanical things and was always trying to improve or create more useful machinery. In 1893 **he** created his first gasoline driven buggy or Quadricycle that was completely self propelled. He then started the Detroit Automobile Company with several other investors to improve on his design, but the company went bankrupt soon after. Ford then started the Henry Ford Company, **which** he also left, before eventually starting the Ford Motor Company in 1903.

The Ford Motor Company released the successful Model T car in 1908. Generally cars were built one at a time and were only accessible to the very wealthy, but Ford continued to improve the way the cars were manufactured. In 1913 the cars were being mass produced by one of the first moving assembly lines. In 1918, half of the total amount

of cars in the United States were Model T's, 15 million cars were sold, and production of the Model T was finally stopped in 1927.

Henry Ford created the Ford Foundation in 1936 to promote human welfare through research grants, educational grants and development.

In 1947, at the age 83 Henry Ford died of a cerebral hemorrhage and was buried in the Ford Cemetery in Detroit.

19. Answer these questions according to the text:

a) **What** did Henry Ford **revolutionize**?
b) **What** was his **hometown name**?
c) **How many brothers/sisters** did he have?
d) What happened in **1879**?
e) **Where** did he become **chief engineer**?
f) **What** did he create in **1893**?

20. Complete the sentences according to the text:

a) Henry Ford was not only a _____
b) He introduced the way cars _____
c) Buggy was the _____
d) The first model_____appeared _
e) His workers were _____
f) His foundation had the purpose of _

21. What /who do the underlined words refer to?

a) his_____b) he_____c) which_____

22. Activate pre-existing knowledge and think of one advantage of using computer graphics in the car industry.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers. Waiting for you!

A couple from Minneapolis decided to go to Florida for a long weekend to thaw out during one particularly icy winter. Because both had jobs, they had difficulty coordinating their travel schedules. It was decided that the husband would fly to Florida on a Thursday, and his wife would follow him the next day. Upon arriving as planned, the husband checked into the hotel. There he decided to open his laptop and send

his wife an e-mail back in Minneapolis. However, he accidentally left off one letter in her address, and sent the e-mail without realizing his error.

In Houston, a widow had just returned from her husband's funeral. He was a minister of many years who had been 'called home to glory' following a heart attack. The widow checked her e-mail, expecting messages from relatives and friends. Upon reading the first message, she fainted and fell to the floor. The widow's son rushed into the room, found his mother on the floor, and saw the computer screen which read:

To: My Loving Wife

From: Your Departed Husband

Subject: I've Arrived!

I've just arrived and have checked in. I see that everything has been prepared for your arrival tomorrow. Looking forward to seeing you then! Hope your journey is as uneventful as mine was.

(P.S. Sure is hot down here!)

Shelly

UNIT 15
WORD PROCESSOR

LEAD-IN

1. Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:
«The great myth of our times is that technology is communication».
Libby Larsen

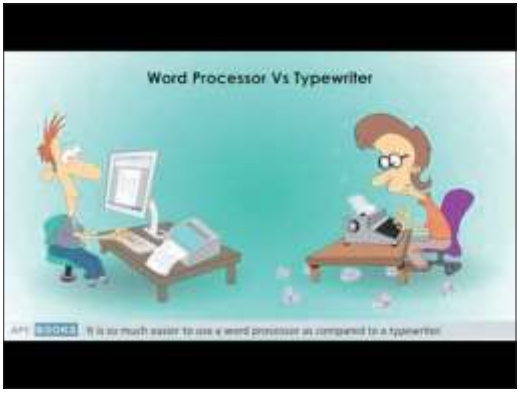
2. Discuss these questions.

– What is a word processor?
– What makes word processors superior to traditional typewriters?
– Make a list of the most important features offered by a word processor?

3. Watch the video «Word Processor».

– Watch the video and write down the nouns.
– Watch again and write down the verbs.
– Watch a third time and write down the adjectives.
– Write a brief summary using the nouns, verbs and adjectives you wrote down.

Word Processor



https://www.youtube.com/watch?v=mdyG2bDTb7I (1.39 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

word processor – текстовий редактор;
composing – компонування, складання;
editing – редагування;
font – шрифт;
formatting – форматування, задавання формату;
printing – друкування;
typewriter – друкарська машинка;
feature – особливість, риса;
memory card – карта пам'яті;
markup – розмітка тексту / документа;
image – зображення;
graphics – графіка;
thesaurus – тезаурус, енциклопедія;
Web integration – веб-інтеграція, веб-компонування;
newsletter – бюлетень;
proofread – коригувати, вичитувати;
MS-DOS (Microsoft Disk Operating System) – операційна система MS-DOS;
monochrome display – монохромний (однокольоровий) дисплей;
spell-checking program – програма перевірки правопису;
take advantage – скористатися;
Microsoft Office suite – пакет офісних програм Microsoft.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these word-combinations.

1) word	a) text-entry;
2) font	b) thesaurus;
3) spell-checking	c) correction;
4) built-in	d) display;
5) text	e) formatting;
6) keyboard	f) processor;
7) monochrome	g) documents;
8) save	h) program;
9) formatting	i) sets;
10) document	j) options.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

WORD PROCESSOR

A word processor is an electronic device or computer software application, that performs the task of composing, editing, formatting, and printing of documents. The word processor was a stand-alone office machine in the 1960s, combining the keyboard text-entry and printing functions of an electric typewriter, with a recording unit, either tape or floppy disk with a simple dedicated computer processor for the editing of text. Although features and designs varied among manufacturers and models, and new features were added as technology advanced, word processors typically featured a monochrome display and the ability to save documents on memory cards or diskettes. Later models introduced innovations such as spell-checking programs, and improved formatting options.

As the more versatile combination of personal computers and printers became commonplace, and computer software applications for word processing became popular, most business machine companies stopped manufacturing dedicated word processor machines. As of 2009 there were only two U.S. companies, Classic and AlphaSmart, which still made them. Many older machines, however, remain in use. Since 2009, Sentinel has offered a machine described as a «word processor», but it is more accurately a highly specialised microcomputer used for accounting and publishing.

Word processing was one of the earliest applications for the personal computer in office productivity, and was the most widely used application on personal computers until the World Wide Web rose to prominence in the mid-1990s.

Although the early word processors evolved to use tag-based markup for document formatting, most modern word processors take advantage of a graphical user interface providing some form of what-you-see-is-what-you-get («WYSIWYG») editing. Most are powerful systems consisting of one or more programs that can produce a combination of images, graphics and text, the latter handled with type-setting capability. Typical features of a modern word processor include: multiple font sets, spell checking, grammar checking, a built-in thesaurus, automatic text correction, Web integration, HTML conversion, pre-formatted

publication projects such as newsletters and to-do lists, and much more. In its simplest form, a word processor is like an expensive typerwriter or typerwriter machine, with the improvement of being able to proofread, and correct mistakes before printing.

Microsoft Word is the most widely used word processing software according to a user tracking system built into the software. Microsoft estimates that roughly half a billion people use the Microsoft Office suite, which includes Word. Many other word processing applications exist, including WordPerfect (which dominated the market from the mid-1980s to early-1990s on computers running Microsoft's MS-DOS operating system, and still is favored for legal applications) and open source applications OpenOffice.org Writer, LibreOffice Writer, AbiWord, KWord, and LyX. Web-based word processors, such as Office Online, Google Docs, Zoho Writer or Quip are a relatively new category.

7. Comment on the notions expressed in the text.

1) The real strength of word processing lies in its ability to store, retrieve and change information.

2) Typing is still necessary (at least, for now) to put the information into the computer initially, but once in, the need to retype only applies to new information.

3) Microsoft Word is the most widely used word processing software according to a user tracking system built into the software.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) Microsoft Word is the most widely used word processing software according to a recent UNICEF report.

2) A word processor is a mechanical device that is used for typing and printing documents.

3) The features and designs of word processors were all the same among manufacturers and models.

4) In the 1960s word processors typically featured a monochrome display and the ability to save documents on memory cards or diskettes.

5) Later on, innovations such as spell-checking programs, and improved formatting options were introduced.

6) Most business machine companies stopped manufacturing dedicated word processor machines as the more versatile combination of personal computers and printers became commonplace.

7) Since 2009, Sentinel has offered a machine described as a «typewriter».

8) Word processing was one of the earliest applications for the personal computer in accounting.

VIDEO

9. Follow this link: https:// https://www.youtube.com/watch?v=N_DeRSf8tWw

Watch the video presenting a tour of the AlphaSmart Neo2 word processor.

«The AlphaSmart Word Processor»

Find out the following.

1) What company is mentioned as a producer? When was it founded?

2) What does the device look like?

3) What market was AlphaSmart designed for?

4) How did the device change in 2002? What were its basic functions?

5) What were the features of AlphaSmart in 2013?

6) Why is this AlphaSmart Neo 2 keyboard comfortable?

7) Which function keys are especially useful?

8) How if the device powered?

9) How can the documents be printed?

10) How can you get texts from AlphaSmart Neo 2 to other devices?

11) What different modes does AlphaSmart Neo 2 have?

12) What is the biggest advantage of AlphaSmart Neo 2 according to the author?

LANGUAGE DEVELOPMENT

10. Read the text.

Word processing

A word processor enables you to create a document, store it electronically on a screen, modify it by entering commands and characters from the keyboard, and print it on a printer.

Word processors usually support these features (and a few others).

Cut and paste: Allows you to remove (cut) a section of text and insert (paste) it somewhere else.

Find and replace: Allows you to direct the word processor to search for a particular word or phrase. You can also direct the word processor to replace one group of characters with another everywhere that the first group appears.

Word wrap: The word processor automatically moves to the next line when you have filled one line with text, and it will readjust text if you change the margins.

Print: Allows you to send a document to a printer to get hard copy.

Font specifications: Allows you to change fonts within a document. For example, you can specify bold, italics, and underlining. Most word processors also let you change the font size and the typeface.

Graphics: Allows you to include illustrations and graphs in a document.

Headers, footers and page numbering: Allows you to specify customized headers and footers that the word processor will put at the top and bottom of every page. The word processor automatically keeps track of page numbers so that the correct number appears on each page.

Layout: Allows you to specify different margins within a single document and to specify various methods for indenting paragraphs – how much space you leave between the margins and the paragraphs.

Merge: Allows you to merge text from one file into another file. This is particularly useful for generating many files that have the same format but different data.

Spell checker: A utility that allows you to check the spelling of words. Ir will highlight any words that it does not recognize.

Thesaurus: Allows you to search for synonyms without leaving the word processor.

11. Match the terms from the text with their definitions.

1. A program used for preparing documents and letters.
2. A row of words that open up menus when selected.
3. The distinctive design of letters and characters, e.g. Arial Courier.
4. Text printed in the top margin
5. Text printed in the bottom margin
6. The way text is arranged on the page, including margins, paragraph format, columns, etc.
7. A function that enables you to combine two files into one.

12. Make up word combinations:

1. to display a document	a) with another
2. to store a document	b) for a particular word
3. to modify a document	c) hard copy
4. to print a document	d) by entering commands
5. to support	e) fonts
6. to search	f) on a screen
7. to replace one group of characters	g) of page numbers
8. to get	h) electronically on a disk
9. to change	i) on a printer
10. keeps track	j) the features

13. Read the text and decide: True, False or Not Given?

1. The talk button is on the side of the watch.
2. You will have to set the time yourself.
3. The watch has a camera.
4. The watch knows how much exercise you are doing.
5. The watch will be released in March 2015.
6. The watch isn't very accurate.
7. You can buy things with the watch.
8. The watch will cost 500 dollars.

Apple Watch

To be released in early 2015 is the Apple Watch, not called as you might expect the iwatch, will probably see many people stop using their smart phone as much, but soon start using a smart watch.

There will be three different styles of Apple Watch to choose from in two sizes each.

Which style do you prefer?

The crown wheel on the watch is a circular button on the side which is pressed and turned to use the watch, and under that is another button that you press to talk to people, called the talk button.

Crown wheel and talk button on the side

When you have a message or social media updates the strap will vibrate in different ways. The watch on the back has some sensors and knows how much exercise you are doing, your heart rate and how many calories you have burned, the idea is to help people live a healthier lifestyle.

The watch is said to be very accurate as it checks the time against global time and always changes the time wherever you are by using GPS. The battery life is said to probably be about a day, so it will need to be charged every night.

As well as this you can of course make phone calls on the watch, send texts, emails, and you can use it to buy things, with a built-in payment system connected to your credit card. It also works to control the music on your iphone or see what your iphone camera sees.

14. Talking points.

Discuss these questions.

– Would you like to own an Apple Watch?
– What style of Apple watch would you buy?
– Do you think that your parents would like one?
– Do you think it's too expensive?
– Would you use it for sport?
– Do you think many people will have one or will they be unpopular?
– Do you think more people will buy them in the USA, or more people will buy them in your country?

15. Three major features that word processors offer are spell checkers, online thesauruses and grammar checkers. Activate pre-existing knowledge and write a brief description about their features and how they can be used.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.

How did the computer get out of the house?
He used windows.

UNIT 16
PROGRAM DESIGN AND COMPUTER LANGUAGES

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«The real danger is not that computers will begin to think like men, but that men will begin to think like computers».*
Sydney Harris

2. Discuss these questions.

– Can you explain what you think programming is?

– Look at the definition of programming in the Glossary. Is it similar to yours?

– What knowledge and skills are necessary for programming?

– Can you name any programming languages?

3. Watch the video «Program Design and Computer Languages».

– Before you begin, say the terms you might hear and use.

– Watch the video and render what you remember about it. Say what you heard in your own words. Check whether suggested by you academic vocabulary was used by the presenter and provide their definitions.

– Extend the story by saying what you think might happen as alternatives to what is presented in the video.

– Write down any thoughts that come to mind about what you've seen.

Program Design and Computer Languages

https://www.youtube.com/watch?v=bjFvcFjJpE0 (8.07 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

programming – програмування, упорядкування програми;
instruction – машинна команда;
parse – аналіз, розгляд; розглядати (речення);
web browser – веб-навігатор, програма веб-перегляду;
forum – телеконференція, форум;
guestbook – гостьова книга;
availability – наявність, придатність;
suitability – відповідність, придатність;
static – статичний, непорушний;
server-side – на стороні сервера;
code – код (програми);
client – клієнт (користувач, комп'ютер або програма, що запитує послуги);
markup – розмітка (тексту, документа);
deliver – доставити;
developer – розробник;
maintaining – підтримка, обслуговування;
download – завантажувати, скачувати;
upload – пересилати файл (мережею) із клієнтського комп'ютера в інший, вивантажити;
verify – перевірити, вивіряти, верифікувати;
conventional – звичайний, загальноприйнятий;

compiler – компілятор, транслятор;
HTML (Hyper Text Markup Language) – мова гіпертекстової розмітки, мова розмітки гіпертексту, мова HTML;
web site programming – програмування веб-сайту;
programming language – мова програмування;
markup language – мова розмітки.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these wordcombinations.

1) give	a) pictures;
2) write	b) power;
3) web	c) applications;
4) view	d) the code;
5) lookup	e) directions;
6) execute	f) applications;
7) Internet	g) technologies;
8) run	h) instructions;
9) static	i) access;
10) computational	j) browser.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

PROGRAMMING AND GLOBAL COMPUTER NETWORKS

What is Web Programming? Programming is the art of telling a computer what to do. Programming is giving written instructions in a logical manner that the computer can understand. Essentially, you give the computer small steps of instructions, and the computer goes down the list, executing each one in order. Programming allows you to make new software and have the computer do new things. Web site programming is the same except you write applications or web pages that are used by a web browser.

Web Site Programming is the practice of writing applications that run on a web server and can be used by many different people. Many applications work really well as a web application. Some examples of popular web applications include Flickr, Gmail, and Google Maps. You are able to upload and view pictures, send email and lookup directions

using these web applications and they are all made possible through web site programming.

When you access your page with a browser, your web server will parse, or read through, your HTML page line by line and when it comes across a programming language, it will execute the code. For example, it writes out the current date on the page and then sends the page back to your web browser. Your web browser just sees a normal web page with a date but the server will generate a different web page when it is loaded on a different date. Web site programming allows you to turn a simple, static HTML page into a dynamic, Web 2.0 masterpiece. It allows others to interact with your web site and use the application on any computer with Internet access. Web site programming is often easier than programming applications that will run directly on the computer. Essentially, if you want to make or edit anything dynamic on your website, such as a forum, a guestbook, or even a form submission, you will need to know how to do some web site programming.

All web programming is done with web programming languages. Just as there is a diversity of programming languages available and suitable for conventional programming tasks, there is a diversity of languages available and suitable for Web programming. There is no reason to believe that any one language will completely monopolize the Web programming scene, although the varying availability and suitability of the current offerings is likely to favor some over others. These languages can include static technologies like HTML, XHTML, CSS, JavaScript, and XML. However, most web site programming is done using server-side web programming languages. This code runs on the server and then gives static information back to the web browser. The most popular web programming languages are: PHP, ASP.NET, Ruby on Rails, Perl, ASP classic, Python, and JSP.

HTML (Hyper Text Markup Language) is the basic language understood by all WWW (World Wide Web) clients. HTML is a markup language rather than a complete programming language. An HTML document (program) is ASCII text with embedded instructions (markups) which affect the way the text is displayed. HTML is limited in its computational power. This is intentional in its design, as it prevents the execution of dangerous programs on the client machine. Given the diversity of operating systems and hardware platforms, currently in use on the Web, a great efficiency results from only dealing with a single form of an application. The success of HTML has proven this,

and Java has seconded it. The ability to deliver a platform-independent application is of great appeal to developers, who spend a large portion of their resources developing and maintaining versions of their products for the different hardware/software platform combinations.

Viruses have proven that executing binary code acquired from an untrusted, or even moderately trusted, source is dangerous. Code that is downloaded or uploaded from random sites on the web should not be allowed to damage the user's local environment. Downloading binary code compiled from conventional languages is clearly unsafe, due to the power of the languages. Even if such languages were constrained to some ostensibly safe subset, there is no way to verify that only the safe subset was used or that the compiler used was trustworthy (after all, it is under someone else's control). HTML proved that downloading source code in a safe language and executing it with a trusted interpreter was safe.

7. Comment on the notions expressed in the text.

1) Programming allows you to make new software and have the computer do new things.

2) Web site programming is often easier than programming applications that will run directly on the computer.

3) Viruses have proven that executing binary code acquired from an untrusted, or even moderately trusted, source is dangerous.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) Programming is the process of scheduling something, especially radio or television programmes.

2) Programming is giving oral instructions in a logical manner that the computer can understand.

3) Programming allows you to make new hardware and have the computer do new things.

4) Web Site Programming is the practice of writing applications that run on a web server.

5) HTML (Hyper Text Markup Language) is the basic language understood by all WWW (World Wide Web) providers.

6) The ability to deliver a platform-independent application is of great appeal to customers;

7) Code that is downloaded or uploaded from subsequent sites on the web should not be allowed to damage the user's local environment.

VIDEO

9. Follow this link: https://www.youtube.com/watch?v=f3EbDbm8XqY

Watch the video and answer the questions.

1) What top 5 programming languages are mentioned by the author?

2) What are the most important characteristics of each programming language?

3) Why is PYTHON ranked N 1? What are three reasons for that?

4) What are the average salaries for developers of these programming languages?

10. Listen to Andrea Finch, a software developer, talking to a group of students on a training course about how a program is written.

https://www.youtube.com/watch?v=4uk1qrCPlts (min: 56:40)

Audio script

I'd like to begin the course by giving you a very basic overview of the programming process. We'll then move to the details. So, to write a program, we normally follow these steps:

A program usually provides a solution to a given problem – for example, how to calculate wages and income tax in a big company. First of all, you have to understand exactly what the problem is and define it clearly. This means you have to decide, in a general way, how to solve the problem. The next step is to design a step-by-step plan of instructions. This usually takes the form of a flowchart, a diagram that uses special symbols to show how the computer works through the program – where it makes decisions, where it starts and ends, where data is input, things like that.

Next, you write the instructions in a programming language, like BASIC, Pascal or C. These computer instructions are called source code. Then you have to use a compiler, a special program that converts the source code into machine code – the only language understood by the processor, which consists of 1 s and Os.

Once you've written the program, you have to test it with sample data to see if there are any bugs or errors. The process of correcting these errors is called debugging. Computer programmers have to find the origin of each error, write the correct instruction, compile the program again, and test it until it works correctly.

Finally, you have to write program documentation, a detailed description of how to use the program. A great program is not much good unless people know how to use it.

11. Put these steps into the correct order.

… Write instructions in a programming language
… Prepare documentation
1 Understand the program and plan a solution
… Make a flowchart of the program
… Compile the program (to turn it into machine code)
… Test and debug the program

12. Check your answer by considering steps in writing programs.

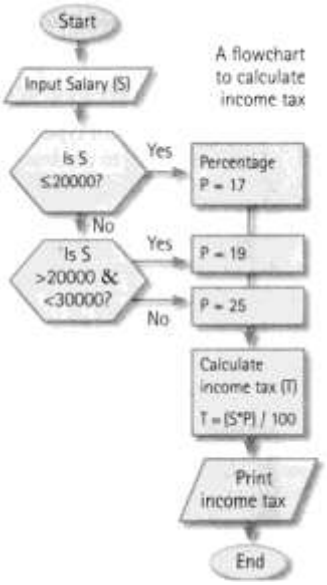
To write a program, software developers usually follow these steps.

– 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 (Pascal, C, etc.). 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 maintenance 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.

LANGUAGE DEVELOPMENT

13. Read the text. How many high-level computer languages are mentioned?

Unfortunately for us, computers can't understand spoken English or any other natural language. The only language they can understand directly is **machine code**, which consists of 1s and 0s (binary code).

Machine code is too difficult to write. For this reason, we use symbolic languages to communicate instructions to the computer. For example, **assembly languages** use abbreviations such as ADD, SUB, MPY to represent instructions. The program is then translated into machine code by a piece of software called an **assembler**. Machine code and assembly languages are called **low-level languages** because they are closer to the hardware. They are quite complex and restricted to particular machines. To make the programs easier to write, and to overcome the problem of intercommunication between different types of computer, software developers designed **high-level languages**, which are closer to the English language. Here are some examples:

- **FORTRAN** was developed by IBM in 1954 and is still used for scientific and engineering applications.
- **COBOL** (**C**ommon **B**usiness **O**riented **L**anguage) was developed in 1959 and is mainly used for business applications.
- **BASIC** was developed in the 1960s and was widely used in microcomputer programming because it was easy to learn. **Visual BASIC** is a modern version of the old BASIC language, used to build graphical elements such as buttons and windows in Windows programs.
- **PASCAL** was created in 1971. It is used in universities to teach the fundamentals of programming.
- C was developed in the 1980s at AT&T, it is used to write system software, graphics and commercial applications. **C**++ is a version of C which incorporates object-oriented programming: the programmer concentrates on particular things (a piece of text, a graphic or a table, etc.) and gives each object functions which can be altered without changing the entire program. For example, to add a new graphics format, the programmer needs to rework just the graphics object. This makes programs easier to modify.
- **Java** was designed by Sun in 1995 to run on the Web. Java applets provide animation and interactive features on web pages.

Programs written in high-level languages must be translated into machine code by a **compiler** or an **interpreter**. A compiler translates

the source code into **object code** – that is, it converts the entire program into machine code in one go. On the other hand, an interpreter translates the source code line by line as the program is running.

It is important not to confuse **programming languages** with **markup languages**, used to create web documents. Markup languages use instructions, known as **markup tags**, to format and link text files. Some examples include:

- **HTML**, which allows us to describe how information will be displayed on web pages.
- **XML**, which stands for **EX**tensible **M**arkup **L**anguage. While HTML uses pre-defined tags, XML enables us to define our own tags; it is not limited by a fixed set of tags.
- **VoiceXML**, which makes Web content accessible via voice and phone. VoiceXML is used to create voice applications that run on the phone, whereas HTML is used to create visual applications (for example, web pages).

14. Answer the questions.

1. Do computers understand human languages? Why? Why not?
2. What is the function of an assembler?
3. Why did software developers design high-level languages?
4. Which language is used to teach programming techniques?
5. What is the difference between a compiler and an interpreter?
6. Why are HTML and VoiceXML called markup languages?

15. Complete the sentences with a computer language from the text.

1. _____ allows us to create our own tags to describe our data better. We aren't constrainer by a pre-defined set of tags the way we are with HTML.
2. IBM developed in the l 950s. It was the first high-level language in data processing.
3. _____ applets are small programs that run automatically on web pages and let you watch animated characters, play games, etc.
4. _____ is the HTML of the voice web. Instead of using a web browser and a keyboard, interact with a voice browser by listening to pre-recorded audio output and sending, audio input through a telephone.
5. This language is widely used in the business community. For example, the statement ADDVAT NET-PRICE could be used in a_____program.

16. Complete the sentences with words from the boxes.

Program	programmers	programming	programmable

1. _____ is the process of venting a program using a computer language.
2. A computer _____ is a set of instructions that tells the computer how to do a specific task.
3. Most computer_____make a plan of the program before they write it.
4. A_____keyboard allows the user to configure the layout and meaning of the keys

Compile	compiler	compilation

5. Programs written in a high-level language require_____– that is, translation into machine cone, the language understood by the processor.
6. A source program is converted into machine code by software called a _____
7. Programmers usually_____then programs to generate an object program and diagnose possible errors.

Bug	debug	debugger	debugging

8. Any error or malfunction of a computer program is known as a _____
9. A_____is a program used to test and_____other programs.
10. The process of going through the code to identify the cause of errors and fixing them is called.

17. Reading comprehension

As access improves, online shopping takes off in Asia

SINGAPORE: From dresses to handbags, diamonds to music downloads, consumers in Asia are taking to Internet shopping as never before, making the region one of the world's fastest- growing e-commerce markets.

«I like to shop for clothes online because no sales girls will disturb me,» said Cecelia Wang, a 23-year-old university student in Taipei who said she spent about 1,500 Taiwan dollars, about $43, each month on Internet shopping. «For online shopping, all I need to do is sit in my room and shop, which is great.»

Internet commerce is increasingly making ***its*** presence felt in Asia because telecommunication has improved and payment which is a major obstacle to online shopping, is becoming more and more secure, analysts say.

The percentage of the population that has Internet access, is about 17 percent in Asia versus 73 per cent in North America and almost 50 percent in Europe, according to www.internetworldstats.com.

As more people in countries like China and India get hooked up to the Internet, online sales are expected to rise by an average of 20 percent a year. In some markets, including Japan, ***they*** are expected to increase by as much as 40 percent annually.

18. Tick the right alternative:

The text is about: – the risks of internet shopping in Asia
– buying diamonds in Asia
– The quick development of internet shopping in Asia.

19. Answer the following question with details from the text.

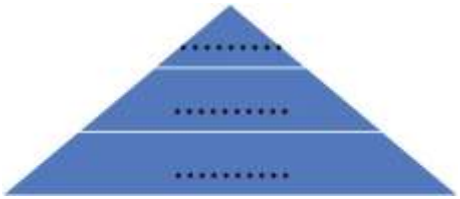
Why does Cecelia like shopping for clothes online? Provide two reasons:

a/……

b/……

20. Classify the following countries in the pyramid according to the percentage of people who have access to the internet as stated in the text.

(The countries are Europe/ North America/Asia)



21. Fill in the blanks with words from the box.

Take / seats / fly / airport / help / check-in / accommodation / flight / sorry

Agent: Cathay Pacific Airways. Can I…..... you?
Ani: Yes. I need a ..... from Tokyo to New York on Friday. Do you have any ..... ?
Agent: Let me see. Yes. I have one on the 5:30 flight.
Ani: Five thirty! What's the .....time?
Agent: One hour economy. Thirty minutes business class. Will you take that?
Ani: No. I won't get to the..... in time. Would you mind checking when the next flight will leave?(2)
Agent: There will be one on Saturday at the same time.
Ani: Fine. I'll..... that.
Agent: Just let me check. Oh, I'm....., that flight's full. There won't be another direct flight on Friday.

22. Circle the right alternative.

«Where are you from?» asked the passenger sitting next to me on the plane

«Chicago,» I said.

«That's nice. I'm from Mapleton. It's a small town in North Michigan. ***(did you hear/Have you heard/ do you hear)*** of it?»

«Oh yes, I have,» I said. «Michigan is a beautiful state. I (have been/ was/ were) there on vacation many times.»

«***(will /were/ are)*** you in Michigan on vacation this year?»

«No, I went far away from home this year I went to India,» I replied.

«Oh, that's nice. Is it a ***(longest/longer/ long)*** drive from Chicago to India?» She ***(asks/ is asking /asked)*** me. My mouth ***(fell/ fall /is falling)*** open.

I didn't know how to respond. Some people certainly need to study geography.

23. With the help of an online computer dictionary, find the meaning of these words:

Cyber – cyberculture – cybercrime – cybercast – cyberattack – cyberquatting;
e-carg – e-cash – e-book – e-calling – e-signature.

24. Activate pre-existing knowledge and write a list of the advantages and disadvantages of using networks.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.

Window Problems

A blonde texts her husband on a cold winter's morning: «Windows frozen, won't open.» Husband texts back: «Gently pour some lukewarm water over it and gently tap edges with hammer.»

Wife texts back 5 minutes later: «Computer really messed up now».

UNIT 17
OBJECT-ORIENTED PROGRAMMING

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«It's fine to celebrate success but it is more important to heed the lessons of failure.»*
Bill Gates

2. Discuss these questions.

– Can you define what object-oriented programming is?
– What are the advantages of using object-oriented programming?
– What are the three key features of object-oriented programming?

3. Watch the video «Object-oriented Programming».

– While watching the video, write down any new vocabulary you hear.
– Check the definition and slowly build up your own personalised vocabulary booklet.
– Present a short plan so that you can summarize and render what you heard in the video.
– Write a brief summary.

Object-oriented Programming

https://www.youtube.com/watch?v=xoL6WvCARJY (7.29 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

object – об'єкт;
object-oriented programming – об'єктно-орієнтоване програмування;
class – клас, тип об'єкта;
procedure – процедура;
encapsulation – інкапсуляція;
polymorphism – поліморфізм;
inheritance – спадкування;
reusability – повторне використання;
refactoring – рефакторинг;
extensibility – розширюваність, можливість нарощування;
maintenance – супровід, підтримка, експлуатація, технічне обслуговування;
efficiency – ефективність, продуктивність;
challenge – виклик;
manipulate – обробляти, маніпулювати;
widget – користувацький засіб керування;
scroll bar – смуга або лінійка прокручування;
identify – розпізнавати, визначати, ідентифікувати;
programmer – програміст; пристрій програмного керування;
design – розробляти, проектувати, конструювати;
relate – відноситися, установлювати зв'язок;
generalize – узагальнювати, поширювати;
sequence – послідовність;
accurate – точний, безпомилковий;
distribute – поширювати, розподіляти, розповсюджувати;
data modelling – моделювання даних;
data class – клас даних;
data hiding – обмеження доступу до даних;
data corruption – порушення цілісності даних.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these word-combinations.

1) programming	a) desktop;
2) logical	b) data;
3) input	c) applications;

4) human	d) language;
5) computer	e) analysis;
6) logic	f) coding;
7) thorough	g) procedure;
8) accurate	h) networks;
9) corporate	i) sequence;
10) Web	j) beings.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

OBJECT-ORIENTED PROGRAMMING

Object-oriented programming (OOP) is a programming language model organized around objects rather than «actions» and data rather than logic. Historically, a program has been viewed as a logical procedure that takes input data, processes it, and produces output data.

The programming challenge was seen as how to write the logic, not how to define the data. Object-oriented programming takes the view that what we really care about are the objects we want to manipulate rather than the logic required to manipulate them. Examples of objects range from human beings (described by name, address, and so forth) to buildings and floors (which properties can be described and managed) down to the little widgets on a computer desktop (such as buttons and scroll bars).

OOP features include the following:

– Encapsulation: This makes the program structure easier to manage because each object's implementation and state are hidden behind well-defined boundaries.

– Polymorphism: This means abstract entities are implemented in multiple ways.

– Inheritance: This refers to the hierarchical arrangement of implementation fragments.

The first step in OOP is to identify all the objects the programmer wants to manipulate and how they relate to each other, an exercise often known as data modeling. Once an object has been identified, it is generalized as a class of objects (think of Plato's concept of the «ideal» chair that stands for all chairs) which defines the kind of data it contains and any logic sequences that can manipulate it. Each distinct

logic sequence is known as a method. Objects communicate with well-defined interfaces called messages.

Object-oriented programming allows for simplified programming. The concepts and rules used in object-oriented programming provide its benefits including reusability, refactoring, extensibility, maintenance and efficiency. Other important benefits are as follows:

– The concept of a data class makes it possible to define subclasses of data objects that share some or all of the main class characteristics. Called inheritance, this property of OOP forces a more thorough data analysis, reduces development time, and ensures more accurate coding.

– Since a class defines only the data it needs to be concerned with, when an instance of that class (an object) is run, the code will not be able to accidentally access other program data. This characteristic of data hiding provides greater system security and avoids unintended data corruption.

– The definition of a class is reuseable not only by the program for which it is initially created but also by other object-oriented programs (and, for this reason, can be more easily distributed for use in networks).

– The concept of data classes allows a programmer to create any new data type that is not already defined in the language itself.

Simula was the first object-oriented programming language. Java, Python, C++, Visual Basic.Net and Ruby are the most popular OOP languages today. The Java programming language is designed especially for use in distributed applications on corporate networks and the Internet. Ruby is used in many Web applications. Curl, Smalltalk, Delphi and Eiffel are also examples of object-oriented programming languages.

7. Comment on the notions expressed in the text.

1) The programming challenge was seen as how to write the logic, not how to define the data.

2) The concept of data classes allows a programmer to create any new data type that is not already defined in the language itself.

3) Ruby is used in many Web applications.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) Object-oriented programming (OOP) is a programming language model organized around actions rather than objects;

2) The programming benefit was seen as how to write the logic, not how to define the data.

3) Object-oriented programming takes the view that what we really care about are the objects we want to design.

4) Examples of objects range from people to various subjects.

5) The most important step in OOP is to identify all the objects the programmer wants to manipulate.

6) One of the OOP advantages is that the concept of data classes allows a programmer to create any new data type that is not already defined in the language itself.

7) The first object-oriented programming language was Java.

LANGUAGE DEVELOPMENT

9. Read the dialogue between the software engineer and the hotel owner who decided to install a new computer system.

Identify what questions the Software Engineering programmer asked.

Analyst. If I could find out what you do at present. What kind of system do you have at the moment?

Hotel owner. Well, we introduced err a computerized system about five years ago but I'm not very happy with it. What we've got is err, just a system that allows us to enter bookings as they come in.

A. So is everything computerized or ... ?

H. No, it's only the reservations system.

A. So what features would you like to add to this?

H. Well, there are a number of things. I would like a more sophisticated system that would allow me to link reservations and invoicing. I'd like the system to handle invoices also.

A. OK. Now the output. What kind of output are you looking for from this?

H. Err, well there are a number of things I'd like. One is of course the total invoice, a bill for the guests. I'd like it also to display room bookings so that if someone phones up it's easy for the reception staff to identify quickly which rooms are occupied and which are available.

A. Is that on the screen?

H. Yes, I would like it to be on the screen if possible. A sort of room chart on the screen.

A. And the invoices, is it pre-printed forms you use?

H. Would pre-printed forms be useful?

A. Well, if you have a coloured logo, it's better to have the forms pre-printed.
H. Yes, I'd like that. And of course I want the invoice to have details of all expenditure so if the guest has a drink at the bar, extra meals at the restaurant, anything of that nature, it's all detailed. I'd also like the system to generate lists of previous guests so I can send them news of special offers.
A. Has the system to print out addressed envelopes?
H. If it could, that would be very useful.
A. Now, who's going to be inputting the information?
H. Right, the main users would be the reception staff. They would be dealing with bookings, largely by phone but some by fax or letter. The accountant, of course, would be using the system to create bills. And, err, bar and restaurant staff would have to enter sales.
A. Are the staff experienced in using computers or would they need a lot of training
H. Reception staff are quite experienced, however, our accountant would need some training as she's used to a paper system.
A. What about the bar and restaurant staff?
H. Well, I suppose they would be entering only very restricted information on sales.
A. Hm. What computer hardware do you have at the moment?
H. Er, we've got one PC at reception and one in the office. What would I need?
A. One for the accountant, one in the bar and restaurant. And they would have to be networked.
H. If they're networked together, that doesn't mean that people can get into the accounts, does it?
A. No, it would be password-protected. And the printers?
H. I don't want anything too noisy.
A. Laser printers tend to be quieter. Now, it would be useful to talk to the receptionist to get details of the input for the guest records and to the accountant to find out what she needs.
H. Great, I'll set up meetings for you. What's the next step?
A. I'll come back to you with a plan and we'll check through to make sure it has all the features you want. Then we'll create a program and try it out. We'll have to keep adapting it depending how well it works. And once you're happy with it, we'll put it into service and I'll fix some training for the staff.
H. Thanks very much.

10. Find the answers to the following questions.

1. What system does the hotelier have at present?
2. What problem is there with the existing system?
3. What form of output does the hotelier want?
4. Who will use the new system?
5. Which members of staff will equire the most training?
6. What concerns has the hotelier about a new system?
7. What kind of hardware will be required?
8. What is the next step?

11. Complete this text with a, an, the or nothing.

Linux is (1) …… operating system and it was initially created as (2)……hobby by a young student, Lines Torvalds, at the University of Helsinki in Finland. Version 1.0 of the Linux Kernel* was released in 1994. (3)……Kernel, at the heart of all Linux systems, is developed and released under GNU General Public License, and its source code is freely available to everyone.

Apart from the fact that it's freely distributed, (4)…… Linux's functionality, adaptability and robustness has made it the main alternative for proprietary Unix and Microsoft operating systems. IBM, Hewlett-Packard and other giants of the computing world have embraced Linux and support its ongoing development. More than (5)…… decade after its initial release, Linux is being adopted worldwide, primarily as (6)……server platform. Its use as a home and office desktop operating system is also on the rise. The operating system can also be incorporated directly into (7) …… microchips in a process called (8)……embedding, and it is increasingly being used this way in appliances and devices.

*The Kernel provides a way for software and other parts of the OS to communicate with hardware.

12. Complete the text «The Java Language» with the correct form of the verbs in the box.

Call be begin can decide rename have support develop base

The idea for Java started in 1990, when a team of software engineers at Sun Microsystems____ to create a language for a handheld device that could control and interact with various kinds of electronic

appliances, ranging from Nintendo Game Boys to VCRs and TV set-top boxes. They_____an object-oriented programming language that one of the engineers, James Gosling *Oak*, after the tree outside his window. The device even_____ an animated character named *Duke*, who would go on to become Java's mascot.

With the advent of the Web in 1993, the company made a web browser_____on the Oak language. Later on, this language was adapted to the Internet and_____*Java*. The 1.0 version of Java was officially introduced by Sun in May 1995.

At that time, web page_____only display text, pictures and hyperlinks. With the arrival of Java, web designers_____able to include animation and interactive programs on web pages. The first major application created with Java was the HotJava browser. The Java language _____ to attract serious attention from the internet community and was soon _____ by Netscape Navigator and MS Internet Explorer. Today, Java is a hot technology that runs on multiple platforms, including smart cards, embedded devices, mobile phones and computers.

13. Reading comprehension

Six ways social media negatively affects your mental health

Haut du formulaire

Bas du formulaire

The rise of social media has meant that we as a global population are more connected than we have ever been in the history of time. However, our reliance on social media can have a detrimental effect on our mental health, with the average Brit checking their phone as much 28 times a day.

While social media platforms can have their benefits, using them too frequently can make you feel increasingly unhappy and isolated in the long run.

The constant barrage of perfectly filtered photos that appear on Instagram are bound to knock many people's self-esteem, while obsessively checking your Twitter feed just before bed could be contributing towards poor quality of sleep.

Self-esteem

We all have our fair share of insecurities, some that we speak about openly and others that we prefer to keep to ourselves. However,

comparing yourself to others on social media by stalking their aesthetically perfect Instagram photos or staying up to date with their relationship status on Facebook could do little to assuage your feelings of self-doubt.

A study conducted by the University of Copenhagen found that many people suffer from «Facebook envy«, with those who abstained from using the popular site reporting that they felt more satisfied with their lives. «When we derive a sense of worth based on how we are doing relative to others, we place our happiness in a variable that is completely beyond our control,» Dr Tim Bono, author of *When Likes Aren't Enough* explained in *Healthista.*

Human connection

As human beings, it's so important for us to be able to communicate and forge personal connections with one another. However, it can be hard to do so when we're glued to rectangular screens, becoming more acquainted with our friends' digital facades than their real-life personas.

Stina Sanders, a former model who has 107,000 followers on Instagram, explained how social media sometimes makes her feel like she's being left out.

«I know from my experience I can get FOMO when I see my friend's photos of a party I didn't go to, and this, in turn, can make me feel quite lonely and anxious,» she told *The Independent.*

A study published in the *American Journal of Epidemiology* that assessed 5,208 subjects found that overall, regular use of Facebook had a negative impact on an individual's wellbeing.

Memory

Social media can be great for looking back fondly on memories and recounting how past events occurred. However, it can also distort the way in which you remember certain tidbits from your life. Many of us are guilty of spending far too much time trying to take the perfect photo of a visual marvel, all the while not actually absorbing the firsthand experience of witnessing it with your own two eyes.

«If we direct all of our attention toward capturing the best shots for our social media followers to admire, less will be available to enjoy other aspects of the experience in real time», said Dr Bono.

«Spending too much time on our phones will detract from those other aspects of the experience, undermining the happiness we could be gleaning from them».

Sleep

Having enough sleep is of paramount importance. However, many of us use our phones too soon before choosing the hit the hay, making it harder to doze off.

«Getting worked up with anxiety or envy from what we see on social media keeps the brain on high alert, preventing us from falling asleep,» explained Dr Bono.

«Plus, the light from our mobile device just inches from our face can suppress the release of melatonin, a hormone that helps us feel tired».

Attention span

It's not just your subconscious brain that you need to worry about, but also the extent to which your brain is able to fully concentrate when you're awake. While it's incredible to consider the amount of information readily available at our fingertips thanks to social media, it also means that people have become far more easily distracted.

«Social media has provided a means of constantly giving into the temptation of instant, easy-access entertainment», said Dr Bono.

Mental health

Not only has social media been proven to cause unhappiness, but it can also lead to the development of mental health issues such as anxiety or depression when used too much or without caution.

In March, it was reported that more than a third of Generation Z from a survey of 1,000 individuals stated that they were quitting social media for good as 41 per cent stated that social media platforms make them feel anxious, sad or depressed.

Ben Jacobs, a DJ who has more than 5,000 followers on Twitter, decided to go on a hiatus from the platform in January 2016 and has found the break really beneficial.

«Twitter did indeed make me feel anxious from time to time as it slowly dawned on me I was concerning myself with the feelings of the thousands of strangers I followed, while they didn't necessarily know who I was,» he said.

«Since my Twitter hiatus, I have had a clearer head with plenty of time to devote to other things such as waking up in a cold sweat at 3am and reading a book instead».

While you don't necessarily have to quit social media for good, if you feel like it's beginning to bog you down, why not consider allocating social media-free time slots during your daily routine? The slight change could do you a whole lot of good.

14. Match the words on the right with their meaning.

¬¬¬¬¬¬____reliance _____to create, to form

____detrimental_____to reach or obtain by reasoning

____barrage _____ to soothe, calm

____to assuage _____ an overwhelming quantity

_____to abstain _____ value

_____ to derive _____ the.state of needing someone or something for aid, support, or the like

_____ worth _____ to hold oneself back voluntarily

_____ to forge ¬¬¬_____damaging; harmful.

15. Match the words on the right with their synonyms.

¬¬¬____to distort ____ pause, interruption

____tidbits ____ important

____to undermine ____ tiny portion

____to glean ____ troubled

____paramount ____ deform; falsify

____distracted ____ pick out, collect

_____hiatus ____ sabotage

16. Fill in the gaps with the comparative and superlative.

– The rise of social media has meant that we are _____ (connected) than we have ever been in the history of time.

– Many of us are guilty of spending far too much time trying to take the_____perfect photo.

– Using a mobile phone before doing to bed makes it _____(difficult) to sleep.

– Socialmediaplatformsmakesomepeoplefeel_____ (anxious),_____(sad) and _____ (depressed) than others.

17. Answer the following questions. Justify your response with quotes from the text.

1. Dependence on social media can have a negative effect on our mental health. True False

2. The constant barrage of perfect photos that appear on Instagram can have a positive effect on peoples' self esteem.

True False

3. What did the study conducted by the University of Copenhagen find?

4. What does FOMO mean?

5. How did FOMO effect Stina Sanders ?

6. How does Social media distort the way in which you remember certain events from your life?

7. How, according to Dr Bono, does social media effect your attention span?

8. Social media can lead to the development of mental health issues. Name 3 and give statistics.

9. What does Ben Jacobs say about social media?

18. Activate pre-existing knowledge and write a paragraph describing whether social media play an important role in your life.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.

The oldest computer can be traced back to Adam and Eve. It was an apple but with extremely limited memory. Just 1 byte. And then everything crashed.

UNIT 18
JOBS IN INFORMATION TECHNOLOGY

LEAD-IN

1. Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:
«The biggest risk is not taking any risk… In a world that's changing really quickly, the only strategy that is guaranteed to fail, is not taking risks».
Mark Zuckerberg

2. Discuss these questions.

– Can you name jobs available in IT?

– Which qualifications would be the most useful if you wanted to work in the field of data processing?

– What knowledge and skills are necessary for jobs available in Information Technology?

– What factors help you decide whether the job is suitable for you?

– What services do IT specialists usually provide?

– What sectors do IT specialists usually work in?

3. Watch the video «Jobs in Information Technology».

– Before you begin, say the terms you might hear.

– Watch the video and render what problems are explained. Say what you heard in your own words.

– Check whether suggested by you academic vocabulary was used by the presenter and provide their definitions.

– Write questions about the video.

Jobs in Information Technology

https://www.youtube.com/watch?v=KuTOO28tRI4 (2 min.)

https://www.youtube.com/watch?v=vXIr9PsRJL8 (3.56 min.)

READING AND SPEAKING

4. Read and memorize active vocabulary.

specialist – фахівець, спеціаліст;
position – посада;
employee – працівник, співробітник;
employer – роботодавець;
recruiter – вербувальник;
job – робота;
entry-level – базовий рівень;
experience – досвід, стаж;
design – розробляти, проектувати;
maintain – підтримувати, обслуговувати;
employment – зайнятість;

provide services – надавати послуги;
train – навчати;
vendor – продавець, постачальник;
career – кар'єра, професія;
associate's degree – ступінь молодшого спеціаліста;
bachelor's degree – ступінь бакалавра;
deal with – мати справу з;
proficiency – вправність, майстерність;
support specialist – фахівець служби підтримки;
computer programmer – програміст;
computer system analyst – фахівець-аналітик в області обчислювальної техніки;
network administrator – адміністратор мережі;
database administrator – адміністратор бази даних;
applications architect – розробник структури системного ПЗ;
cloud architect – розробник сервісів хмарних обчислень;
computer forensic investigator – комп'ютерно-технічний експерт;
IT security specialist – фахівець з інформаційної безпеки;
stay up-to-date – залишитися в курсі;
handling hardware and software issues – оброблення апаратних і програмних проблем;
data encryption – шифрування даних;
a firm grasp of smith – тверде розуміння.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these word-combinations.

1) software	a) administration;
2) programming	b) systems;
3) provide	c) services;
4) database	d) architect;
5) technical	e) languages;
6) communication	f) degree;
7) computer	g) architect;
8) cloud	h) applications;
9) applications	i) programmer;
10) bachelor's	j) support.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

INFORMATION TECHNOLOGY JOBS

Information technology specialists work in positions using computer-based information systems. They work with both software applications and computer hardware. Entry-level positions require demonstrating computer knowledge and skills. Experience with multiple programming languages and diverse software and hardware is often expected.

Information technologists generally design, operate or maintain technology products. Not limited to employment with technology companies, information technology (IT) specialists may work with any businesses, agencies or organizations that use technology or manage large amounts of information. Regardless of the sector they work in, IT specialists usually provide similar services related to software, hardware, databases, Web resources, networks and enterprise systems.

Duties of an information technology specialist can include network management, software development and database administration. IT specialists may also provide technical support to a business or an organization's employees and train non-technical workers on the business's information systems. Advanced information technology specialists may design systems and assess the effectiveness of technology resources already in use or new systems that are being implemented. Additionally, they will determine the practicality of changes and modification of systems.

IT specialists will also work with external partners, including consultants, agencies and vendors, to arrive at the most appropriate system or integration of multiple systems. With information technology constantly changing, specialists must stay up-to-date on emerging technologies and the potential effectiveness of these advancements in their current system.

Regarding careers in IT, recruiters emphasize that hard-working, ambitious, entry-level employees can make an impact and advance quickly in their IT careers if they show talent and the drive to take on more responsibilities.

A certificate or an associate's degree are usually required to work as an information technology specialist, although a bachelor's degree

is often preferred by employers. Some of the optional certifications that can help increase job prospects involve training in Oracle, Cisco, and Microsoft. The services that information technology specialists provide can include handling hardware and software issues, or monitoring networks and databases. Other requirements might include training and experience in communication systems and networks, Internet and intranet development, data encryption and security. IT specialists are also expected to have a firm grasp of several programming languages, as well as experience dealing with a range of software and hardware types. Computer science, information science, engineering, and operation research are all majors that may lead to a career as an information technology specialist. IT specialists can demonstrate proficiency in particular areas by completing professional certification programs.

There is a wide range of jobs available in Information Technology, the most common of which are support specialist, computer programmer, computer system analyst, network administrator, database administrator, applications architect, cloud architect, computer forensic investigator, IT security specialists, etc.

7. Comment on the notions expressed in the text.

1) Not limited to employment with technology companies, information technology (IT) specialists may work with any businesses, agencies or organizations that use technology or manage large amounts of information.

2) IT specialists may also provide technical support to a business or an organization's employees and train non-technical workers on the business's information systems.

3) IT specialists can demonstrate proficiency in particular areas by completing professional certification programs.

8. According to the text, are the following sentences TRUE or FALSE? If they are false, say why.

1) Careers in information technology deal with the design, creation, management and maintenance of the varied components of the system, including software, hardware, networks, systems integration and multimedia.

2) Careers in the field of Web and Digital Communications are responsible for the creation and production of interactive media, including digital and multimedia products.

3) Careers in information support and services are responsible for planning, designing, updating and managing computer software and systems through software programming and development.

4) The IT sector employs workers in both technical and non-technical occupations.

5) Information technology specialists work only with computer hardware.

6) Duties of an information technology specialist can include enterprise management, software development and database administration.

7) IT specialists may provide financial support to a business or an organization's employees.

8) To work as an information technology specialist, a bachelor's degree is required by employers.

LISTENING

9. Chris Scott, the Personnel Manager is interviewing Sarah Brown. Listen to part of the interview and complete his notes.

https://www.youtube.com/watch?v=4uk1qrCPlts (min: 1:02:33)

Name: Sarah Brown
Qualifications:
Degree in (Aston University)
Languages: Basic Spanish and Italian
Work experience:
NCR____(one year)
Software for: ____
Programs for: _____
Database knowledge: _____
Present job: Works for Intelligent Software writing programs in COBOL and C.
Reasons for applying: _____

10. Find words in the text which mean the following.

1) a person who devotes himself or herself to one subject or to one particular branch of a subject or pursuit;

2) a person working for another person or a business firm for pay;

3) a person or business that employs one or more people, especially for wages or salary;

4) a post of employment; full-time or part-time position;

5) a person who designs and writes and tests computer programs;

6) a person who manages a communications network within an organisation;

7) a person responsible for the design and management of one or more databases and for the evaluation, selection and implementation of database management systems; 8) to make proficient by instruction and practice, as in some art, profession, or work; 9) an occupation or profession, especially one requiring special training, followed as one's lifework;

10) someone who supplies members or employees.

11. Complete the sentence using the given words and phrases:

software engineer;
computer security specialist;
blog administrator;
help desk technician; DTP operator;
hardware engineer;
network administrator;
webmaster.

1. A..... designs and develops IT devices.
2. A..... writes computer programs.
3. A..... edits and deletes posts made by contributors to a blog.
4. A. ..... uses page layout software to prepare electronic files for publication.
5. A..... manages the hardware and software that comprise a network.
6. A..... designs and maintains websites.
7. A..... works with companies to build secure computer systems.
8. A.....helps end-users with their computer problems in person, by email or over the phone.

12. Listen to four people talking about their jobs. Determine which job from the previous exercise does each person do.

https://www.youtube.com/watch?v=4uk1qrCPlts (min: 1:00:50)

Audio script

I'm 35 years old and I really enjoy working on the Web. I use Macromedia Dreamweaver to design, develop, market and maintain

web pages. For the last two years, I've been working for a successful TV company, where I'm responsible for updating their website regularly.

I started working in a computer support centre about three years ago. People phone and ask for help with things like: *my internet connection doesn't work, my hard drive has crashed, I think I've got a virus, l get a lot of error messages,* etc. I talk to the users, identify the problem and try to fix it. It's called troubleshooting.

I've got a degree in Electronic Engineering and I've been with International Mercury Computers for too years. In my job, I design, develop and test computers components, microprocessors, sound boards, etc. I work closely with a software engineer to ensure that the software is compatible with the hardware.

I've been working for Novell, a leading provider of Net services software, since 2006. I plan and carry out measures to make networks more secure. In other words I try to protect information from viruses and system crashes. I'm also in charge of assigning access passwords to employees.

13. Decide what types of work are performed by the following specialists:

1. Webmaster.
2. Help-desk troubleshooter.
3. Applications programmer.
4. Security specialist.
5. Systems programmer.

LANGUAGE DEVELOPMENT

14. Read the letter and fill in the blanks with the prepositions: *for, since, ago, until.*

Dear Mr Scott,

I am writing to apply for the position of Senior Programmer, which was advertised on 28th March in The Times.

I graduated in May 2002 and did a work placement with British Gas as part of my degree. Before taking my present job I worked for a year with NCR. I stayed in this job (1) ..... March 2004.

(2)… the last three years I have been working as a software engineer for Intelligent Software. I have designed four programs in COBOL for commercial use, and (3)……..January I have been writing programs in C for use in large retail chains. These have been

very successful and we have won several new contracts in the UK and Europe on the strength of my team's success.

Two years (4)……..I spent three months in Spain testing our programs and also made several visits to Italy, so I have a basic knowledge of Spanish and Italian. I now feel ready for more responsibility and more challenging work, and would welcome the opportunity to learn about a new industry.

I enclose my curriculum vitae. I will be available for an interview at any time.

I look forward to hearing from you.

15. Read the job request letter again and answer the following questions.

1. Which job is Sarah Brown applying for?
2. Where did she see the advertisement?
3. How long has she been working as software engineer?
4. What type of programs has she written?
5. When did she spend three months in Spain?

16. Read the information in the A, B, C texts and fill in the table.

	A	B	C
1. job title			
2. nature of work			
3. formal qualifications			
4. personal qualities			
5. technical skills			
6. how to get started			
7. how to make progress			

A. How to become a programming expert

The primary requirements for being a good programmer are nothing more than a good memory, an attention to detail, a logical mind and the ability to work through a problem in a methodical manner breaking tasks down into smaller, more manageable pieces. However, it's not enough just to turn up for a job interview with a logical mind as your sole qualification. An employer will want to see some sort of formal

qualification and a proven track record. But if you can show someone an impressive piece of software with your name on it, it will count for a lot more than a string of academic qualifications.

So what specific skills are employers looking for? The Windows market is booming and there's a demand for good C, C++, Delphi, Java and Visual Basic developers. Avoid older languages such as FORTRAN and COBOL unless you want to work as a contract programmer.

For someone starting out, my best advice would be to subscribe to the programming magazines such as Microsoft Systems Journal. Get one or two of the low-cost «student» editions of C++, Visual Basic and Delphi. Get a decent book on Windows programming. If you decide programming is really for you, spend more money on a training course.

B. How to become a Computer Consultant

The first key point to realise is that you can't know everything. However you mustn't become an expert in too narrow a field. The second key point is that you must be interested in your subject. The third key point is to differentiate between contract work and consultancy. Good contractors move from job to job every few months. A consultant is different. A consultant often works on very small timescales – a few days here, a week there, but often for a core collection of companies that keep coming back again and again.

There's a lot of work out there for people who know Visual Basic, C++, and so on. And there are lots of people who know it too, so you have to be better than them. Qualifications are important. Microsoft has a raft of exams you can take, as does Noxell, and in my experience these are very useful pieces of paper. University degrees are useless. They merely prove you can think, and will hopefully get you into a job where you can learn something useful. Exams like Microsoft Certified Systems Engineer are well worth doing. The same goes for network Certification. However, this won't guarantee an understanding of the product, its positioning in the market, how it relates to other products and so on. That's where the all-important experience comes in.

Here's the road map. After leaving university you get a technical role in a company and spend your evenings and weekends learning the tools of your trade - and getting your current employer to pay for your exams. You don't stay in one company for more than two years. After a couple of hops like that, you may be in a good position to move into a junior consultancy position in one of the larger consultancy companies.

By the age of 30, you've run big projects, rolled out major solutions and are well known. Maybe then it's time to make the leap and run your own life.

C. How to become an IT Manager

IT managers manage projects, technology and people. Any large organisation will have at least one IT manager responsible for ensuring that everyone who actually needs a PC has one and that it works properly. This means taking responsibility for the maintenance of servers and the installation of new software, and for staffing a help-desk and a support group.

Medium to large companies are also likely to have an IT systems manager. They are responsible for developing and implementing computer software that supports the operations of the business. They're responsible for multiple development projects and oversee the implementation and support of the systems. Companies will have two or three major systems that are probably bought off the shelf and then tailored by an in-house development team.

Apart from basic hardware and software expertise, an IT manager will typically have over five years experience in the industry. Most are between 30 and 45. Since IT managers have to take responsibility for budgets and for staff, employers look for both of these factors in any potential recruit.

Nearly all IT managers have at least a first degree if not a second one as well. Interestingly, many of them don't have degrees in computing science. In any case, the best qualification for becoming a manager is experience. If your personality is such that you're unlikely to be asked to take responsibility for a small team or a project, then you can forget being an IT manager.

17. Read the text again. Decide whether the following sentences are TRUE or FALSE.

1. You *need* to be able to emphasize with the person at the other end of the phone.

2. IT managers *have to* take responsibility for budgets.

3. You *must* be interested in your subject.

4. You *must have* worked for at least two years in systems analysis.

5. Experience with mainframes is *essential/critical*.

6. You *don't need to* have a degree in computing science.

7. You *needn't* have a degree in computing science.

8. You *don't have to* bean expert in everything.

9. You *mustn't* make unauthorised copies of software.

18. Read the two job advertisements and note the most important qualities a professional should have.

1. SENIOR PROGRAMMER required by DIGITUM-UK, a leading supplier of business systems to the insurance industry.

You will be able to work on the full range of software development activities – analysis, design, coding, testing debugging and implementation. At least two years' experience of COBOL or C++ is necessary.

As we are active in Europe, fluency in French, Italian or another European language is desirable.

Don't miss this opportunity to learn new skills and develop your career.

Send your CV to Chris Scott, Personnel Manager, Digitum-Uk, 75 Parkshill Street, London Sw14 3de

2. DTP operator *required for a leading financial magazine.*

We are looking for a bright, competent OuarkXPress operator with at least three years' experience in design and layout. Skills in Photocopy, Freehand or Illustrator an advantage.

Ability to work in a team and to tight deadlines is vital.

Please apply in writing, with CV and samples of your work, to Tom Parker, Production Manager, Financial Manthly, Stockton Street, London ES1A 4WW

Or apply online: Apply now.

Senior programmer / DIP operator

1. logical reasoning
2. patience and tenacity
3. being good with figures
4. imagination
5. self-discipline
6. accuracy
7. leadership skills
8. efficiency
9. creativity
10. drawing skills

19. Three English teenagers share their thoughts on what they think will happen in the future. Read the text and fill in the table below. What will happen in the future?

Hi, my name is Steve, I'm 15 years old and I live in London. I think that great things will happen in the future. It will be like a science-fiction film but only better because it will be real!

I think we will invent flying cars, so there won't be long traffic jams any more. We will also have different types of flying cars, some will fly from country to country and some will take us to visit other planets! So instead of going for a Sunday drive with my parents in the countryside, we'll go for a drive to the moon!

We'll also invent time-machines, so we will travel back and forward through time.

Hello, my name is Lisa, I'm 14 years old and I live in Newcastle, in the north of England. I think the future will bring lots of technological advances. I think we will all have our own personal robots at home so we won't have to do the washing up, the ironing and all the other household chores.

I think there will be special robots to go to the supermarket to buy all the groceries and transport them home, where of course they will also do all the cooking!

We will speak at least five different languages and we won't learn them, we'll be born that way! School exams will never be the same; we will have clones to send in to do our exams while we stay at home in bed!

I also think we will see great improvements in medicine. We will find a cure for cancer and for all other illnesses and we will all live 150 years!

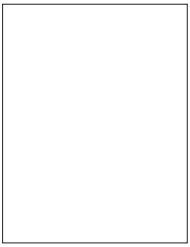
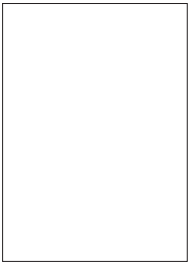
Hi, I'm Mike, I'm 14 years old and I live in Manchester, in the U.K. I think the world will look very different in the future.

I think that we will improve space travel and we will discover a lot of new planets. I also think that we will build many spaceships and maybe even low-cost companies like Ryanair will run a space shuttle service to the moon! I mean, if Richard Branson and Virgin Airlines can offer space travel for the wealthy and famous then why not Ryanair offering cheap flights to Mars?

Of course, with all these space travels, I think we will meet extra-terrestrials and they will come and live on our planet. Who knows, maybe in 50 years some of my neighbours will come from another planet.

I also think that we will go and live on other planets. When there are no more natural resources left on Earth, it will be necessary to look for them on other planets.

20. Fill in the following table:

People	Ideas for the future
	
	
	

21. Talking points.
What do you think? Are these things possible? Talk!

Flying cars *Time-machines* *To live on other planets*
Personal robots *Clones* *To live 150 years*
Cheap space travels to other planets *To meet aliens*

22. Activate pre-existing knowledge and write descriptions of the requirements of your future job in computing.

READ AND HAVE FUN

Here is one of hilarious jokes about technology and computers.

Job interview

Reaching the end of a job interview, the Human Resources Officer asks a young engineer fresh out of the Massachusetts Institute of Technology, «And what starting salary are you looking for?» The engineer replies, «In the region of $125,000 a year, depending on the benefits package.»

The interviewer inquires, «Well, what would you say to a package of five weeks vacation, 14 paid holidays, full medical and dental, company matching retirement fund to 50% of salary, and a company car leased every two years, say, a red Corvette?» The engineer sits up straight and says, «Wow! Are you kidding?» The interviewer replies, «Yeah, but you started it».

UNIT 19
THE INTERNET

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«Google can bring you back 100,000 answers. A librarian can bring you back the right one.»*

Neil Gaiman

2. Discuss these questions.

– What is a computer network?

– What are the benefits of connecting computers and peripherals in a network?

– What is the Internet?

– Who invented the Internet?

– What is the WWW?

– What is the difference between the Internet and World Wide Web?

– How do computers connect to each other over the Internet?

3. Watch the video «What is the INTERNET».

– Before you begin, say the terms you might hear.

– Watch the video and render what problems are explained. Say what you heard in your own words.

– Check whether suggested by you academic vocabulary was used by the presenter and provide their definitions.

– Write questions about the video.

What is the INTERNET

https://youtu.be/Dxcc6ycZ73M

READING AND SPEAKING

4. Read and memorize active vocabulary.

network – мережа;
conventional – звичайний, загальноприйнятий;
launch – починати, запускати, засновувати;
site – сайт, місце, місцеперебування;
disseminate – поширювати;
browser – браузер;
distribution – розподіл, поширення;
consortium – консорціум;
the Internet protocol suite – пакет протоколів мережі Інтернет;
World Wide Web (WWW) – «Всесвітня павутина», Мережа;
peer-to-peer – одноранговий;
ARPANET (Advanced Research Projects Agency Network) – мережа ARPANET;
backbone – магістраль (мережі);
networking technologies – мережеві технології;
merger – злиття;
incorporated – об'єднаний, залучений;
virtual – віртуальний, уявний;
media – засоби масової інформації;
website – веб-вузол, сайт;
blog – блог, веб-журнал;
web feed – інтернет-канал;

newsletter – бюлетень;
entertainment – розваги;
instant messaging – миттєві повідомлення;
social networking – соціальна мережа;
online shopping – мережні (Інтернет) магазини, он-лайн покупки;
retailer – роздрібний продавець;
artisan – ремісник;
governance – управління;
name space – простір імен;
protocol – протокол;
entrepreneur – підприємець;
customer – клієнт, замовник;
non-profit organization – невиробнича організація;
precursor network – мережа-попередник;
constituent network – складена мережа;
Domain Name System (DNS) – система доменних імен (DNS);
the Internet Corporation for Assigned Names and Numbers (ICANN) – некомерційна організація ICANN;
Transfer Control Protocol/Internetwork Protocol (TCP/IP) – протокол керування передаванням/ міжмережевий протокол, протокол TCP/IP; **http (hyper text transfer protocol)** – протокол прикладного рівня, використаний для передавання гіпертексту, протокол HTTP;
ftp (file transfer protocol) – протокол передавання файлів, протокол FTP; **pop (post office protocol)** – протокол поштового офісу, поштовий протокол, протокол POP;
nntp (newsgroups protocol) – протокол передавання мережних новин.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these wordcombinations.

1) electronic	a) interaction;
2) financial	b) network;
3) computer	c) resources;
4) networking	d) backbone;
5) personal	e) messaging;
6) information	f) industry;
7) commercial	g) services;

8) communications	h) media;
9) entertainment	i) mail;
10) instant	j) technologies.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

THE INTERNET

The Internet is the global system of interconnected computer networks that use the Internet protocol suite (TCP/IP) to link billions of devices worldwide. It is a network of networks that consists of millions of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies. The Internet carries an extensive range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web (WWW), electronic mail, telephony, and peer-to-peer networks for file sharing.

The origins of the Internet date back to research commissioned by the United States government in the 1960s to build robust, fault-tolerant communication via computer networks. Computers in the ‘60s were large and immobile and in order to make use of information stored in any one computer, one had to either travel to the site of the computer or have magnetic computer tapes sent through the conventional postal system.

Another catalyst in the formation of the Internet was the heating up of the Cold War. The Soviet Union’s launch of the Sputnik satellite spurred the U.S. Defense Department to consider ways information could still be disseminated even after a nuclear attack. This eventually led to the formation of the ARPANET (Advanced Research Projects Agency Network), the network that ultimately evolved into what we now know as the Internet. ARPANET was a great success but membership was limited to certain academic and research organizations who had contracts with the Defense Department. In response to this, other networks were created to provide information sharing.

January 1, 1983 is considered the official birthday of the Internet. Prior to this, the various computer networks did not have a standard way to communicate with each other. A new communications protocol was established called Transfer Control Protocol/Internetwork Protocol

(TCP/IP). This allowed different kinds of computers on different networks to «talk» to each other. ARPANET, which initially served as a backbone for interconnection of regional academic and military networks, and the Defense Data Network officially changed to the TCP/IP standard on January 1, 1983, hence the birth of the Internet. All networks could now be connected by a universal language. The US National Science Foundation (NSF) funded most of the early development of the Internet, but on April 30, 1995, the U.S. government released the Internet to commercial networks and service providers and shut down the old National Science Foundation backbone.

The funding of a new U.S. backbone by the National Science Foundation in the 1980s, as well as private funding for other commercial backbones, led to worldwide participation in the development of new networking technologies, and the merger of many networks. The linking of commercial networks and enterprises by the early 1990s marks the beginning of the transition to the modern Internet, and generated a sustained exponential growth as generations of institutional, personal, and mobile computers were connected to the network.

In March 1989, Tim Berners-Lee at the European Laboratory for Particle Physics (CERN) proposed a new set of protocols for Internet information distribution. They were: http (hyper text transfer protocol), ftp (file transfer protocol), pop (post office protocol), smtp (simple mail transfer protocol) and nntp (newsgroups protocol). These five protocols became known as the World Wide Web protocols and the W3 protocols and were soon adopted by the early Internet community. A consortium of organizations was formed to oversee Internet development and became known as the W3 Consortium. No organisation or individual owns the Internet.

Although the Internet has been widely used by academia since the 1980s, the commercialization incorporated its services and technologies into virtually every aspect of modern life. Internet use grew rapidly in the West from the mid-1990s and from the late 1990s in the developing world. In ten years from 1995, Internet use has grown 100-times to over one third of the world population when measured over one year.

Most traditional communications media, including telephony and television, are being reshaped or redefined by the Internet, giving birth to new services such as Internet telephony and Internet television. Newspaper, book, and other print publishing are adapting to website technology, or are reshaped into blogging and web feeds.

The entertainment industry was initially the fastest growing segment on the Web. The Internet has enabled and accelerated new forms of personal interactions through instant messaging, Internet forums, and social networking. Online shopping has grown exponentially both for major retailers and small artisans and traders. Business-to-business and financial services on the Internet affect supply chains across entire industries.

The Internet has no centralized governance in either technological implementation or policies for access and usage; each constituent network sets its own policies. Only the overreaching definitions of the two principal name spaces in the Internet, the Internet Protocol address space and the Domain Name System (DNS), are directed by a maintainer organization, the Internet Corporation for Assigned Names and Numbers (ICANN). The technical underpinning and standardization of the core protocols is an activity of the Internet Engineering Task Force (IETF), a non-profit organization of loosely affiliated international participants that anyone may associate with by contributing technical expertise.

7. Comment on the notions expressed in the text.

1) The Internet carries an extensive range of information resources and services.

2) The linking of commercial networks and enterprises by the early 1990s marks the beginning of the transition to the modern Internet.

3) The Internet has no centralized governance in either technological implementation or policies for access and usage.

8. Complete the following sentences.

1) The Internet is the global system of interconnected computer networks that ….

2) The Internet carries an extensive range of information resources and services, such as ….

3) The origins of the Internet date back to ….

4) The Internet started in the 1960s as a way for government researchers ….

5) Another catalyst in the formation of the Internet was ….

6) The ARPANET (Advanced Research Projects Agency Network), the network that ….

7) January 1, 1983 is considered ….

8) In March 1989, Tim Berners-Lee at the European Laboratory for Particle Physics (CERN) proposed a new set of ….

9) A consortium of organizations was formed to ….

10) Internet use grew rapidly in the West from ….

11) Newspaper, book, and other print publishing are adapting to ….

12) Online shopping has grown exponentially both for ….

13) The Internet has enabled and accelerated new forms of personal interactions through ….

14) Careers in information technology deal with ….

VIDEO

9. Follow this link: https://www.youtube.com/watch?v=-yqI6W8Ihes Watch the video «This Is the History of the Internet» presenting a narration about the Internet history facts.
Find out the following.

1) Why is the Internet important?

2) What are the Internet roots in pure fiction?

3) What future for the Internet did Mark Twain predict in 1898?

4) What idea did computer scientist JCR Licklider propose in 1962?

5) What today's Internet functions did JCR Licklider explain?

6) What was the first message from UCLA to Stanford?

7) When was the first email sent?

8) When was the world wide web created?

9) What was the first thing ever purchased on the net?

10) What question concerning the Internet arises now?

LANGUAGE DEVELOPMENT

10. Read Part 1 of the Internet FAQs and choose the correct answers.

1. The Internet was …

a. invented in the mid-90s. b. popular in the 1960s. c. probably created in the USA.

2. Which term describes any fast, high-bandwidth connection?

a. broadband b. dial-up connection c. Wi-Fi-connection

3. The power-line Internet provides broadband access through …

a. telephone lines. b. satellites. c. electrical power lines.

4. Which device converts computer data into a form that can be transmitted over phone lines?

a. ADSL b. a mobile phone c. a modem

5. The standard protocol that allows computers to communicate over the Internet is called …

a. an IP address. b. TCP/IP. c. HTTP.

6. The geographical region covered by one or several access points is called a

a. wireless access point b. hotspot c. wireless network device

Internet FAQs.

Did the Internet become popular quickly?

It took many years for the Internet to become popular around the world. It's only really since the mid-90s that the Internet has been a part of our daily lives.

How do you get online?

To get connected, you need a computer, the right connection software and a modem connected to the phone line. You also need an account with an Internet Service Provider (ISP), which acts as a gateway between your PC and the rest of the Net.

How fast are today's Internet connections?

Today, ISPs offer a broadband, high-speed connection. The most common types are cable – offered by local cable TV companies – and ADSL (Asymmetric Digital Subscriber Line), which works through phone lines. They are both faster than the traditional dial-up telephone connection. Broadband access is also offered by some electricity networks. This competing technology, known as power-line Internet, provides low-cost access via the power plug, but is still in development.

How much does broadband access cost?

It depends on which company you choose. Nowadays, some companies even offer free broadband.

Why do you need a modem?

A modem (modulator/demodulator) converts digital signals into analogue signals so that data can be transmitted across the phone or cable network.

What does TCP/IP mean?

The language used for data transfer on the Internet is known as TCP/IP (transmission control protocol/Internet protocol). This is like the Internet operating system. Every computer connected to the Net is identified by a unique IP address.

Are there other ways of accessing the Internet?

Other methods of Internet access include Wi-Fi, satellite, mobile phones and TV sets equipped with a modem. Wi-Fi-enabled laptops

or PDAs allow you to connect to the Net if you are near a wireless access point, in locations called hotspots (for example, on ships at sea). High-end mobile phones provide access through the phone network.

Email

Email lets you exchange messages with people all over the world. Optional attached files can include text, pictures and even audio and animation. A mailing list uses email to communicate messages to all its subscribers – that is, everyone that belongs to the list.

Which email program is the best?

Outlook Express is a popular program, but many users use web-based email accounts such as Hotmail.

The Web

The Web consists of billions of documents living on web servers that use the HTTP protocol. You navigate through the Web using a program called a web browser, which lets you search, view and print web pages.

How often are web pages updated?

It depends entirely on the page. Some are updated thousands of times a day.

Chat and Instant Messaging (IM)

Chat and Instant Messaging technologies allow you to have real-time conversations online, by typing messages at the keyboard.

FTP

FTP, or file transfer protocol, is used to transfer files over a TCP/IP network. Nowadays, this feature is built into Web browsers. You can download programs, games and music files from a remote computer to your hard drive.

Telnet

Telnet is a protocol and a program used to log onto remote computer systems. It enables you to enter commands that will be executed as if you were entering them directly on the remote server.

Newsgroups

Newsgroups are the public discussion areas which make up a system called *Usenet*. The contents are contributed by people who post articles or respond to articles, creating chains of related postings called message threads. You need a newsreader to subscribe to newsgroups and to read and post messages. The newsreader may be a stand-alone program or part of a web browser.

How many newsgroups are there?

There are approximately 30,000 active newsgroups.

Where can you find newsgroups?

Your newsreader may allow you to download the newsgroup addresses that your ISP has included on its news server. An alternative to using a newsreader is to visit web forums instead, which perform the same function but without the additional software.

11. Find words and phrases in the text with the following meanings.

1. a system used to distribute email to many different subscribers at once (in *Email* paragraph)
2. a program used for displaying web pages (in The Web paragraph)
3. to connect to a computer by typing your username and password (in *Telnet* paragraph)
4. a series of interrelated messages on a given topic (in *Newsgroups* paragraph)
5. a program for reading Usenet newsgroups (in *Newsgroups* paragraph)

12. Match the words on the left with the words on the right to make pairs of words that often go together. See the example.

1 access	a chip, wafer, valley
2 download	b an application, a network, an account
3 mobile	c online, offline, on holiday
4 go	d phone, telephony, broadband
5 silicon	e a file, an image, a demo version

13. Complete the sentences using pairs of words from the previous exercise. Make any changes that are necessary.

1. Everyone has_____, so payphones are becoming redundant.
2. Many Internet entrepreneurs from_____in California are now turning their attention to alternative forms of energy.
3. Before you buy the program, you can_____just to see how you like it.
4. With a mobile broadband connection, you can_____any time and anywhere.
5. Internet banking allows users to_____and check their balances.
6. How many transistors can you fit onto a_____?

LISTENING

14. Listen to a conversation between a customer buying a PC and a sales assistant. Why do you think the sales assistant has to explain so much about the Internet?

https://www.youtube.com/watch?v=4uk1qrCPlts (min: 37:25)

15. Listen again and complete the customer's notes.

To connect to the Internet from home, I need:
(1) a_____and (2) a_____. Also need an account with an (3)_____(a company that offers connection for a monthly fee).
If you want to connect lots of computers without using cables, you can use a (4)_____router.
Wi-Fi uses (5)_____waves to send data over medium-range distances.
Things you can do on the Internet: (6) _____
'Web' or 'Internet'? The Web: huge collection of (7) _____ stored on computers all over the world. The Internet: the network which connects all the computers.

16. Talking points.
Discuss the dangers of the Internet.

– Do you think the internet is dangerous? How/in what way?
– Do you agree with the following statements? Why/why not?
– «It's reprogramming our relationships, our emotions, and our sensitivity,»
– «It destroys our patience». «
– It turns kids into «click vegetables.»

17. Read the article and answer the questions below.
I'm still here: back online after a year without the internet

http://www.theverge.com/2013/5/1/4279674/im-still-here-back-online-after-a-year-without-the-internet

I was wrong.

One year ago I left the internet. I thought it was making me unproductive. I thought it lacked meaning. I thought it was «corrupting my soul.»

It's a been a year now since I «surfed the web» or «checked my email» or «liked» anything with a figurative rather than literal thumbs up. I've managed to stay disconnected, just like I planned. I'm internet free.

And now I'm supposed to tell you how it solved all my problems. I'm supposed to be enlightened. I'm supposed to be more «real,» now. More perfect.

But instead it's 8PM and I just woke up. I slept all day, woke with eight voicemails on my phone from friends and coworkers. I went to my coffee shop to consume dinner, the Knicks game, my two newspapers, and a copy of The New Yorker. And now I'm watching Toy Story while I glance occasionally at the blinking cursor in this text document, willing it to write itself, willing it to generate the epiphanies my life has failed to produce.

I didn't want to meet this Paul at the tail end of my yearlong journey.

In early 2012 I was 26 years old and burnt out. I wanted a break from modern life – the hamster wheel of an email inbox, the constant flood of WWW information which drowned out my sanity. I wanted to escape.

I thought the internet might be an unnatural state for us humans, or at least for me. Maybe I was too ADD to handle it, or too impulsive to restrain my usage. I'd used the internet constantly since I was twelve, and as my livelihood since I was fourteen. I'd gone from paperboy, to web designer, to technology writer in under a decade. I didn't know myself apart from a sense of ubiquitous connection and endless information. I wondered what else there was to life. «Real life,» perhaps, was waiting for me on the other side of the web browser.

My plan was to quit my job, move home with my parents, read books, write books, and wallow in my spare time. In one glorious gesture I'd outdo all quarter-life crises to come before me. I'd find the real Paul, far away from all the noise, and become a better me.

MY GOAL WOULD BE TO DISCOVER WHAT THE INTERNET HAD DONE TO ME OVER THE YEARS

But for some reason, The Verge wanted to pay me to leave the internet. I could stay in New York and share my findings with the world, beam missives about my internet-free life to the citizens of the internet I'd left behind, sprinkle wisdom on them from my high tower.

My goal, as a technology writer, would be to discover what the internet had done to me over the years. To understand the internet by studying it «at a distance.» I wouldn't just become a better human,

I would help us all to become better humans. Once we understood the ways in which the internet was corrupting us, we could finally fight back.

At 11:59PM on April 30th, 2012, I unplugged my Ethernet cable, shut off my Wi-Fi, and swapped my smartphone for a dumb one. It felt really good. I felt free.

A couple weeks later, I found myself among 60,000 ultra-Orthodox Jews, pouring into New York's Citi Field to learn from the world's most respected rabbis about the dangers of the internet. Naturally. Outside the stadium, I was spotted by a man brandishing one of my own articles about leaving the internet. He was ecstatic to meet me. I had chosen to avoid the internet for many of the same reasons his religion expressed caution about the modern world.

«It's reprogramming our relationships, our emotions, and our sensitivity,» said one of the rabbis at the rally. It destroys our patience. It turns kids into «click vegetables.»

My new friend outside the stadium encouraged me to make the most of my year, to «stop and smell the flowers.»

This was going to be amazing.

I dreamed a dream

And everything started out great, let me tell you. I did stop and smell the flowers. My life was full of serendipitous events: real life meetings, frisbee, bike rides, and Greek literature. With no clear idea how I did it, I wrote half my novel, and turned in an essay nearly every week to The Verge. In one of the early months my boss expressed slight frustration athow much I was writing, which has never happened before and never happened since.

I lost 15 pounds without really trying. I bought some new clothes. People kept telling me how good I looked, how happy I seemed. In one session, my therapist literally patted himself on the back.

I was a little bored, a little lonely, but I found it a wonderful change of pace. I wrote in August, «It's the boredom and lack of stimulation that drives me to do things I really care about, like writing and spending time with others.» I was pretty sure I had it all figured out, and told everyone as much.

As my head uncluttered, my attention span expanded. In my first month or two, 10 pages of *The Odyssey* was a slog. Now I can read 100 pages in a sitting, or, if the prose is easy and I'm really enthralled, a few hundred.

I learned to appreciate an idea that can't be summed up in a blog post, but instead needs a novel-length exposition. By pulling away from

the echo chamber of internet culture, I found my ideas branching out in new directions. I felt different, and a little eccentric, and I liked it.

Without the retreat of a smartphone, I was forced to come out of my shell in difficult social situations. Without constant distraction, I found I was more aware of others in the moment. I couldn't have all my interactions on Twitter anymore; I had to find them in real life. My sister, who has dealt with the frustration of trying to talk to me while I'm half listening, half computing for her entire life, loves the way I talk to her now. She says I'm less detached emotionally, more concerned with her well-being – less of a jerk, basically.

Additionally, and I don't know what this has to do with anything, but I cried during *Les Miserables*.

It seemed then, in those first few months, that my hypothesis was right. The internet had held me back from my true self, the better Paul. I had pulled the plug and found the light.

18. Circle the right answer.

His experience …

a) gave him what he had expected
b) turned out to be different from what he had expected
c) was totally uninteresting
d) was consistently amazing

At the beginning…

a) He was really bored
b) He was really busy
c) He gained weight
d) His therapist congratulated him on his life change

Without his smarphone

a) He found it surprisingly easy to interact with others
b) He became more sensitive
c) His sister's consideration for him remained the same
d) He found it difficult to interact socially

One of the things he noticed was that…

a) he felt he could never write a novel
b) he missed writing his blog
c) he was able to read much faster than before
d) his attention was now limited for lack of stimulation

19. Activate pre-existing knowledge and write a paragraph describing actions to prevent computer infection.

UNIT 20

THE INTERNET SOFTWARE

LEAD-IN

1. **Read one of famous quotes by eminent writers and politicians about technology and computers and ponder on the depth of its thought:** *«If television's a babysitter, the Internet is a drunk librarian who won't shut up.»*
Dorothy Gambrell

2. Discuss these questions.

– What acts as an essential factor today when we talk about basic necessities of living a technically advanced life?

– Which web application developed are there in the market?

3. Watch the video «The internet software».

– While watching the video, write down any new vocabulary you hear.

– Check the definition and slowly build up your own personalised vocabulary booklet.

– Render what you remember about the video. Say what you heard in your own words.

The Internet Software

https://youtu.be/a_2IDvTLz7I

READING AND SPEAKING

4. Read and memorize active vocabulary.

network – мережа;
IRC (Internet Relay Chat) – система діалогового спілкування мережею Інтернет, ретрансляція розмов у мережі Інтернет;
dial up – з'єднатися;
log-in name – логін, реєстраційне ім'я;
browser – браузер;
Hypertext Markup Language (HTML) – мова розмітки гіпертексту (HTML);
videoconferencing – відеоконференція, відеоконференцзв'язок;
collaborate – співпрацювати;
employee – працівник, співробітник;
authorized – авторизований, уповноважений;
remote – віддалений;
enable – давати змогу або право (щось зробити);
contribute – робити вклад (у науку), сприяти;
respond – відповідати; відгукуватися, реагувати;
miscellaneous – (з)мішаний; різноманітний;
recreation – розвага, відпочинок;
alternative – альтернатива, вибір;
website – веб-вузол, сайт;
utility – утиліта, сервісна програма;
TCP/IP (transmission control protocol/Internet protocol) – протокол керування передаванням, протокол TCP;
PPP (point to point protocol) – протокол каналу зв'язку з безпосереднім з'єднанням, протокол PPP;
set up an account with an ISP – створити обліковий запис з провайдером;
navigate through the Web – переміщатися об'єктами Мережі.

5. Match up a word on the left with a word on the right to make a common word partnership. Make up some sentences of your own using these wordcombinations.

1) web	a) account;
2) transmit	b) messages;
3) exchange	c) page;
4) set up	d) session;
5) online	e) file;

6) electronic	f) password;
7) chat	g) programs;
8) run	h) provider;
9) edit	i) magazines;
10) service	j) shopping.

6. Look at the title of the text. What do you think the text will include? Reading the text, find answers in it, discuss whether you were right. Translate the text into Ukrainian.

THE INTERNET SOFTWARE

The Internet is a network of networks. These networks can be LAN, MAN or WAN. To access the Internet we need Internet software. The Internet can serve the user with billions of web pages created by people and companies from around the world to locate information and entertainment. It is also full of numerous services that help make life more convenient.

The language used for data transfer on the Internet is known as TCP/IP (transmission control protocol/Internet protocol). This is like the Internet operating system. The first program you need is a PPP (point to point protocol) driver. This piece of software allows the TCP/IP system to work with your modem; it dials up your Internet service provider (ISP), transmits your password and log-in name and allows Internet programs to operate.

Email is your personal connection to the Internet. It allows you to exchange messages with people all over the world. It can include text, pictures, and even audio and animation. When you set up an account with an ISP, you are given a unique address and anyone can send you e-mail. The mail you receive is stored on the server of your ISP until you next connect and download it to your hard disk.

Web browsers. The Web is a hypertext-based system where you can find news, pictures, games, online shopping, virtual museums, and electronic magazines – any topic you can imagine. You navigate through the Web using a program called a 'browser', which allows you to search and print Web pages. You can also click on keywords or buttons that take you to other destinations on the net. This is possible because browsers understand hypertext markup language (HTML), a set of commands that indicate how a Web page is formatted and displayed.

IRC, audio and video chatting. IRC – Internet relay chat – is a system for real time (usually typed) conversation. It's easy to use. To start

a chat session, you run an IRC program, which connects you to an IRC server – a computer dedicated to IRC. Then you join a channel, which connects you to a single chat area. Next you type a message and the other participants can see it. Internet telephone and video chatting are based on IRC protocols. Videoconferencing programs enable users to talk to and see each other, and collaborate. They are used in intranets – company networks that use Internet software but make their Web site accessible only to employees and authorized users.

FTP and Telnet. With FTP software you can copy programs, games, images and sounds from the hard disk of a remote computer to your hard disk. Today this utility is built into Web browsers. A Telnet program is used to log directly into remote computer systems. This enables you to run programs kept on them and edit files directly.

Newsgroups. Newsgroups are the public discussion areas which make up a system called 'Usenet'. The contents of the newsgroups are contributed by people who send articles (messages) or respond to articles. They are classified into categories: comp (computers), misc (miscellaneous), news (news), rec (recreation), soc (society), sci (science), talk and alt (alternative).

7. Comment on the notions expressed in the text.

1) The Internet can serve the user with billions of web pages created by people and companies from around the world to locate information and entertainment.

2) E-mail is your personal connection to the Internet.

3) Videoconferencing programs enable users to talk to and see each other, and collaborate.

8. Which Internet utility (1 to 7) would you use to do each of these tasks (a to g)?

1) Web browser	a) transfer files from the Internet to your hard disk;
2) Newsreader	b) have a live conversation (usually typed) on the Internet;
3) IRC/chat program	c) connect to a remote computer by entering certain instructions and run programs on it;
4) FTP software	d) take part in public discussion areas, called newsgroups;
5) Videoconferencing	e) fetch and view Web pages on the Internet;

6) Telnet	f) participate in live conversations, using text, audio and video;
7) e-mail	g) send a message to another person via the Internet.

VIDEO

9. Follow this link: https://www.youtube.com/watch?v=A4fEVgILGos

Watch the video «The Future of Internet Infrastructure» and answer the questions.

1) What is the amount of bandwidth we consume nowadays?
2) What data storage capacity is projected for total worldwide traffic in 2021?
3) What are service providers doing to keep up with the increasing demand for data and high-speed connections?
4) Why is Google planning to use wireless alternatives?
5) What other advancements will we see?
6) Why is Virtual Reality incredibly data intensive?
7) What are the advantages of the Internet of Things?
8) What other options are expected in the future?
9) What will the explosion of data-producing devices lead to?
10) What environmental issues are mentioned in the video?
11) What will artificial intelligence become in the near future?
12) Which technology do you think will have the biggest impact?

10. Read the text and tell about simple and sophisticated techniques used to prevent computer crimes. Give the definition of the concept of Computer Security.

What is Computer Security?

Computer Security is a number of techniques developed to protect single computers and network-linked computer systems from accidental or intentional harm. The harm can include destruction of computer hardware and software, physical loss of data, deception of computer users and so on.

A variety of simple techniques can prevent computer crime. For example, any user can prevent access to confidential information. They can destroy printed information, protect computer screens from observation, keep printed information and computers in locked cabinets, and clear desktops of sensitive documents. However,

there are some more sophisticated methods to prevent computer crimes. We would like to describe some of them.

One technique to protect confidentiality is encryption. Information can be scrambled and unscrambled using mathematical equations and a secret code called a key. Two keys are usually employed, one to encode and the other to decode the information. The key that encodes the data, called the private key, is possessed by only the sender. The key that decodes the data, called the public key, may be possessed by several receivers. The keys are modified periodically, further hampering unauthorized access and making the encrypted information difficult to decode or forge.

Another technique to prevent computer crime is to limit access of computer data files to approved users. Access-control software verifies computer users and limits their privileges to view and alter files. Records can be made of the files accessed, thereby making users accountable for their actions. Military organizations give access rights to classified, confidential, secret, or top secret information according to the corresponding security clearance level of the user.

Passwords are confidential sequences of characters that give approved users access to computers. To be effective, passwords must be difficult to guess. Effective passwords contain a mixture of characters and symbols that are not real words. To thwart imposters, computer systems usually limit the number of attempts to enter a correct password.

Tokens are tamper-resistant plastic cards with microprocessor chips that contain a stored password that automatically and frequently changes. When a computer is accessed using a token, the computer reads the token's password, as well as another password entered by the user, and matches these two to an identical token password generated by the computer and the user's password, which is stored on a confidential list. Sometimes passwords and tokens may be reinforced by biometrics, identification methods that use unique personal characteristics, such as fingerprints, retinal patterns, skin oils, deoxyribonucleic acid (DNA), voice variations, and keyboard-typing rhythms.

Computer networks, multiple computers linked together, are particularly vulnerable to computer crimes. Information on networks can be protected by a firewall, a computer placed between the networked computers and the network. The firewall prevents unauthorized users from gaining access to the computers on a network, and it ensures that information received from an outside source does not contain computer

viruses, self-replicating computer programs that interfere with a computer's functions.

We use computers for everything from banking and investing to shopping and communicating with others through e-mail or chat programs. Although you may not consider your communications «top secret,» you probably do not want strangers reading your e-mail, using your computer to attack other systems, sending forged e-mail from your computer, or examining personal information stored on your computer (such as financial statements).

11. Read the introduction to an e-mail and answer the questions.

1. Who is this e-mail from (i.e. an employee, IT specialist, customer etc)?
2. Who is the e-mail to?
3. What is the basic problem being discussed?
4. What will the rest of the e-mail be about?
5. What kind of ideas might be in the rest of the e-mail?

From: Rupert Hills-Jones
To: All employees
Subject: Data Security
Dear All,
Unfortunately there have been several instances recently of data falling into the wrong hands. I have been a victim of ID theft and we have lost a few company laptops and memory sticks containing sensitive trading information. The following rules around data and data security are mC11datory and failure to abide by these will result in disciplinary action up to and including dismissal. I am sorry for the stern tone but this is a very serious issue for us all.

12. Read the rest of the e-mail from Rupert Wilson, CIO of London Investments. Some sentences have been removed from the e-mail. Read the text and complete the gaps 1–6 with the sentences a-f below.

a) Ideally this should contain both letters and numbers.

b) Only company-provided and approved software may be used.

c) At the end of each day, ensure that your desks are clear and all documentation or storage devices are in locked drawers.

d) Do not leave them where they can be seen on the back seat of a car.

e) IT will be running a webcast on how to do this next Tuesday 25th.

f) Any documentation found lying around after the trading day will be destroyed. You have been warned.

Clear Your Desk. With immediate effect we will be running a Clear Desk Policy in the office. 1. …
Shred. All unwanted printouts, photocopies, notes etc. must be put into the shredders that have been installed in each office 2. … .
Use Passwords. All systems must be accessed using a password. 3. … . This password is secret to you and should not be shared with any other individuals.
Change Passwords. All passwords must now be changed on a monthly basis. If you think that your password has been compromised, call the IT Helpdesk immediately.
Don't Download. All laptops are to be scanned on a monthly basis by IT to check for spyware or malware. Under no circumstances should any programs be downloaded from the internet onto company laptops. 4. … .
E-mails. Do not open email attachments unless you know the originator of the mail personally and you are expecting an attachment of that type and name.
Keep Secure. All laptops taken out of the office either to clients offices or to work from home must be kept secure at all times. 5. … .
Memory Sticks. All memory sticks are now numbered. The IT Department will keep a list of memory sticks and who is responsible for them.
Encrypt. All data stored on memory sticks must be encrypted. 6. … .
And on a personal note if anybody sees my wallet, could you please pop it into my office.
Regards, Rupert.

13. Match the verbs in A with the words in B to make expressions from the e-mail.

A	B
1 be	a) an e-mail attachment
2 change	b) a document
3 download	c) a program
4 open	d) a victim
5 run	e) a webcast
6 scan	f) a laptop
7 shred	g) a password.

14. Complete sentences 1–7 with the expressions from the previous exercise. You may need to make changes to the verbs.

1. Why can it be dangerous to … if you don't know who sent it?
2. Why is it important to … like a bank statement that contains personal information, and not just throw it away?
3. How often should you … or a desktop for spyware and malware?
4. Why can it be harmful to … from the internet and run it on your computer?
5. Why is it a good idea to … regularly even if there's no evidence it has been compromised?
6. What are the advantages of … as opposed to having training seminars?
7. Have you ever … of ID fraud?

15. Read the text «Security and privacy on the Internet» and answer these questions.

1. Why is security so important on the Internet?
2. What security features are offered by Mozilla Firefox?
3. What security protocol is used by banks to make online transactions secure?
4. How can we protect our e-mail and keep it private?
5. What methods are used by companies to make internal networks secure?
6. In what ways can a virus enter a computer system?
7. How does a worm spread itself?

Security and privacy on the Internet

There are many benefits from an open system like the Internet, but one of the risks is that we are often exposed to hackers, who break into computer systems just for fun, to steal information, or to spread viruses (see note below). So how do we go about making our on-line transactions secure?

Security is crucial when you send confidential information on line. Consider, for example, the process of buying a book on the Web. You have to type your credit card number into an order form which passes from computer to computer on its way to the on-line bookstore. If one of the intermediary computers is infiltrated by hackers, your data can be copied. To avoid risks, you should set all security alerts to high on your web browser. Mozilla Firefox displays a lock when the website is secure

and allows you to disable or delete cookies – small files placed on your hard drive by web servers so that they can recognize your PC when you return to their site. If you use on-line banking services, make sure they use digital certificates– files that are like digital identification cards and that identify users and web servers. Also be sure to use a browser that is compliant with SSL (Secure Sockets Layer), a protocol which provides secure transactions.

Similarly, as your e-mail travels across the Net, it is copied temporarily onto many computers in between. This means that it can be read by people who illegally enter computer systems. The only way to protect a message is to put it in a sort of virtual envelope – that is, to encode it with some form of encryption. A system designed to send email privately is Pretty Good Privacy, a freeware program written by Phil Zimmerman.

Private networks can be attacked by intruders who attempt to obtain information such as Social Security numbers, bank accounts or research and business reports. To protect crucial data, companies hire security consultants who analyze the risks and provide solutions. The most common methods of protection are passwords for access control, firewalls, and encryption and decryption systems. Encryption changes data into a secret code so that only someone with a key can read it. Decryption converts encrypted data back into its original form.

Malware (malicious software) are programs designed to infiltrate or damage your computer, for example viruses, worms, Trojans and spyware. A virus can enter a PC via a disc drive – if you insert an infected disc – or via the Internet. A worm is a self-copying program that spreads through e-mail attachments; it replicates itself and sends a copy to everyone in an address book. A Trojan horse is disguised as a useful program; it may affect data security.

Spyware collects information from your PC without your consent. Most spyware and adware (software that allows pop-ups – that is, advertisements that suddenly appear on your screen) is included with ‘free’ downloads.

If you want to protect your PC, don’t open e-mail attachments from strangers and take care when downloading files from the Web. Remember to update your anti-virus software as often as possible, since new viruses are being created all the time. NOTE: originally, all computer enthusiasts and skilled programmers were known as hackers, but during the 1990s, the term hacker became synonymous with cracker – a person

who uses technology for criminal aims. Nowadays, people often use the word hacker to mean both things. In the computer industry, hackers are known as white hats and crackers are called black hats or dark-side hackers.

LISTENING

16. Listen to an interview with Diana Wilson, a member of the Internet Safety Foundation.

https://www.youtube.com/watch?v=4uk1qrCPlts (min: 46:23)

Which answers (a or b) best describe what she says?

1. Parents should make children aware of

a) the benefits and risks of the Internet.

2. A web filter program can be used to

a) prevent access to sites with inappropriate content.	b) rate web content with labels (similar to the way movies are rated).

3. If kids spend too much time on line or suffer from internet addiction, parents should

a) stop them using the Internet.	b) look for help from specialists.

17. Listen again and complete the interviewer's notes.

Risks	*Solutions*
Manipulation of children	There are websites (4) … at children.
Invasions of (1) …	Internet (5) … programs let parents block objectionable websites.
Distribution of indecent or (2) … material	Websites should (6) … their content with a label, from child-friendly to over 18 only.
Violence and racist (3) …	

18. Read the text and tell what the most common types of internet crimes are.

The Internet provides a wide variety of opportunities for communication and development, but unfortunately it also has its dark side. Crackers, or black-hat hackers, are computer criminals who use technology to perform a variety of crimes: virus propagation, fraud, intellectual property theft, etc.

Internet-based crimes include scam, e-mail fraud to obtain money or valuables, and phishing, bank fraud, to get banking information such as passwords of Internet bank accounts or credit card details. Both crimes use e-mails or websites that look like those of real organizations.

Crackers are a new type of criminals. Due to its anonymity, the Internet also provides the right environment for on-line harassment or abuse, mainly in chat rooms or newsgroups. Piracy, the illegal copying and distribution of copyrighted software, information, music and video files, is widespread. But by far the most common type of crime involves malware.

Malware (malicious software) is software created to damage or alter the computer data or its operations. These are the main types.

– *Viruses* are programs that spread by attaching themselves to executable files or documents. When the infected program is run, the virus propagates to other files or programs on the computer. Some viruses are designed to work at a particular time or on a specific date, e.g. on Friday l3th. An e-mail virus spreads by sending a copy of itself to everyone in an e-mail address book.

– *Worms* are self-copying programs that have the capacity to move from one computer to another without human help, by exploiting security flaws in computer networks. Worms are self-contained and don't need to be attached to a document or program the way viruses do.

– *Trojan* horses are malicious programs disguised as innocent-looking files or embedded within legitimate software. Once they are activated, they may affect the computer in a variety of ways: some are just annoying, others are more ominous, creating a backdoor to the computer which can be used to collect stored data. They don't copy themselves or reproduce by infecting other files.

– *Spyware*, software designed to collect information from computers for commercial or criminal purposes, is another example of malicious software. It usually comes hidden in fake freeware or shareware applications downloadable from the Internet.

– Don’t open e-mail attachments from unknown people; always take note of the file extension.

– Run and update antivirus programs, e.g. virus scanners.

– Install a firewall, a program designed to prevent spyware from gaining access to the internal network.

– Make backup copies of your files regularly.

– Don’t accept files from high-risk sources.

– Use a digital certificate, an electronic way of proving your identity, when you are doing business on the Internet. Avoid giving credit card numbers.

– Don’t believe everything you read on the Net. Have a suspicious attitude toward its contents.

19. Identify the Internet crimes sentences (1-6) refer to. Then match them with the advice below (a-f).

1. Crackers try to find a way to copy the latest game or computer program.

2. A study has revealed that half a million people will automatically open an e-mail they believe to be from their bank and happily send off all their security details.

3. This software’s danger is hidden behind an attractive appearance. That’s why it is often wrapped in attractive packages promising photos of celebrities like Anna Kournikova or Jennifer Lopez.

4. There is a particular danger in Internet commerce and e-mails. Many people believe they have been offered a special gift only to find out later they have been deceived.

5. ‘Nimda’ spreads by sending infected e-mails and is also able to infect websites, so when a user visits a compromised website, the browser can infect the computer. 6. Every day, millions of children spend time in Internet chat rooms talking to strangers. But what many of them don’t realize is that some of the surfers chatting with them may be sexual predators.

a) People shouldn’t buy cracked software or download music illegally from the Internet;

b) Be suspicious of wonderful offers. Don’t buy if you aren’t sure;

c) It’s dangerous to give personal information to people you contact in chat rooms; d) Don’t open attachments from people you don’t know even if the subject looks attractive;

e) Scan your e-mail and be careful about which websites you visit;
f) Check with your bank before sending information.

20. Answer the following questions in written.

1. What do you do to prevent computer infections?
2. Do you keep your virus protection updated?
3. The Internet has lots of websites where you can get free advice and software. What should you do to improve your computer security?

21. Choose the best words to go into each of the spaces.

1. A person who illegally accesses somebody else's computer over the internet is called a … .

a) pirate	b) hack	c) hacker

2. A website which (in theory) cannot be accessed by a hacker is …

a) strong	b) secure	c) clean

3. A website which can only be viewed by authorized people has … access.

a) reduced	b) small	c) restricted

4. Unwanted advertising e-mails are popularly known as … .

a) meatloaf	b) spam	c) sausages

5. Software which blocks attempts by others to access your computer over the internet is called a … .

a) firewall	b) fire blanket	c) fire engine

6. It's essential to … your anti-virus protection regularly.

a) up-to-date	b) date	c) update

7. Anti-virus software can … your computer for viruses.

a) detect	b) review	c) scan

8. Anti-virus software can also … viruses on removable media, such as floppy disks.

a) detect	b) control	c) see

9. When your anti-virus software subscription …

a) ends	b) stops	c) expires

10. … it's a good idea to … it immediately.

a) renew	b) renovate	c) replace.

22. Reading comprehension.
How to avoid catching a virus. What should we do?

Stay calm. A computer virus isn't dangerous until the infected email is opened. Delete any mail you think is infected and empty your deleted items folder. Enable a firewall (защитная система). It's an application that prevents computer viruses from infecting your computer. Update your operating system regularly. Use spam protection. Many computer viruses get into your computer as e-mail attachments. Mark e-mails that look like spam as spam so that you won't have to get them in your main inbox and accidentally open them. For further protection, use anti-spam software. Avoid installing suspicious software. Some computer software or programs are hotspots for computer viruses, or they contain viruses themselves. If you are not sure about the publisher of the program, then don't install it.

What should not we do? – Don't open any attachment you are not sure about, even if you have a virus scanner. Don't forward any attachment to a friend without being sure it is safe.

23. Activate pre-existing knowledge and make a list of possible applications of Internet Software.

REFERENCES

https://learnenglishteens.britishcouncil.org/skills/reading/elementary-a2-reading/are-you-good-digital-citizen

https://en.islcollective.com/english-esl-worksheets/material-type/one-one-activities/history-computer/118889

https://www.liveworksheets.com/worksheets/en/English_as_a_Second_Language_(ESL)/Reading_comprehension/Reading_-The_Wonderful_world_of_computers-_fb170234vx

https://en.islcollective.com/english-esl-worksheets/vocabulary/computers-and-technology/look-back-life-steve-jobs/1127

https://en.islcollective.com/english-esl-worksheets/vocabulary/computers-and-technology

https://en.islcollective.com/english-esl-worksheets/vocabulary/technology?page=3

https://www.myenglishpages.com/english/reading-jokes-technology.php

https://www.myenglishpages.com/english/reading-quotes-technology.php

https://www.easypacelearning.com/all-lessons/english-level-2/1278-computer-hardware-parts-english-lesson

https://studfile.net/preview/5157722/page:7/

https://studopedia.com.ua/1_243608_Word-processing.html

https://studfile.net/preview/2687665/

https://studopedia.org/9-194895.html

https://www.youtube.com/watch?v=4uk1qrCPlts

Infotech_english_for_computer_users_Stud.pdf

KH%2021%20professional-english-in-use-ictpdf.pdfThe_digital_age_.pdf

Сковронська І. Ю., Кузьо Л. І., Дяк Т. П.

С 44 English for Information Technology and Computing : інтерактивний навчальний посібник. Львів : Львівський державний університет внутрішніх справ, 2022. 228 с.

Основа інтерактивного навчального посібника – комплексний підхід до вивчення англійській мові у закладах вищої освіти з урахуванням сучасних вимог. Інтерактивні методи навчання допомагають інтенсифікувати процес розуміння, засвоєння й творчого застосування знань під час вирішення практичних завдань. Мета посібника – забезпечити розвиток і вдосконалення вмінь і навичок усного та писемного мовлення, читання та перекладу, роботи з фаховою літературою і лексикою у сфері комп'ютерних наук та інформаційних технологій з використанням інтерактивних технологій.

Для здобувачів вищої освіти першого бакалаврського рівня галузі знань 12 «Інформаційні технології», спеціальності 126 «Інформаційні системи і технології» у рамках освітньої програми «Правоохоронні інформаційні системи», а також для всіх, хто прагне вдосконалити власні навички комунікації у цій сфері.

The interactive textbook is based on the comprehensive approach to teaching English in higher education institutions, taking into account modern requirements. Interactive teaching methods help to intensify the process of understanding, mastering and creative application of knowledge while fulfilling practical tasks. The aim is to develop and improve the skills of oral and written speech, reading and translation, work with professional literature and vocabulary in the field of computer science and information technology using interactive technologies.

The textbook is designed for applicants of higher education of the first «bachelor» level of knowledge 12 «Information Technology», specialty 126 «Information Systems and Technologies» of the educational program «Law Enforcement Information Systems», as well as for all who seek to improve their communication skills in this area.

Видано в авторській редакції

УДК 811.111'276.6:004](075.8-028.27)

НАВЧАЛЬНЕ ВИДАННЯ

Сковронська Ірина Юріївна,
кандидат філологічних наук, доцент
Кузьо Любов Іванівна,
кандидат психологічних наук, доцент
Дяк Т_____П_____,
кандидат педагогічних наук, доцент

English for Information Technology and Computing

Інтерактивний навчальний посібник

Макетування *Галина Шушняк*
Друк *Іван Хоминець*

Підписано до друку 21.04.2022 р.
Формат 60×84/16. Папір офсетний. Умовн. друк. арк. 13,25.
Тираж 100 прим. Зам №__-22.

Львівський державний університет внутрішніх справ
Україна, 79007, м. Львів, вул. Городоцька, 26.

Свідоцтво про внесення суб'єкта видавничої справи до державного реєстру видавців, виготівників і розповсюджувачів видавничої продукції
ДК № 2541 від 26 червня 2006 р.