

**Учреждение образования**  
**«МИНСКИЙ ИННОВАЦИОННЫЙ УНИВЕРСИТЕТ»**

Факультет коммуникаций и права  
Кафедра юридической психологии

УТВЕРЖДЕНО  
Решение Научно-методического совета  
\_\_\_\_\_ 20\_\_ (протокол № \_\_ )

Регистрационный № ЭУМК/\_\_\_\_\_

**ИНОСТРАННЫЙ ЯЗЫК**

**ЭЛЕКТРОННЫЙ УЧЕБНО-МЕТОДИЧЕСКИЙ КОМПЛЕКС**

Специальность 1-40 01 01 Программное обеспечение информационных технологий

Специальность 1-40 01 02 Информационные системы и технологии

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СОГЛАСОВАНО

Заведующий кафедрой

\_\_\_\_\_ / Комкова Е.И. /

(подпись)

(инициалы, фамилия)

\_\_\_\_\_ 20\_\_

СОГЛАСОВАНО

Декан факультета

\_\_\_\_\_ / Потоцкий А.А. /

(подпись)

(инициалы, фамилия)

\_\_\_\_\_ 20\_\_

## **ОГЛАВЛЕНИЕ**

Пояснительная записка

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Содержание итогового экзамена

Unit 1 “DEVELOPMENT OF COMPUTERS”

Unit 2 “COMPUTER FUNCTIONS”

Unit 3 “COMPUTER TOOLS”

Unit 4 “COMPUTER VIRUSES”

Unit 5 “COMPUTER CRIME”

Unit 6 “COMPUTER NETWORKS”

Unit 7 “THE INTERNET”

Управляемая самостоятельная работа студентов

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Литература

## **Пояснительная записка**

Данный ЭУМК предназначен для студентов 1 курса дневной и заочной формы обучения специальностей “Информационные системы и технологии” и “Программное обеспечение информационных технологий”.

ЭУМК состоит из 7 разделов, в которые вошли темы по истории создания компьютера, программном и аппаратном обеспечении ПК, о видах и способах их использования, компьютерных сетях, компьютерных вирусах и преступлениях. При этом в рамках каждого раздела в целях структурирования материала, оптимизации проведения занятий, формирования интегрированных знаний и умений применяется следующая структура: активный словарь по теме, тексты и упражнения на закрепление использованной лексики, задания на понимание, вопросы для обобщающего обсуждения темы.

В структуру ЭУМК включены: учебная программа по специальности, задания, которые могут служить материалом для написания УСРС (управляемых самостоятельных работ студентов) и тексты для дополнительного чтения по специальности. В данном ЭУМК учитываются интересы студентов, в соответствии с которыми обозначены проблемы для обсуждения и подобран лексический материал. Тексты заимствованы из зарубежных и отечественных источников, и их тематика определена программой подготовки специалистов технического профиля.

Объем материала представляется достаточным для достижения главной цели: овладения умениями и навыками понимания текстового материала, обсуждения различных аспектов и общения в рамках заданных тем, повышения общелексического уровня владения иностранным языком.

## УЧЕБНО-МЕТОДИЧЕСКАЯ КАРТА

### I семестр

Номер раздела темы, занятия	Название раздела, темы занятия; перечень изучаемых вопросов		Количество часов		Лите ратур а	Мат.обеспе чение занятий	Формы контроля знаний	
			ПЗ	УСР				
	Устная тема	Грамматика						
2.	MODULE 2 Term I - 24h			24	6			
2.1.	UNIT 1. DEVELOPMENT OF COMPUTERS.			12		[3] [6]	audiotape	
2.1.1.	On the History of Computer Development	English Tenses Active The Simple Forms	6		[3] [5]			
2.1.2.	Personal Computer	The Continuous Forms	4		[3] [5]	Vocabulary work		
2.1.3.	Types of PC	The Perfect Forms	2		[11]			
2.2	UNIT 2. COMPUTER FUNCTIONS			10	6	[3] [5]	Computer presentation	Lexical test
2.2.1.	Many Users Many Uses	The Perfect Continuous forms	4		[3] [5] [6]			
2.2.2.	Computer and Their Application		4		[3] [5]			
2.2.3.		Revision of Tenses	2		[5] [6]			
3.	MODULE 3. CHEKING (2h)			2				
3.3.	Final lexical and grammar test			2				
	Total hours			48	12			
				60				

### II семестр

Номер раздел а темы, заниати я	Название раздела, темы занятия; перечень изучаемых вопросов		Количество часов		Литер атура	Мат.обеспечение занятий	Формы контроля знаний
			ПЗ	УСР			
	Устная тема	Грамматика					
2.	MODULE 2 Term II – 60 h		48	12			

<b>2.3.</b>	<b>UNIT 3. COMPUTER TOOLS</b>		<b>10</b>		[3]	Professional texts, audiotape	
2.3.1.	Hardware	<b>The Passive Voice</b>	4	6	[3] [7]		
2.3.2.	Software		4		[3] [7]		
2.3.3.	Operating Systems		2		[11]		Grammar test
<b>2.4.</b>	<b>UNIT 4. Computer Viruses</b>		<b>10</b>			Special articles	Round-table talks
2.4.1.	Viruses and Their Activity	<b>Direct and Reported Speech</b>	4		[3] [5] [7]		
2.4.2.	Methods to Avoid Infection		2		[3] [7]		
2.4.3.	Anti-virus Software		2		[3] [7]		
2.4.4.		Revision of Grammar	2		[6] [7]		
<b>2.5.</b>	<b>UNIT 5. COMPUTER CRIME</b>		<b>8</b>				
2.5.1.	What Computer Crime is	<b>Conditional Sentences.</b>	4	6	[3] [7]		
2.5.2.	Hacker		2		[3] [7]		
2.5.3.	Computer Security		2		[3] [11]		Vocabulary Work
<b>2.6.</b>	<b>UNIT 6. COMPUTER NETWORKS</b>	<b>Modal Verbs.</b>	<b>10</b>			audiotape	Lexical test
2.6.1.	The Purposes of Network		2		[3] [7]		
2.6.2.	Types of Networks		2		[3]		
2.6.3.	Network Configurations		4		[3] [11]		
2.6.4.	Installation of a Network		2		[11] [7]		
<b>2.7.</b>	<b>UNIT 7. The Internet</b>		<b>6</b>			Computer presentation	
<b>2.7.1</b>	New Type of Media	<b>The Non-Finite Forms of the verb.</b>	4		[3] [7]		
<b>2.7.2</b>	Online Services		2		[3] [11]		Written Work
<b>3.</b>	<b>MODULE 3. CHEKING (4h)</b>		<b>4</b>				
3.4.	Project Presentation.		2			Inter net	
3.5.	Final lexical and grammar test.		2				
	<b>Total hours:</b>		<b>48</b>	<b>12</b>			
			<b>60</b>				

## **Содержание итогового экзамена**

Экзамен проводится по окончании 2 семестра в устной и письменной форме.

Экзамен включает:

### **Письменная часть**

1. Лексико-грамматический тест.
2. Чтение и письменный перевод оригинального профессионально ориентированного текста с иностранного языка на родной со словарем.  
Объем 1300-1500 печатных знаков. Время – 45 мин.

### **Устная часть**

1. Подготовленное высказывание по заданной ситуации и неподготовленная беседа с преподавателем в рамках данной ситуации (по предметно-тематическому содержанию дисциплины).
2. Реферирование аутентичного или частично адаптированного общественно-политического, культурологического, научно-популярного текста; беседа на иностранном языке по содержанию текста.  
Объем текста – 900 печатных знаков. Время 5-7 мин.

## UNIT 1

### DEVELOPMENT OF COMPUTERS

#### WARMING UP

1. How can computers change our lives for better, for worse?
2. Can such fast development of computer technology be harmful?
3. Who uses computers today? Give examples of the impact they have on our lives.

#### ACTIVE VOCABULARY LIST

- |  |  |
|--|--|
| 1. <i>aid</i><br><i>visual aids</i><br><i>to come to smb.'s aid</i>  | 9. <i>drill</i><br><i>to conduct a drill</i>   |
| 2. <i>capacity</i><br><i>storage capacity</i><br><i>card capacity</i><br><i>capable</i><br><i>capability</i> | 10. <i>To invent</i><br><i>invention.</i><br><i>patented</i><br><i>invention</i>             |
| 3. <i>chip</i>   | 11. <i>to produce</i><br><i>production</i>   |
| 4. <i>to complete</i><br><i>completely</i><br><i>complete product</i>  | 12. <i>programming</i><br><i>programming languages</i><br><i>programming strategy</i>        |
| 5. <i>correct</i>  | 13. <i>to punch v.</i><br><i>punch n.</i><br><i>punched card</i>                             |
| 6. <i>to count</i><br><i>counter</i>   | 14. <i>to rely (on, upon)</i><br><i>reliable.</i>  |
| 7. <i>generation</i><br><i>generation of computers</i><br><i>generation of information</i>                   | 15. <i>to select</i><br><i>selection</i>   |
| 8. <i>digit</i><br><i>binary digit</i><br><i>input digit</i><br><i>digital</i>                               | 16. <i>slide-rule</i><br>17. <i>size</i><br><i>storage (memory) size</i><br><i>disk size</i> |

#### VOCABULARY TASKS

**Ex. 1** Look through your active vocabulary and find nouns corresponding to the given verbs, translate them, pay attention to suffixes.

- |               |              |
|---------------|--------------|
| To punch –    | to invent -  |
| To count –    | to rely      |
| To produce -  | to select –  |
| To generate - | to program - |

**Ex. 2** Look though the dictionary to find synonyms to the words given below.

Discover, assistance, create, training, reckon on, right, manufacture, choose, finished, trustworthy.

**Ex. 3. Write English equivalents.**

1. The solution of the problem is \_\_\_\_\_ (правильное).
2. A computer can repeat the \_\_\_\_\_ (тренировка) over and over again.
3. We'll discuss the principles and methods of \_\_\_\_\_ (программирование) at this seminar.
4. The \_\_\_\_\_ (отбор) of educational programs is an important teacher's task.
5. With the \_\_\_\_\_ (помощь) of computers teachers can make their lessons more creative and interesting.
6. Ch. Babbage's \_\_\_\_\_ (изобретение) of the machine which he called the Analytical Engine was a new era in the computer development.
7. In 1884 Russia began \_\_\_\_\_ (производить) computing machines.
8. The \_\_\_\_\_ (логарифмическая линейка) presents a quick and easy way of multiplication, division, raising to power.
9. He used \_\_\_\_\_ (перфокарты) to operate this computer.
10. The letter "b" in the word "binary" and two letters "it" in the word \_\_\_\_\_ ("цифра") form the word "bit".
11. They will \_\_\_\_\_ (завершать) this program next week.
12. I shall \_\_\_\_\_ (подсчитать) the results of this experiment with the help of a calculator.
13. MINSK 1 and IBM 650 are examples of the first \_\_\_\_\_ (поколение) computer systems.
14. A typical microprocessor \_\_\_\_\_ (чип) is half a centimeter on its side.
15. I \_\_\_\_\_ (полагаюсь) on your words.
16. What is the storage \_\_\_\_\_ (ёмкость) of this computer?
17. Full \_\_\_\_\_ (размер) floppy disks are 9 inches in diameter

**Ex. 4. Read and translate the following expressions.**

laboratory science, laboratory experiment, examination courses, computer equipment, computer language, computer screen, computer technology, computer studies.

**Ex. 5. Give antonyms and translate the words.**

*Model:*

*expensive — дорогой; inexpensive — недорогой.*

Indirect, unusual, illogical, irrational, unimportant, impracticable, illegal, irregular, independent, impossible, incorrect.

**Ex. 6. Fill in the missing words.**

1. Computer programs help students in many aspects of knowledge.
2. BASIC and PASCAL are popular programming languages.



3. Help me, please, to complete a useful computer program to study English grammar.
4. In 1937 H. Aiken began to work at the first \_\_\_\_\_ automatic digital computer. He finished it in 1944.
5. Fifth generation computer systems will be smaller, more powerful and more flexible.
6. The task of our seminar is to discuss some problems of computer technology.
7. You may express the results of this experiment.
8. The fifth generation computers are invented of speech input.
9. Floppy disks have several standard size.
10. If your answers are correct, you'll pass the exam.
11. BASIC is a \_\_\_\_\_ for solving mathematical and business problems.
12. Computers are often used as drill to demonstrate different phenomena.
13. This \_\_\_\_\_ illustrates all the sections of the central processing unit.
14. In 1882 P. L. Chebyshev invented the first arithmometer.
15. The \_\_\_\_\_ is one of the methods of data input.
16. The \_\_\_\_\_ of computer is the quantity of data that its memory unit can hold.
17. The \_\_\_\_\_ of J. Neuman's computer was 4096 words.

## READING

### TEXT 1

## ON THE HISTORY OF COMPUTER DEVELOPMENT

### VOCABULARY

*Abacus* - счеты

*a sequence mechanism* — устройство, определяющее порядок работы

*a vacuum tube* — электронная лампа

*Integrated circuit* – интегрированная схема

*Application* – применение

*On the threshold* – на пороге, в преддверии

*artificial intelligence* — искусственный интеллект

*VLSI* — сверхбольшая интегральная схема

The oldest form of mechanical calculating devices was the *abacus*. It remained the only aid of calculation until the 17th century. After the invention of logarithms in 1614 B. Pascal built an adding machine in 1642. Later he produced some others, one of them could add six-figure numbers. In 1671 Leibnitz invented the first machine, which performed multiplication by repeated addition.

Ch. Babbage, the English mathematician of the 19th century, was the first who conceived the idea of the automatic machine for complex calculations. He designed his Analytical Engine to perform four arithmetic operations. It was to have three parts: a store, a mill, and *sequence mechanism*; this Analytical Engine was a true prototype of the modern digital computer.

About seventy years passed before the production of the first digital computer. We should mention that the first generation computers (from 1940s till 1959) were very large in size and used thousands of *vacuum tubes*. Though their operations were very rapid in comparison with manual calculations they were slow by today's standards.

Древнейшей формой механических счетных устройств были счеты. Он оставался единственным средством расчета до 17 века н. э. После изобретения логарифмов в 1614 году Б. Паскаль построил арифмометр в 1642 году. Позже он создал несколько других, один из которых мог складывать шестизначные числа. В 1671 году Лейбниц изобрел первую машину, которая выполняла умножение путем повторного сложения.

Ч. Бэббидж, английский математик 19 века, был первым, кто задумал идею автоматической машины для сложных вычислений. Он разработал свою аналитическую машину для выполнения четырех арифметических операций. Он должен был состоять из трех частей: магазина, мельницы и механизма последовательности; этот аналитический механизм был настоящим прототипом современного цифрового компьютера.

Прошло около семидесяти лет, прежде чем был создан первый цифровой компьютер. Следует отметить, что компьютеры первого поколения (с 1940-х по 1959 год) были очень большими по размеру и использовали тысячи вакуумных ламп. Хотя их операции были очень быстрыми по сравнению с ручными расчетами, они были медленными по современным стандартам.

Until the late 1970s, computers were massive machines that were useful to big businesses and big government organizations but not to the general public. And they were very expensive as well.

The second generation computers began in 1959. The use of transistors instead of vacuum tubes made these computers smaller, more powerful, and more *reliable*. The second generation also saw the development of programming languages.

The third generation computers started in 1964. Robert Noyce, an engineer and a businessman, was a co-inventor of the *integrated circuit*, which was the basis for later computer design. As a businessman, Noyce co-founded Intel, one of the most successful companies in the Silicon Valley and the first company to introduce the microprocessor. The microprocessor chip became the heart of the computer, making it possible for a large computer system that once filled a room to be contained on a small chip that could be held in one's hand. It made possible the invention of a personal computer.

Usage of silicon chips instead of transistors made possible the invention of the microcomputer in the 1970s. Most characteristic features of which were low cost, small size, ease of use, large capabilities, and we can call it the computer of the fourth generation.

All computers of the present time, from the microcomputer to the supercomputer, belong to the fourth generation. This fourth generation is the first in which there are a lot of computers for the *application* in business, science, medicine, education, or for general use.

The computer revolution is very dynamic. We are on the *threshold* of the fifth generation of computers. Today researchers in the USA, Western Europe, Japan work at the problems of *artificial intelligence*, the application of natural languages, very large-scale integration (*VLSI*) technologies, etc. Computer technology has opened a variety of opportunities for people who are creative risk-takers. Rarely in history have so many people been so motivated to create. Many of them have been rewarded greatly with fame and fortune.

## WORD STUDY

### Ex. 7. Translate the sentences and expressions.

**Special** — особый, особенный, специальный, частный, индивидуальный, характерный

Special feature \_\_\_\_\_

Special training in some field \_\_\_\_\_

Special interests \_\_\_\_\_

Special reason \_\_\_\_\_

**Effect** (n) — результат, следствие, действие, воздействие, влияние, осуществление, выполнение

The effect of heat upon \_\_\_\_\_

Cause and effect global warnings

To give effect to the decisions of humanity

General effect of this report was not favorable \_\_\_\_\_

The new law came into effect last week \_\_\_\_\_

**Information** — информация, сведения, данные; осведомленность

His mind is well stored with information \_\_\_\_\_

That's a very useful piece of information \_\_\_\_\_

This information enabled us to go ahead with the work \_\_\_\_\_

We need some information from the Smithsonian \_\_\_\_\_

A communication channel is the means of transmitting data or information between the terminals \_\_\_\_\_

### Ex. 8. Translate into English.

Сложные вычисления, выполнять арифметические действия, характерные черты, использовать вместо чего-либо, в сравнении с, механическое счетное устройство, быть полезным, шестизначные числа, большие возможности, применение в области медицины, более надежный, языки программирования, делать возможным, открыть много возможностей.

Complex calculations, perform arithmetic operations, characteristic features, use instead of anything, in comparison with, a mechanical calculations device, be useful, six-digit numbers, great possibilities, application in the field of medicine, more reliable, programming languages, make it possible, open up many possibilities

### Ex. 9. Complete these statements using appropriate words and phrases from those given below.

**calculations, computers, purposes, personal computers, different jobs, over and over again**

1. I believe that computers are the most suitable and reliable machines for making **calculations**
2. Scientists have worked out computers serving different **purposes**
3. Special-purpose computers do only one job **over and over again**
4. General-purpose computers can do many **different jobs**
5. Scientists of a number of countries are engaged in working out **computers**
6. Modern life is unthinkable without **personal computers**

### Ex. 10. Make up the sentences from the words.

1. were / too / computers / and / for / use / big / expensive / private.
2. chip / the heart / microprocessor / the / of the computer / became.
3. the first / Wozniak / model / designed.
4. have / many / rewarded / fame / people / been / greatly / with / and fortune.
5. the least / he / expensive / used / materials.

Computers were too big and expensive for private use. The microprocessor became the chip the heart of the computer. Many people have been rewarded fame greatly and fortune. The least he used expensive materials.

## READING COMPREHENSION

**A3: 11,12**

### Ex.11. Read the text once again and fill in the blanks with the proper dates and names.

1. Logarithms were invented in **1614** .
2. **Blaise Pascal** built an adding machine in 1642.
3. In 1671 **invented** produced the first machine capable of multiplication.
4. **Charles Babbage** was the first who conceived the idea of the automatic computer.
5. In 1937 **people** began to work at the first completely automatic digital computer.
6. The first generation computers began in **1940** .
7. The second generation computers started in **1959** .

8. The third generation computer systems beginning in 1964 made use of silicon chips.
9. The first microcomputer appeared in 1970.

**Ex. 12. Arrange the sentences in the right order according to the text.**

1. Ch. Babbage's contribution to the automatic computer development.
2. The abacus, the oldest form of mechanical calculating devices.
3. The first generation computers.
4. Calculating devices of the 17th century. **2, 4, 1, 7, 3, 9, 5, 6, 8**
5. Invention of the integrated circuit.
6. The fourth generation computers.
7. The first completely automatic digital computer.
8. Future computer development.
9. The second and third generation computer systems.

**Ex. 13. Find the false sentences and correct them using the information from the text.**

1. The abacus remained the only aid of calculation until the 19th century. **(false)**
2. In 1671 Leibnitz invented the first machine, which could add six-figure numbers. **(false)**
3. Analytical Engine had three parts: a store, a monitor and a sequence mechanism. **(false)**
4. Operations of the first generation computers were very rapid in comparison with manual calculations. **(true)**
5. The third generation also saw the development of programming languages. **(true)**
6. All computers of the present time, from the microcomputer to the supercomputer, belong to the fourth generation. **(true)**
7. The computer revolution is rather slow.
8. Computer technology has opened a variety of opportunities for people who are creative risk-takers.

**Ex. 14. Answer the questions.**

1. What was the oldest form of mechanical calculating devices?
2. When were logarithms invented? **1644**
3. How many arithmetic operations could Analytical Engine perform? **from mathematics operation**
4. Who could use computers of the first generation?
5. What did the second generation computers use instead of vacuum tubes? **transistors**
6. What is Robert Noyce famous for? **which were low cost, small size,**
7. What are the most characteristic features of a microcomputer? **ease of use, large capabilities**
8. Nowadays there are a lot of computers for the application in business, science, medicine, education, or for general use, aren't there?
9. What do modern researchers work at?

**Ex. 15. Ask your classmates.**

- 1) about the oldest form of mechanical calculating devices;
- 2) about the calculating devices of the 17<sup>th</sup> century;
- 3) about the main components of Babbage's machine;
- 4) what he/she can say about the first electronic computer;
- 5) what computers belong to the first generation;
- 6) about the difference between the 2nd and 3rd generation computers;
- 7) when the fourth generation computers began;
- 8) what problems of the fifth generation computers researchers work at.

**Ex. 16. Compare the main characteristics of the 1st, 2nd, 3rd and 4th generations computer systems.**

**READING**

**TEXT 2**

**PERSONAL COMPUTER**

**VOCABULARY**

*To introduce* – внедрять, выпускать

*Internal memory* – внутренняя, оперативная память

*To call up* – вызывать в памяти

*Pictorial symbols (icons)* – значок, изображение

*Laptop* – дорожный компьютер

*To handle* – иметь дело, управлять, справляться

*Still images* – неподвижное изображение

*Purpose* – цель

*Gathering* – сбор

*Sharing* – разделение, распределение

PC is a computer designed for use by only one person at a time. A personal computer is a type of microcomputer—i.e., a small *digital* computer that uses only one microprocessor. A typical personal computer consists of a central processing unit; *internal memory*, consisting of hard magnetic disks and a disk drive; different input/output devices, including a display screen, keyboard and mouse, modem, and printer; and secondary, or external, memory, usually in the form of floppy disks or CD-ROMs.

Personal computers generally are low-cost machines that can perform most of the functions of larger computers but use software oriented toward easy, single-user applications. Computers small and inexpensive enough to be bought by individuals for use in their homes first appeared in the 1970s. But the personal computer industry truly began in 1977, when Apple Computer, Inc. introduced the Apple II, one of the first mass-produced personal computers. Radio Shack and Commodore Business Machines also introduced personal computers that year. These machines used 8-bit microprocessors and had rather limited memory capacity. But because personal computers were much less expensive than mainframes, they could be bought by individuals, small and medium-sized businesses, and primary and secondary schools.

The IBM Corporation, the world's dominant computer maker, did not enter the new market until 1981, when it introduced the IBM PC. The IBM PC was only slightly faster than other machines, but it had about 10 times of their memory capacity.

In 1983 Apple introduced Lisa, a personal computer with a graphical user interface (GUI) to perform routine operations. A GUI is a display format that allows the user to select commands, *call up* files, start programs, and do other routine tasks by using a device called a mouse to point to *pictorial symbols (icons)* or lists of menu choices on the screen. The Lisa's GUI became the basis of Apple's Macintosh personal computer, which was introduced in 1984 and proved extremely successful. The Macintosh was particularly useful for desktop publishing because it could place text and graphics on the display screen as they would appear on the printed page. The Macintosh's graphical interface style was used by other manufacturers of personal computers and PC software.

The memory capacity of personal computers had increased from 64 kilobytes in the late 1970s to 100 megabytes by the early '90s. By 1990 some personal computers had become small enough to be completely portable; they included *laptop* computers, which could rest in one's lap; notebook computers, which were about the size of a notebook; and pocket, or palm-sized, computers, which could be held in one's hand. At the PC market, multimedia personal computers

equipped with CD-ROM players and digital sound systems allowed users *to handle* animated images and sound (in addition to text and *still images*) that were stored on CD-ROMs. Personal computers were increasingly interconnected with each other and with larger computers in networks for the *purpose of gathering*, sending, and *sharing* information electronically. By 1997 about 40 percent of all families in the United States owned a personal computer.

## WORD STUDY

### Ex. 17. Fill in the missing words.

1. \_\_\_\_\_ a computer designed for use by only one person at a time.
2. The Macintosh was particularly useful for \_\_\_\_\_
3. The Apple II was one of the first \_\_\_\_\_ personal computers.
4. Memory capacity of personal computers had \_\_\_\_\_ from 64 kilobytes to 100 megabytes.
5. A typical personal computer consists of a central processing unit; \_\_\_\_\_ *memory*; different input/output devices and secondary, or \_\_\_\_\_ memory
6. In 1983 Apple introduced Lisa, a personal computer with a graphical user \_\_\_\_\_
7. The IBM PC had about 10 times of other computers memory \_\_\_\_\_.
8. By 1990 some personal computers had become small enough to be completely \_\_\_\_\_

### Ex. 18. Translate into English.

Цифровой, оперативная память, на экране, выполнять функции, компьютерная индустрия, компьютеры массового производства, ограниченный объем памяти, устройство ввода информации, портативный, хранить на диске, графический интерфейс.

### Ex. 19. Circle the appropriate form of the words to complete the sentence.

1. reliable, rely on, reliably  
Computers are \_\_\_\_\_ machines.
2. capability, capable, capably  
A computer is \_\_\_\_\_ of performing operations very rapidly.
3. creation, created, creative  
A programmer usually has a \_\_\_\_\_ as well as logical mind.
4. simple, simply, simpler  
Microcomputers are usually \_\_\_\_\_ to operate.
5. technology, technological, technologist  
The \_\_\_\_\_ improvements of computers have decreased man's workload.
6. accuracy, accurate, accurately  
\_\_\_\_\_ is one of the advantages of using computers.
7. permission, permit, permissible  
Computers \_\_\_\_\_ people to use their time more effectively.
8. associate, associated, association

Computers are \_\_\_\_\_ with speed and accuracy.

9. changeably, changing, changeable

Memory and primary storage can be used inter \_\_\_\_\_ .

10. education, educated, educational

There are many \_\_\_\_\_ institutions that teach computer programming.

**Ex. 20. Fill in each gap with a preposition.**

**of, on, with, for, of, to, in**

1. Many people think \_\_\_\_ computers as almost human machines with brains.
2. In fact, computers do not have brains and cannot really think \_\_\_\_ themselves.
3. Each type of machine has its own variations depending \_\_ the work it will have to do.
4. A computer system consists \_\_\_\_\_ a number of different units.
5. A computer can deal \_\_\_\_ the vast mass of data.

**READING COMPREHENSION**

**Ex. 21. Find the false sentences and correct them using the information from the text.**

1. The personal computer industry truly began in 1987.
2. The IBM PC was only slightly faster than other machines, and it had the same memory capacity.
3. The Macintosh wasn't particularly useful for desktop publishing.
4. The Macintosh's graphical interface style was used by other manufacturers of personal computers and PC software.
5. By 1980 some personal computers had become small enough to be completely portable.
6. By 1997 about 50 percent of all families in the United States owned a personal computer.

**Ex. 22. Answer the questions.**

1. What does a typical personal computer consist of?
2. What was the name of the first mass-produced PC?
3. How was the IBM PC different from other machines?
4. What is GUI?
5. Why was the Macintosh particularly useful for desktop publishing?
6. How had the memory capacity of personal computers increased?
7. What types of PC do you know?

**Ex. 23. Write questions to the answers.**

1. Computers small and inexpensive enough to be bought by individuals for use in their homes first appeared in the 1970s.
2. The personal computer industry truly began in 1977.
3. It had happened by the early '90s.
4. By 1997 about 40 percent of all families in the United States owned a personal computer.

**Ex. 24. Match the beginnings of the sentences with their endings.**

1. Personal computers generally are low-cost machines that can perform most of the functions of larger computers	a) which was introduced in 1984 and proved extremely successful.
2. The IBM PC was only slightly faster than other machines,	b) networks for the purpose of gathering, sending, and sharing information electronically.
3. The Lisa's GUI became the basis of Apple's Macintosh personal computer,	c) but use software oriented toward easy, single-user applications.
4. Multimedia personal computers equipped with CD-ROM players and digital sound systems allowed	d) but it had about 10 times their memory capacity.
5. Personal computers were increasingly interconnected with each other and with larger computers in	e) a small <i>digital</i> computer that uses only one microprocessor.
6. A personal computer is a type of microcomputer, that is	f) users to handle animated images and sound.

**Ex. 25. Give a summary of the article in 7-10 sent.**

### **LISTENING COMPREHENSION**

**Ex.26. Name types of PCs which you know, explain other students how they differ from each other.**

**EX. 27. Get acquainted with the following words, make up 2 sentences with any of them.**

To clarify – разъяснить

Versatile – многоцелевой, универсальный

To refer to – относиться

AC power – мощность переменного тока

To plug on - включать в сеть

rechargeable - перезаряжаемый

agenda book – ежедневник

**Ex. 28. Listen to the dialogue. Check your knowledge concerning types of PCs.**

**Ex.29. Listen to the dialogue. Indicate whether the following items were mentioned or not. Then check your answers using typescript. (see appendix)**

1. Portable computers are simply smaller version of desktop computers.
2. Characteristics that differentiate personal computers.
3. Laptops can be used for work and entertainment.
4. Notebooks weigh less than desktops and have smaller screen.
5. The history and development of personal computers.
6. Screen size of different types of PCs.
7. Usage of palmtops.
8. A GUI is a display format that allows the user to select commands, call up files, start programs etc.
9. Power different types of computers can operate on.
10. The memory capacity of personal computers has greatly increased for the last 20 years.



**Ex. 30. Look through the typescript again and fill in the table below.**

Type of PC	Screen size	Weight	Power	Has a keyboard
Laptop				
Palmtop				
Notebook				
Clipboard				

And now compare the PCs according to the model: *Laptops are larger than notebooks, but palmtop is the smallest of all.*

### **FOCUS ON GRAMMAR**

**Ex. 31. Use the correct form of the adjectives.**

1. An electronic computer is one of (great) achievements of man.
2. What is (important) unit in the computer?
3. PASCAL is (practical) than BASIC.
4. The business segment is one of (large).
5. Databases, spreadsheets and word-processors help business to run (efficiently), make administrative work (easy).
6. Computer technology has a great potential for (progressive) transformation of our society.

**Ex. 32. Use the correct tense form.**

1. They (to write) this computer program by June.
2. A hybrid computer (to combine) some properties of digital and analog computers.
3. Computers (to become) smaller, cheaper and more numerous. Designers (to call) these small computers microcomputers or micros since that time.
4. When I came into the room, my friend (to compile) a program.
5. The electronic computer just (to perform) these calculations.
6. The computer of the future (to use) natural languages.

**Ex. 33. Reply to the following sentences with a suitable question.**

1. All computers have three basic capabilities.
2. The fundamental job of a computer is processing information.
3. The memory is used for storing information.
4. Charles Babbage, an Englishman, could be called the father of computers.
5. Some of the most common methods of inputting information are to use punched cards, magnetic tapes, discs and terminals.
6. Punched cards were used before 1960.
7. Computers are machines capable of processing and outputting data.
8. The computed results have been printed in tables.
9. Yes, the name «computer» covers many different types of machine.
10. No, all computers are basically the same.

## **PROBLEM SOLVING**

**Ex. 34. Discuss the following questions.**

1. What type of computer do you consider to be the most suitable at the office, at home, while traveling? Prove your opinion.
2. How would your life change if there were no computers?
3. Is a computer considered to be a necessary thing for every family? Why?

## UNIT 2

### COMPUTER FUNCTIONS

#### WARMING UP

1. How do you use your computer in your free time?
2. Have you ever used PC for your studies? What for?
3. List as many uses as you can for computers in one of these areas.
  - a) supermarkets
  - b) hospitals
  - c) airports
  - d) police headquarters

#### ACTIVE VOCABULARY LIST

- |  |  |
|--|--|
| 1. <i>device</i>   | 8. <i>electronic mail (e-mail)</i>   |
| 2. <i>to perform</i><br><i>to perform a task (calculations)</i><br><i>performance</i>  | 9. <i>message</i><br><i>To send a message</i><br><i>To get, receive a message</i><br><i>to leave a message for smb</i>   |
| 3. <i>to process</i><br><i>to process information (the results)</i><br><i>data processing</i><br><i>processor</i><br><i>word processor</i> | 10. <i>access</i><br><i>to access</i><br><i>to have access to smth</i><br><i>to gain, get access</i><br><i>to deny access</i><br><i>accessible</i><br><i>accessibility</i> |
| 4. <i>application</i><br><i>application software</i><br><i>applicable</i>  | 11. <i>presentation graphics</i>   |
| 5. <i>database</i>   | 12. <i>to research</i><br><i>research</i><br><i>researcher</i>   |
| 6. <i>spreadsheet</i>  |  |
| 7. <i>to create</i><br><i>creative</i><br><i>creation</i>  |  |

#### VOCABULARY TASKS

**Ex. 1. Look through your active vocabulary and try to find nouns derived from the following verbs.**

to process –	to present -
to perform –	to research -
to create -	to apply –

**Ex. 2. Find synonyms.**

mechanism	message
to carry out	device
admittance	to create
investigation	application

to design  
use  
note

to perform  
research  
access

**Ex. 3. Match the words on the left with the definitions on the right.**

- |                    |   |
|--------------------|---|
| 1. device          | a) a spoken or written piece of information passed from one person to another       |
| 2. application     | b) a system by which messages are sent by electronic means, without using paper     |
| 3. spreadsheet     | c) a piece of equipment intended for a particular purpose                           |
| 4. database        | d) a type of computer program that allows figures to be shown in groups on a screen |
| 5. electronic mail | e) a particular practical use   |
| 6. message         | f) a large collection of data that is stored in a computer system                   |

**Ex. 4. Which five of these verbs are defined below?**

*To send, to perform, to create, to access, to process, to deny, to research.*

- 1) to cause (something new) to exist, to produce
- 2) to obtain (stored information) from a computer's memory
- 3) to do, to carry out (a piece of work)
- 4) to put (information, numbers, etc.) into a computer for examination
- 5) to refuse to give or allow

**Ex. 5. Choose the appropriate words for the sentences.**

**1. process, processed, processing**

- a. The Central ..... Unit is responsible for executing the programs.
- b. A diagram can show if a ..... has to be repeated or if there are alternative routes to be taken.
- c. Now you can send the ..... data to a printer.

**2. calculation, calculate, calculating, calculator, calculable**

- a. A computer can do many kinds of ..... quickly and accurately.
- b. A computer can ..... numbers much faster than a manual .....
- c. . Some problems aren't ..... without logarithm tables.

**3. performance, perform, performed, performing, performer**

- a. The machine ..... the tasks which the programmer gives it.
- b. Data processing refers to the operations which are ..... on the data either to derive information from them or to order them in files.
- c. The ..... of the computer salesman was measured by the number of units he sold.

## **READING**

### **TEXT 1**

#### **MANY USERS MANY USES**

### **VOCABULARY**

*Advanced* - сложный

*Subset* - раздел

*Chart* – схема, таблица

*Handle* – обрабатывать

*Efficiently*-эффективно

Computer is an electronic device that performs calculations and processes information. It can handle vast amounts of facts and figures and solve complicated problems at high speeds. The ability of a computer to do so many tasks makes it useful for a wide variety of purposes. There are some categories of computer *application*: business, science, engineering, medicine, education, home.

The business segment is one of the largest. Databases, spreadsheets, and word processors help business to run more *efficiently*, make administrative work easier. Creating documents (correspondence, reports and so on) and managing finances are the main tasks in an office.

Another application that has steadily grown with microcomputer use is electronic mail, or E-mail. E-mail lets one computer user send a message to another user on the other side of the building – or the other side of the planet. As long as both users have *access* to a common computer network, they can communicate. Businesses have found that this type of communication can save large amounts of time and money.

One more application for which businesses have found great use is presentation graphics. Whether you are selling an idea or product to your boss or to a potential customer, presentation graphics software can help. These programs give you a great possibility to create and format *charts*, graphs and text.

In science and engineering, computers do calculations, draw diagrams, process the results of experiments, keep records, help with different kinds of chores. Without computers it would be impossible for engineers to perform the great number of calculations needed to solve many *advanced* technological problems. Computers help in the building of spacecraft. Computers also are used to develop equipment for exploring the Moon and planets. Computers have been of great help to researchers in the biological, physical and social sciences. They also have a major role in the field of information science.

In medicine databases, diagnostic devices, monitoring systems serve doctors in their work, in medical and laboratory research.

The ability to work with a computer is a necessary basic skill today. In primary and secondary schools pupils learn how to operate a computer. Computer helps students to study at their own pace more intensively, and helps teachers to do their work more *creative*. Most students find that using a word processor is faster and far more convenient, especially when it comes to editing. The most widely used application after the word processor is the electronic spreadsheet. Students also use databases to organize their own *research*. Spreadsheet is good for organizing numeric data, database software is excellent for collecting many kinds of data, including numbers, text, graphic images, and even sound. Once you have collected a large body of data, you can use the software to search through it, organize it, and pick out specific *subsets* of related data.

People at home use all the same types of software as they do at school or at office. Computers serve as word processors, electronic message centers and personal finance devices. Very often people use personal computers to play games, watch video films, or for education.

## **WORD STUDY**

### **Ex. 6. Fill in the missing words.**

1. Computer is an electronic \_\_\_\_\_ that performs calculations and processes information.
2. There are some categories of computer \_\_\_\_\_: business, science, engineering, medicine, education, home.
3. Databases, spreadsheets, and word-processors help business to run more\_\_\_\_\_, make administrative work easier.
4. The ability to work with a computer is a \_\_\_\_\_ basic skill today.
5. Most students find that using a word processor is faster and far more convenient, especially when it comes to \_\_\_\_\_.

6. As long as both users have \_\_\_\_\_ to a common computer network, they can communicate.
7. People at home use all the same types of \_\_\_\_\_ as they do at school or at office.

**Ex. 7. Translate into English.**

Способность, сложные технологические задачи, собирать данные, лабораторные исследования, разрабатывать оборудование, выполнять вычисления, беречь время и деньги, отправить сообщение, потенциальный покупатель, строить и форматировать графики, выбирать нужные разделы.

**Ex. 8. Match the verbs in column A with the nouns in B.**

A	B
1. Perform	a. problems
2. Process	b. time
3. Solve	c. data
4. Manage	d. diagrams
5. Create	e. finances
6. Send	f. information
7. Save	g. records
8. Keep	h. calculations
9. Develop	i. messages
10. Collect	j. documents
11. Draw	k. equipment

**Ex. 9. Add a word or part of a word to complete the following words and phrases.**

Data.....	net.....
e-.....	space.....
word .....	soft.....
..... graphics	sub..... of data

**Ex. 10. Read and translate the following expressions.**

Data processing, numeric data, related data, to search through data, to collect data, to organize data.

**Ex. 11. Make up sentences from the words.**

1. the data / a keyboard / we / to input / use.
2. can / problems / solve / complicated / computers / modern.
3. Help / finances / their / spreadsheets / people / to organize
4. in / sciences / researchers / computers / different / serve.
5. use / people / home / computers / many / personal / at.

**Ex. 12. Match the words from column A with column B.**

A	B
Binary format	формат дорожки (магнитного диска)
Data format	двоичный формат
Fixed format	табличная форма (представления)
High-level format	продолжить форматирование
Keyboard format	формат данных

Matrix format  
 Proceed with format  
 Track format

фиксированный (жесткий) формат  
 компоновка клавиатуры  
 высокоуровневое форматирование (жесткого диска)

## READING COMPREHENSION

**Ex. 13. Say if the sentences are true or false. Correct the false ones using the information from the text.**

1. One of the biggest segment of computer application is business.
2. Presentation graphics software gives you a possibility to send messages to other users.
3. The ability to work with a computer isn't important today.
4. Playing computer games and watching video films are the main tasks in an office.
5. Students often use such applications as word processors and spreadsheets.
6. Computers don't play a great role in science.
7. Businesses find that using E-mail saves time and money.
8. A word processor is good for organizing numeric data.
9. People at home use different types of software than they do at school or at office.
10. Computers help in the building of spacecraft.

**Ex. 14. Match the beginnings of the sentences with their endings.**

1.The ability of a computer to do so many tasks	a)they can communicate.
2. the program which helps to make speeches in public	b)is electronic mail.
3. An application which is commonly used by accountants and all others who work with numbers	c)is presentation graphics.
4.As long as both users have access to a common computer network	d)makes it useful for a wide variety of purposes.
5. One more application for those who like to communicate with people all over the world	e)collecting many kinds of data.
6. Database is excellent for	f) is the electronic spreadsheet.

**Ex. 15. Fill in the table.**

Places where computers can be used	Ways of using



**Ex. 16. Answer the questions.**

1. What makes a computer useful for a wide variety of purposes?
2. Can you name any categories of computer application?
3. Can any computer programs make administrative work easier?
4. Have computers been of any help to researchers in the biological, physical and social sciences?
5. What are the ways in which computers can help students?
6. What are databases and spreadsheets used for?
7. What are the main tasks in an office?
8. Where does E-mail let one computer user send a message to?
9. How do computers serve people at home?
10. When can presentation graphics software help you?

**Ex. 17. Give a summary of the article in 8-10 sent.**

**Ex. 18. Ask your classmates and let them answer.**

- 9) about the categories of computer application;
- 10) what ways of using computers in an office he/she knows;
- 11) how presentation graphics software can help in business;
- 12) what he/she can say about computer application in medicine;
- 13) what role computers play in different fields of science;
- 14) what spreadsheet is used for;
- 15) what database is used for;
- 16) what he/she most often uses a computer for.

**READING**

**TEXT 2**

*Due to* - благодаря

*Adjust* – приводить в порядок

*Probe* – зонд

*Home management* – ведение  
домашнего хозяйства

*Thoroughly* - тщательно

*Invaluable* - бесценный

*Bookkeeping* – ведение бухгалтерии

*Handling* - управление

An electronic computer is one of the greatest achievements of the man. Today computers play chess, compose music, translate from and into foreign languages, help to solve many problems in science, engineering, business. They play an increasingly important role in society, particularly industrially developed countries. The installation of computers in certain organizations has already greatly increased the efficiency of these organizations. They save a lot of time and energy, operate at great speed, store large quantities of information, carry out long and complex operations.

The modern world of high technology is possible mainly *due to* the development of the computer. They have opened up a new era in manufacturing by means of automation. Numerous factories use computers to control machines that make products. A computer turns the machines on and off and *adjusts* their operations when necessary. Computers are used as a navigation aid on airplanes, ships, and spacecraft. They also enable scientists to analyze data returned by space *probes*.

But not only in science and industry computers are used. Thanks to them modern medicine can diagnose diseases faster and more *thoroughly*. Chemists and physicists use computers to check sensitive laboratory instruments and to analyze experimental data. Architects and engineers today can't imagine their work without computers, as they help them to design bridges and other structures.

In the office personal computers may be used for word processing, *bookkeeping*, storage and *handling* of necessary information.

Moreover, computers are wide-spread in education. Many schools now use computers as teaching machines for independent learning. Spreadsheets and databases have proven to be *invaluable* as research tools for students.

At home computers can be used for *home management* (balancing the family finances, for example) and for playing computer games, watching films or listening to music.

Although a computer can do many things, it cannot think. So, electronic computers can't replace the human brain, but they release it from mechanical functions.

## WORD STUDY

### Ex. 19. Fill in the missing prepositions.

1. Today computers translate ..... and ..... foreign languages.
2. They operate ..... great speed, carry ..... complex operations.
3. They have opened up a new era in manufacturing .... means .... automation.
4. A computer turns the machines ..... and .....
5. Many schools now use computers ..... teaching machines ..... independent learning.
6. Electronic computers can release the human brain ..... mechanical functions.

### Ex. 20. Give English equivalents for the words in brackets.

1. An electronic computer is one of the greatest \_\_\_\_\_ (достижений) of the man.
2. Computers play an increasingly important role \_\_\_\_\_ (в обществе).
3. They \_\_\_\_\_ (хранят) large quantities of information.
4. The modern world of \_\_\_\_\_ (высоких технологий) is possible mainly due to the development of the computer.
5. Computers enable scientists \_\_\_\_\_ (анализировать данные) returned by space probes.
6. Computers may be used for storage and handling of \_\_\_\_\_ (необходимой информации).
7. At schools computers are used as teaching machines for \_\_\_\_\_ (самостоятельного обучения).

8. Spreadsheets and databases are \_\_\_\_\_ (бесценны) as research tools for students.
9. Electronic computers cannot \_\_\_\_\_ (заменить) the human brain.

## READING COMPREHENSION

### Ex. 21. Answer the questions.

1. Why is an electronic computer one of the greatest achievements of the man?
2. How are computers used in industry?
3. What do you know about applications of computers in the office?
4. How do computers help architects in their work?
5. What is a computer application in medicine?
6. What place do computers occupy in education?
7. How do people use computers at home?
8. Why can't computers replace the human brain?

### Ex. 22. Look through the text once more and say which one of the computer applications you consider the most important. Why?

## SPEAKING

### Ex. 23. Read and reproduce the dialogue.

*Mean* – обозначать, иметь в виду

*To realize* – понимать

*Accurate measurements* – точные измерения

*Purpose* - цель

### Computers and Their Application

*Ann:* Hello, Peter! I haven't seen you for ages! Where have you been all this time?

*Peter:* You know, Ann, I've been very busy this week! We have examined and analyzed the results, and now we are processing the data.

*Ann:* Do you mean you have taken part in the work?

*Peter:* Naturally! And you know, I've come to realize that computers have many scientific uses.

They are the most suitable and reliable machines for making calculations.

*Ann:* How clever of you!

*Peter:* All the great discoveries in science have been the result of accurate measurements and calculations.

*Ann:* I wonder if scientists have worked out computers serving different purposes.

*Peter:* But of course! There are computers for various applications. Special-purpose computers,

for example, do only one job over and over again. But there are some computers that can

do many different jobs. They are called general-purpose computers.

*Ann:* Oh, how interesting! And what can the general-purpose computers do?

*Peter:* They answer questions about rockets and planes, bridges and ships long before these things are even built. Computers help our space program, our armed forces, our business and industry.

*Ann:* Thank you for the interesting information and good-bye!

*Peter:* Good-bye!

**Ex. 24. Ask your partner the questions given below. Let him (her) give an answer referring to the dialogue if necessary:**

1. Why has Peter been very busy?
2. Is Peter of opinion that computers are very reliable for making calculations?
3. What types of computers are there at present?
4. What are special-purpose computers?
5. What can general-purpose computers do?

**Ex. 25. You want to buy a personal computer. Try to convince your family that it's a necessary thing for all of you.**

### **FOCUS ON GRAMMAR**

**Ex. 26. Finish the sentences with the appropriate adverbial modifiers of time and name the tenses:**

1. He is leaving for Sochi...
2. His parents bought him a computer...
3. Electronic engineer has...gone away.
4. She reads English books... .
5. They had transmitted all the information....
6. The manager was storing the information electronically... .
7. The secretary has been keyboarding the documents... .
8. You'll be installing it... .
9. He'll be discussing the results of the meeting ... .
10. The firm will have provided us with new computers ... .

**Ex.27. Use the verb in the appropriate tense-form and translate the sentences into Russian:**

1. This software...(to contain) information about memory capacity.
2. He...(to store) the information in his file in 5 minutes.
3. Mr Smith...(to buy) a new modem now.
4. They...(to discuss) the amount of new devices all the previous meeting.
5. The developer...(to check) the equipment next Friday while the designer...(to teach) the employees how to handle with scanners and printers.
6. They...just (to install) the program.
7. Before Mr. Brown ... (to leave) for London next Friday, his secretary...(to phone) to the hotel to reserve an accommodation for him.

**Ex.29. Open the brackets, put the verbs into the required tense form.**

1. She said, "I (develop) a new program since I left my last job."
2. You said, "I (help) you with this invention!"
3. She asked me, "When .... we (provide) our company with all the necessary hardware?"
4. My friend said, "I (finished) installing the program by the time you come to work."
5. Mark asked me, "Why ... you (want) to convert this data?"
6. Marcia said, "The modem (retrieve) the signal for over an hour."
7. Alison said, "I (plug) the sound card before you arrived."
8. He said, "I (be) busy. I can't help you".
9. She said to him "Come here at 9. I hope we (expand) memory by that time".
10. He said, "When ... you (send) the telegram?"

11. He said, “ I am sure they (receive) that work”.
12. Jane said “Bring that book for me, please. The task is too complex, my knowledge (not allow) me to cope with it”.
13. He said me “ Do you know how many users (visit) this cite now?”
14. “Good morning” George said entering the room, “ Why ... we (not go) to the exhibition?”
15. She said, “ I’m terribly sorry, I completely (forget) about it”.

## **PROBLEM SOLVING**

**Ex. 30. 1) Write down three positive and three negative things you can say about:**

- A) using computers at offices;
- B) using computers in education;
- C) using a computer at home.

**2) Work in pairs. Compare your lists and discuss the points on which you have different opinions.**

**Ex. 31. Work in groups. How do you think these professions might use computers?**

**Compare answers with others in your group.**

architects	Landscape gardeners
policemen	musicians
farmers	rally drivers
sales people	archeologists

## UNIT 3

### COMPUTER TOOLS

#### WARMING UP

1. Name different types of computers. Then match the possible users below to each type. Justify your choice.

1. marketing research person collecting data from the general public
2. large company processing payroll data
3. traveling salesperson giving marketing presentations
4. large scientific organization processing work on nuclear research
5. businessperson keeping track of appointments while traveling
6. graphic designer
7. secretary doing general office work

2. What hardware devices or software do they need to perform their work?

#### ACTIVE VOCABULARY LIST

- |                                     |                                    |
|-------------------------------------|------------------------------------|
| 1. <i>access</i> —                  | <i>to link -</i>                   |
| <i>access time</i> —                | <i>linkage</i> —                   |
| <i>limited access</i> -             |                                    |
| <i>to deny access</i> —             | 8. <i>load</i> —                   |
| <i>to gain, get access</i> -        | <i>work load</i> -                 |
| <i>RAM (Random Access Memory)</i> - | <i>program load</i> —              |
| 2. <i>application</i> -             | <i>input (output) load</i> -       |
| <i>Windows application</i>          | <i>loader</i> —                    |
| <i>computer application</i>         | <i>to load (the computer)</i> -    |
| <i>to apply</i>                     | 9. <i>message</i> —                |
| 3. <i>data</i> —                    | <i>to leave a message for smb.</i> |
| <i>to collect data</i> —            | <i>error message</i> —             |
| <i>to evaluate data</i> —           | <i>coded message</i> —             |
| <i>to process data</i> —            | <i>to message</i> -                |
| <i>to retrieve data</i> —           | 10. <i>output</i> —                |
| 4. <i>file</i> —                    | <i>information output</i>          |
| <i>data file</i> —                  | 11. <i>to retrieve</i> —           |
| <i>to establish a file</i> —        | 12. <i>to represent</i> —          |
| <i>to reset a file</i> -            | <i>representation</i> —            |
| <i>to file</i> —                    | <i>data representation</i> —       |
| 5. <i>hardware</i> —                | <i>hardware representation</i> -   |
| <i>basic hardware</i> -             | 13. <i>string</i> —                |
| <i>compatible hardware</i> -        | <i>binary element string</i>       |
| <i>plug-and-play hardware</i> -     | <i>symbol string</i>               |
| 6. <i>Input</i> -                   | 14. <i>switch</i> —                |
| <i>input data</i>                   | <i>make a switch</i> -             |
| <i>to input</i>                     | <i>to switch on</i> — включать,    |
| 7. <i>link</i> —                    | <i>to switch off</i> — выключать.  |
| <i>connecting link</i> -            | <i>switchboard</i> -               |
| <i>transmission link</i> -          |                                    |

## VOCABULARY TASKS

### Ex. 1. Look at the following pair of words and

#### a) try to find similar ones among your new active vocabulary.

Link – to link

#### b) try to make correspondent nouns to the following verbs

to transmit –  
to apply –  
to represent –  
to load –  
to switch –

### Ex. 2. Study the different meanings of the following words and use them to translate the sentences.

- a) application n. 1) применение, использование  
2) приложение (часто используется наряду с термином program (программа))  
3) прикладная задача; (прикладная) система  
apply v. 1) обращаться с просьбой, заявлением (особ. в письменной форме; for - за чем-л.; to - к кому-л.)  
2) применять, использовать, употреблять (to)

1. Windows application is a most commonly used program nowadays.
2. He wants to apply for a new job.
3. Application of new techniques made it possible to develop PCs which are smaller and more reliable than the previous ones.
4. Do you often use an off-line application in your work?
5. If you apply the new method you'll cope with this task two times quicker.

- b) output n. 1) продукция; продукт, изделие  
2) выходное устройство, устройство вывода; вывод  
data output — вывод данных  
adj. 3) выходной; связанный с выводом, с выводным устройством  
v. 4) выводить (данные)

1. Results are output in the form of punched cards.
2. That output error was so considerable that we had to revise part of a program.
3. What devices do you usually use for data output?
4. The company increased output of CD-ROMs from 10 to 15.000 a month.

### Ex. 3. Give English equivalents for the words in brackets.

1. Through binary arithmetic, in which all numbers are \_\_\_\_\_ (строки) of 0s and 1s, the computer can \_\_\_\_\_ (представить) any letter, number or symbol in a binary code.
2. The computer immediately translates the integer into its binary \_\_\_\_\_ (представление).
3. The computer can join \_\_\_\_\_ (символьные строки).

4. The terms "byte" and \_\_\_\_\_ ("символ") are sometimes used synonymously.
5. We shall discuss \_\_\_\_\_ (аппаратное обеспечение) of this computer at the next seminar.
6. What must a user do \_\_\_\_\_ (вызвать) the necessary data from memory?
7. \_\_\_\_\_ (Связь) of the central processor to input devices may be through a very small specialized processor, a channel.

**Ex. 4. Match Russian and English variants.**

1. current data	a. собирать данные
2. cite data	b. фактические данные, реальные данные
3. data processing	c. адресные сведения
4. business data	d. исходные данные
5. to collect data	e. факты биографии
6. biographical data	f. деловая информация; коммерческая информация
7. gather data	g. ссылаться на данные
8. feed in data	h. текущие данные
9. evaluate data	i. обработка данных
10. basic data	j. извлекать данные
11. address data	k. сырой материал
12. actual data	l. научные данные
13. retrieve data	m. статистические данные
14. process data	n. хранить данные
15. raw data	o. оценивать данные
16. scientific data	p. поставлять данные
17. statistical data	q. собирать информацию
18. store data	r. обрабатывать данные

**Ex. 5. Find antonyms.**

Output	inexperienced
Always	to decrease
Experienced	to forbid
To increase	never
To find	input
To permit	external
Unnecessary	to loose
Internal	unload
Load	necessary

**Ex. 6. Find synonyms.**

Device	perform
Help	apparatus
Fulfill	essential
Main	error
Precisely	regular
Permanent	quick
Rapid	assistance
Mistake	exactly



### Ex. 7. Fill in the missing words from your active.

1. The operating system contains basic instructions that tell the .....how to use other hardware devices.
2. Each ..... has its name, type, length in Kbytes, the date and the time of its creation.
3. The computer takes in data through ..... devices.
4. The constituent parts of a computer are called .....
5. .... is the process of entering data into the computer.
6. The most common device used for input on microcomputers is the .....
7. .... receives data over phone lines.
8. Hard disks can store much more information than floppy disks, their ..... is faster.
9. .... is a group of instructions that tells the processing devices what to do.
10. .... is a job that a computer can perform.
11. A specialized processor, a controller, ... a disk drive to a computer.
12. There is a special ..... on the computer keyboard that regulates the work with Russian and Latin alphabets.

## READING

### TEXT 1

## HARDWARE AND SOFTWARE

### VOCABULARY

*Meaningful* - значимый

*Plotter* – плоттер, программа графического вывода

*Storage* - хранение

*Magnetic* - магнитный

*CPU (central processing unit)* – центральный процессор

*Track* – след, дорожка

All computers consist of hardware. This includes the computer itself and all other physical devices. The other pieces of the computer system include software, the instructions that tell the computer what tasks to do; *data*, the information the computer works on; and you, the user, who tells the computer what to do, and for whom the computer does all its work.

All computers use the same basic techniques for doing the tasks we give them. The computer takes in data through input devices, it manipulates the data according to its instructions, it outputs the results of its processing, and it stores data for later use. These four processes together are known as the computing cycle.

*Input* is the process of entering data into the computer. The most common device used for input on microcomputers is the keyboard. Computer keyboards include many special command and function keys to do specialized input tasks. Other input devices include a mouse, which manipulates a pointer on the computer screen for giving commands and entering data; a scanner, which reads graphic images and pages of text and sends them to the computer; a modem, which receives data over phone lines; and several other devices.

Once data is in a microcomputer, it is processed by the microprocessor. Microprocessors do all calculations and manipulations necessary to transform data into *meaningful* information. Associated with the processor is the computer's memory, which is used for storing data and programs while they're being used by the processor.

Getting processed data out of the computer is the job of *output* devices. The computer can display the data on a monitor screen, of which there are several types: color or monochrome, desktop or portable. You can also send data to a printer or *plotter* to make a paper copy, use the modem to send the data over a phone line to another computer, or use any number of specialized output devices.

What do you do if you want to keep the data in a permanent form? That's what *storage* devices are for. Storage devices hold data permanently, so you can save it and *retrieve* it later. Removable disks, such as USB flash drives, are used for easy, portable storage, and built-in hard disks are used for more permanent storage of larger amounts of data and programs for fast *access*. Other common storage devices include optical discs (such as CD-ROM) and *magnetic* tape.

A program is a group of instructions that tells the processing devices what to do. Software can be a single program or a set of programs that work together.

Two types of software are necessary to make the computer capable of performing useful work. They are the operating system and application software. The operating system contains basic instructions that tell the *CPU* (central processing unit) how to use other hardware devices, where to find programs, and how to load and keep *track* of programs in memory. Because it includes basic instructions that are important to the functioning of the computer, the operating system is the first program to be processed after the computer is turned on, and it remains in memory until the computer is turned off.

For the computer to perform tasks, it needs application software in addition to the operating system. An application is a job that a computer can perform, such as creating text documents, manipulating sets of numbers, creating graphic images, and communicating with other computers. Application software is the term used to describe programs that tell the computer how to perform such jobs. The six most common types of application software are

- Word processing software
- Graphics software
- Desktop publishing software
- Spreadsheet software
- Database management software
- Communications software

Application software is what makes computer a tool for performing the tasks we most often need at school, at home, or at office.

## WORD STUDY

### Ex. 8. Translate into English.

Хранение, восстанавливать (извлекать), магнитный, доступ, центральный процессор, пользователь, обрабатывать информацию в соответствии с инструкциями, обработка данных, клавиатура, функциональная клавиша, графическое изображение, экран монитора, одноцветный, переносной, дисковод, инструмент выполнения задач.

### Ex. 9. Make up the sentences from the words.

1. devices / other / mouse / include / input / a.
2. can / software / single / be / a / program.
3. instructions / that / tells / a / program / is / processing / a group / of / the / devices / what to do.
4. permanently / storage / devices / hold / data.
5. hardware/ the computer/ physical devices/ all other/ itself/ includes/ and.
6. special/ and / keys computer/ many/ keyboards/ command/ include/ function.

### Ex.10. Fill each blank with one word. Choose the word from the list.

Disk, printer, punched, mouse, input, ROM, continuous, linked, software, screen, single, keyboard, microprocessor, disk drive, output, menu, operating system, CD.

1. ... is the facility the computer uses to store programming information temporary. The bigger it is, the more complicated tasks the computer can carry out.
2. The ... is where you place the disk to start the program.
3. The ... is a list of information that lets you choose what to do next.
4. The ... is used to make hardcopies of what you can see.
5. The ... is a heart of the computer and controls everything it does.
6. The most common ways in which you can ... information into a computer are: by typing it on a ...; from a magnetic...; from a ... card; from another computer ... to yours.
7. A computer can ... information: on a ... called a VDU, to a ... which may use ... sheets or ... stationery.
8. The ... is a complex set of instructions which tells the computer how to carry out different tasks.
9. As an alternative to putting information on a floppy disk you can use a ....
10. All modern computers have a ... , which you can move an arrow to point at different parts of the screen.

**Ex 11. Match each item in Column A with its function in column B.**

A Item	B Function
a) RAM	1) Controls the cursor
b) processor	2) Inputs data through keys like a typewriter
c) mouse	3) displays the output from a computer on a screen
d) clock	4) Reads DVD-ROMs
e) 3.5" floppy drive	5) Reads and writes the removable magnetic discs
f) monitor	6) holds instructions which are needed to start up the computer
g) keyboard	7) holds the data read or written to it by the processor
h) DVD-ROM drive	8) provides extremely fast access for sections of a program and its data
i) cache	9) controls the timing of signals in the computer
j) ROM	10) controls all operations in a computer

**Ex. 12. Complete the sentences in each exercise with the words in the box above it. Use each word or expression once.**

**back up - check - cut - data - database - desktop publishing - exit - games - open  
- password - paste - print - save - spreadsheet - word processing**

1. Our accountants use a \_\_\_\_\_ to control the finances of the company.
2. The sales department keeps the information about our clients in a \_\_\_\_\_ .
3. We use a \_\_\_\_\_ program to type letters and faxes.
4. The personnel department uses a \_\_\_\_\_ program to create a newsletter for the employees.
5. And when my boss isn't looking, I play \_\_\_\_\_ .
6. You can't \_\_\_\_\_ that file unless you know the \_\_\_\_\_ .
7. You can \_\_\_\_\_ the information out of the spreadsheet and \_\_\_\_\_ it into the word processor.
8. \_\_\_\_\_ the file before you \_\_\_\_\_ the program.
9. Always \_\_\_\_\_ the spelling before you \_\_\_\_\_ the document.
10. If you don't \_\_\_\_\_ regularly you could lose all your \_\_\_\_\_ .

**Ex. 13. Fill in the missing words.**

<b>Information</b>	<b>WYSIWYG</b>	<b>Scroll</b>	<b>Chips</b>	<b>Graphics</b>	<b>Files</b>	<b>RAM</b>
<b>Load</b>	<b>Bugs</b>	<b>Systems</b>	<b>ROM</b>	<b>Controls</b>	<b>Processing</b>	

1. Problems in programs are caused by \_\_\_\_\_.
2. Silicon \_\_\_\_\_ contain a set of integrated circuits reduced to a very small size.
3. Obtaining \_\_\_\_\_ is done by \_\_\_\_\_ data.
4. Software produces images which can appear on the screen as \_\_\_\_\_ .
5. Memory that is permanent, cannot be written to, and only be read, is \_\_\_\_\_.
6. Memory into which information can be loaded and from which data can be read, is \_\_\_\_\_ .
7. Operators \_\_\_\_\_ into the computer's memory program that they want to use.
8. Analyzing ways of doing things, and of improving them is done by \_\_\_\_\_ analysts.
9. "What you see is what you get" explains \_\_\_\_\_
10. A single disk can contain a large number of different \_\_\_\_\_.
11. \_\_\_\_\_ can carry out instructions or operations when certain conditions occur.
12. The operators \_\_\_\_\_ lines of text up the screen, so that a new line appears at the bottom and the top line disappears.

**Ex. 14. Fill in the missing words.**

<b>1. Hardware</b>	<b>5. Spreadsheets</b>	<b>9. IBM compatible</b>	<b>13. Saved</b>
<b>2. Programs</b>	<b>6. Communications</b>	<b>10. Word processing</b>	<b>14. PC</b>
<b>3. Desktop publishing</b>	<b>programs</b>	<b>11. Accounting</b>	<b>15. Network</b>
<b>programs</b>	<b>7. Keys in/ types in</b>	<b>programs</b>	<b>16. Software</b>
<b>4. Retrieved</b>	<b>8. Mainframe</b>	<b>12. Database</b>	<b>17. Graphics</b>
	<b>computer</b>	<b>management</b>	
		<b>programs</b>	

Computer 1. \_\_\_\_\_ consists of a CPU, a monitor, a keyboard, a printer, and other connections. The 2. \_\_\_\_\_ contains the various 3. \_\_\_\_\_ you run on your computer. The most common programs used in business are those for 4 \_\_\_\_\_ (writing letters, documents), 5. \_\_\_\_\_ (for budgets and financial analysis), 6. \_\_\_\_\_ (for keeping names and addresses of customers), 7. \_\_\_\_\_ (for book-keeping), 8. \_\_\_\_\_ programs (for drawing charts), 9. \_\_\_\_\_ (for electronic mail) 10 \_\_\_\_\_ (for producing manuals, catalogues) . The operator 11. \_\_\_\_\_ the information which can be 12. \_\_\_\_\_ and 13. \_\_\_\_\_ at a later date.

Most businesses nowadays use 14. \_\_\_\_\_ or PCs, which are often linked together in a local 15. \_\_\_\_\_. This is a big change from the days when time had to be rented on a 16. \_\_\_\_\_. Nowadays these are only used by very large businesses, universities, or Government departments. The most popular types of computers currently are those of IBM and Apple (the Macintosh). It was IBM who set the standard for the PC which others later imitated. That is why, in order to be able to use the widest range of software, a computer has to be 17. \_\_\_\_\_.

**Ex. 15. FIND THE WORDS in list B which are opposite in meaning to the ones in list A.**  
**Use them to complete the sentences. For example: *The opposite of turn on is turn off.***

**A**

1. The opposite of add is \_\_\_\_\_
2. The opposite of authorize is \_\_\_\_\_
3. The opposite of automated is \_\_\_\_\_
4. The opposite of backward is \_\_\_\_\_
5. The opposite of boot up is \_\_\_\_\_
6. The opposite of character based is \_\_\_\_\_
7. The opposite of column is \_\_\_\_\_
8. The opposite of confirm is \_\_\_\_\_
9. The opposite of contiguous is \_\_\_\_\_
10. The opposite of continue is \_\_\_\_\_
11. The opposite of delete is \_\_\_\_\_
12. The opposite of flexible is \_\_\_\_\_
13. The opposite of hardware is \_\_\_\_\_
14. The opposite of infinite is \_\_\_\_\_
15. The opposite of landscape is \_\_\_\_\_
16. The opposite of monospaced is \_\_\_\_\_
17. The opposite of multiply is \_\_\_\_\_
18. The opposite of open is \_\_\_\_\_
19. The opposite of parallel is \_\_\_\_\_
20. The opposite of physical is \_\_\_\_\_
21. The opposite of problem is \_\_\_\_\_
22. The opposite of simplex is \_\_\_\_\_
23. The opposite of simple is \_\_\_\_\_
24. The opposite of single is \_\_\_\_\_
25. The opposite of transmit is \_\_\_\_\_

**B**

cancel  
close  
closed  
complicated  
divide  
duplex  
forbid  
forward  
fragmented  
graphical  
interrupt  
manual  
multiple  
portrait  
proportional  
receive  
restore  
rigid  
row  
serial  
shut down  
software  
solution  
subtract  
virtual

**Ex. 16. Change the following statement to questions beginning with the question words given in brackets.**

1. We are reading an error message on the screen (where?)  
\_\_\_\_\_
2. I am typing the name of the program on the keyboard to run it (why?).  
\_\_\_\_\_
3. The operational system was asking to point out the date and the time (what?).  
\_\_\_\_\_
4. They were working in the computer room from 8 till 9.30 yesterday (how long?).  
\_\_\_\_\_
5. They will be holding a conference at this time tomorrow (when?).  
\_\_\_\_\_
6. The lecturer was speaking about new types of digital computers (who?).  
\_\_\_\_\_
7. We shall be discussing types of printers at 5 o'clock tomorrow (what?).  
\_\_\_\_\_

**Ex. 17. Find Russian variant to the following words and expressions.**

input		to erase	
output		to insert	
memory		buffer	
processor		irrevocable	
keyboard		failure	
screen		spreadsheet	
printer		working/current drive	
mouse		to import	
installation		formatted page	
database		typing/edit mode	
tool		command mode	
cursor		to switch modes	
button		command field	
click		arrow keys	
to glide		to highlight a command name	
to track		file management	
to specify		the command runs	
to rotate		application	
to respond		software	
switch		file directory	
to delete		hardware	
keystroke		valid	

**Ex. 18. Fill in the missing words.**

Valid, uses, computer, processor, database, spare parts, keyboard, publishing software

1. Our company \_\_\_\_\_ computers in its offices.
2. If the equipment breaks down the service engineer can supply \_\_\_\_\_
3. The personnel manager keeps a \_\_\_\_\_ about all our employees.
4. The command or file name you have entered is not \_\_\_\_\_
5. A modern office uses \_\_\_\_\_ instead of typewriters.
6. \_\_\_\_\_ allows people to work with texts, graphics and images.
7. Earlier the most common device to transfer information from the user to the computer was \_\_\_\_\_
8. The words "computer" and \_\_\_\_\_ are often used interchangeably.

**READING COMPREHENSION**

**Ex. 19. Find the false sentences and correct them using the information from the text.**

1. All computers use different basic techniques for doing the tasks we give them.
2. Output is the process of entering data into the computer.
3. Computer keyboards include alphabet keys.
4. Once data is in a microcomputer, it is processed by the scanner.
5. Microprocessors do all calculations and manipulations necessary to transform data into meaningful information.
6. Getting processed data out of the computer is the job of a plotter.
7. Microcomputers use disks to store data magnetically.
8. Three types of software are necessary to make the computer capable of performing useful work.
9. There are seven most common types of application software.

**Ex. 20. Write questions to the answers.**

1. Input is the process of entering data into the computer.
2. A scanner reads graphic images and pages of text and sends them to the computer.
3. Storage devices hold data permanently.
4. Application software is what makes computer a tool for performing the tasks we most often need at school, a home, or at office.
5. Data is stored magnetically.

**Ex. 21. Answer the questions.**

1. Do all computers use the same basic techniques for doing the tasks we give them?
2. What is software?
3. What is data?
4. What is computer cycle?
5. What is a mouse?
6. What does the operating system contain?
7. What does computer need to perform tasks in addition to the operating system?
8. What are the most common types of application software?
9. Can software be a single program or a set of programs that work together?

**Ex.22. Decode and explain the meaning of the following words.**

**CPU, RAM, ROM, PC, CD, GUI, VDU**

**Ex. 23. Think and explain what all the following devices are necessary for.**

Mouse	keyboard
Printer	floppy-disc
Modem	monitor
Plotter	light-pen
Scanner	microprocessor

## **SPEAKING**

**Ex. 24. Read the dialogue and**

- 1) point out the first steps in computer's work;**
- 2) say what a user must do to run a program.**

to have a vague idea — смутно представлять себе

I'd like — я хотел бы

to replace each other — сменять друг друга

to run a program — запустить программу

a directory — директория, справочник

A: Hallo, Mike! Where are you going?

M: Hallo, Alan! Haven't seen you for ages. I am going to the computer room.

A: Oh, you, students of the Information Science Department, work much in the computer room.

M: You are right. We must spend much time with the computer to become good specialists. But you, students of the Philological Department, also read much to become good teachers, don't you?

A: I agree with you. But we have a vague idea what the computer is. I'd like to go with you and see how a computer will be operating.

M: O.K. Let's go together. (In the computer room.)

M: Have a seat, please, near this personal computer. First of all, we must switch the disk drive and the system unit on.

A: Oh, I see digits are replacing each other on the screen. What does it mean?

M: It means that the computer is testing its basic units: a keyboard, a screen, and primary memory. We call this process self-testing. A special program is controlling this self-testing now.

A: And now I see the message "NON-SYSTEM DISK OR DISK ERROR". What is it?

M: It means, there is a diskette in the disk drive, but there is no operational system on it. The user must put the necessary diskette in the disk drive, press any key, and repeat.

A: As far as I understand the process of loading is the next step, isn't it?

M: That's it. After self-testing the computer begins to load the operational system from the diskette.

A: And how shall we know when the process of loading is over?

M: There will be special messages on the screen. Some of them are questions to the user. Well, look, now operational system is asking to point out the date and the time.

A: And what must the user do to run a program?



M: The user must put the diskette in the disk drive; then type the name of the program on the keyboard and press the key "ENTER".  
 A: But why are you typing "DIR" now ?  
 M: I want to be sure that there is really the program I need on the diskette. Now you see there is a directory: diskette files on the screen. Each file has its name, the length in Kbytes, the date and the time of its creation.  
 A: So you must find the name of the program, mustn't you?  
 M: You are quite right. Now you see the necessary program is running.  
 A: Thank you very much for your computer lesson. I'm sorry, I'm afraid to be late for my English class. So long!  
 M: Glad to help you. See you.

**Ex. 25. Read the beginning of the dialogue. Finish it with your own version.**

A: Hello, Nick! Where are you going?  
 N: Hello, Adam! I'm going to the reading room to read up for the seminar.  
 A: Oh, I'm going to the reading room too. I want to finish my report on computer's hardware.  
 N: I'd like to ask you some questions about computers.  
 A: You are welcome.

**Ex. 26. Say if these sentences are true or false.**

1. The processor coordinates the activities of the various components of the computer.
2. All computer systems contain both a keyboard and a mouse.
3. The mouse has three buttons which control the cursor movement across the screen.
4. One should necessarily edit all the texts before printing them.
5. Microsoft Word is a perfect word processing program and publishing program.
6. Computers create more work.
7. Computer systems do not always function.
8. People begin to feel like machines.

**FOCUS ON GRAMMAR**

**Ex. 27. Change the sentences, active to passive, passive to active.**

- |  |   |
|--|---|
| 1. Computers have decreased man's workload.                          | 1. Man's workload _____ by computers.                           |
| 2. Nowadays we are constantly using microcomputers in everyday life. | 2. Nowadays microcomputers _____ in everyday life.              |
| 3. Computers _____ results quickly and accurately.                   | 3. Results can be provided quickly and accurately by computers. |
| 4. A computer will process this information very rapidly.            | 4. This information _ _____ rapidly by a computer.              |
| 5. The imagination of man _____ a computer in its ability.           | 5. A computer is limited in ability by the imagination of man.  |
| 6. We often thought of computers as large adding machines.           | 6. Computers _____ as large adding machines.                    |
| 7. Integrated circuits _____ computers.                              | 7. Computers have been further changed by integrated circuits.  |
| 8. The scientists are developing new computer technology.            | 8. New computer technology _____ by scientists.                 |

**Ex. 28. Change the sentences in the passive voice according to the model.**

**Model:** They speak English in Canada. — English is spoken in Canada.

1. They produce these computers in Japan. 2. The famous Russian scientist M. V. Lomonosov compiled a lot of calculating tables. 3. A well-known scientist will address the conference. 4. He is typing the name of the file now. 5. W. Oughtred had constructed the first slide-rule by 1630. 6. B. Pascal built an adding machine in 1642. 7. Very large-scale integration technologies will have reduced the size of computers by the end of the century. 8. They have already discussed the problems of artificial intelligence. 9. We were carrying out experiments when you came in. 10. We shall place the plus sign between these numerals. 11. People have used punched cards since the earliest days. 12. The presence of the CONTROL key allows each letter key to have one more meaning.

**Ex. 29. Open the brackets, put the required tense and voice form.**

1. The instructions (to record) in the order in which they are to be carried out. 2. Many new branches of industry (to develop) in our country since World War II. 3. The concept of the stored program (to work out) by J. Neuman in 1945. 4. The constituent parts of the computer (to call) hardware. 5. We (to hold) the conference next week. 6. A new program (to compile) when I came. 7. All these calculations (to do) by 5 o'clock yesterday. 8. The scientist just (to complete) this experiment. 9. The information (to collect) by the end of the next week. 10. This examination (to take) tomorrow. 11. Your papers (to type) now. Wait a minute. 12. Nobody (to test) this computer's basic units now. 13. A new input device (to discuss) when we came. 14. A new model of the printer (to show) tomorrow. 15. Microcomputers (to apply) since the 1970s. 16. This journal (to publish) the article by May. 17. Only one branch of a program should (to select) on each occasion. 18. "Connector" symbols (to use) to show the exit to or the entry from another point in the same flowchart. 19. We (not to speak) about the invention of computers at the next lecture. 20. What program ... you (to load) now?

**PROBLEM SOLVING**

**Ex.30. Prove the following statements using the information of the text and your background knowledge. Use the of the list of expressions: *that's right; quite so; I agree; I suppose no; I won't deny that ...***

1. A computer stores and manipulates binary representations in primary memory and records the results in secondary memory.
2. Internal memory is a term for primary memory.
3. Secondary memory is called external memory.
4. Hard disks can store much more information than floppy disks.
5. Although the computer can represent any kind of information it is necessary to tell the computer what kind of information it is currently representing.
6. The computer manipulates data of different types in different ways.

**Ex. 31 Study this List of needs. Which type of peripheral and software would you advise in each case?**

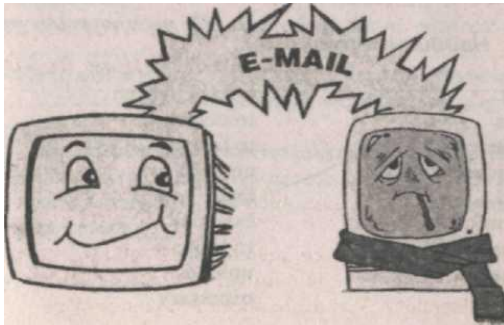
- 1 inputting printed graphics
- 2 building cars
- 3 controlling the screen cursor in a fast action game
- 4 making choices on a screen in a public information terminal
- 5 recording moving images
- 6 recording a book loan in a library

- 7 printing very high quality text and graphics
- 8 creating drawings
- 9 printing building plan drawings
- 10 recording sound
- 11 listening to music without disturbing others
- 12 storing programs and data
- 13 inputting a lot of text
- 14 backing up large quantities of data

## UNIT 4

### COMPUTER VIRUSES

#### WARMING UP



"Within two years, computer viruses will affect - directly or indirectly - up to eight million PCs" predicts Dr. Peter Tippet, president of US software house Foundation Ware.

Using mathematical and epidemiological models of virus replication, scientists concluded that the number of PCs infected is doubling every two months.

So, you will just have to do your best to keep risks to a minimum. To do that it is a good idea to:

- regularly backup your data;
- make sure you always start your computer from the hard disc (it has one) or a write protected copy of your MS DOS master disc;
- ensure that programs downloaded from communications systems are saved onto floppy discs (rather than your hard disc) so you can check them for viruses before running them;
- where possible, use utility software to activate the "read-only" file attribute on all program files so that viruses can not act upon them;
- use virus detection software on any software you receive.

1. How many computers can viruses affect a year?
2. Are viruses highly widespread or not?
3. What is necessary to do to avoid your computer to be infected?
4. What is a computer virus?
5. How does a virus work?

#### ACTIVE VOCABULARY LIST

- |  |   |
|--|---|
| 1. a virus –<br><i>the virus code;</i><br><i>macro viruses;</i><br><i>anti-virus software;</i>               | 6. to damage –<br><i>to damage software;</i><br><i>serious(severe) damage;</i>  |
| 2. a host –<br><i>types of hosts;</i><br><i>the host program;</i>  | 7. to destroy –<br><i>to destroy hardware;</i><br><i>destruction of computer programs;</i><br><i>destructive virus;</i> |
| 3. malware = malicious software<br><i>to create malware;</i>   | 8. to facilitate –<br><i>to facilitate the development;</i>   |
| 4. target –<br><i>target computer;</i><br><i>the most common targets;</i>                                    | 9. to infect –<br><i>to infect a file;</i><br><i>the problem of infection;</i><br><i>infected program;</i>              |
| 5. to boot –<br><i>to boot the computer</i><br><i>boot disk</i><br><i>boot sector;</i><br><i>boot virus;</i> | 10. to insert -<br><i>to insert copies;</i><br><i>to insert deliberately;</i><br><i>the insertion of a virus;</i>       |

11. *to release* –  
to release computer viruses;  
to release mouse button;  
news release;

12. *to replicate* –  
replicated copy;  
self-replicating program;  
virus replication;

13. *to spread* –  
to spread on floppy disks;  
the spread of viruses;  
widespread computer networks;

14. *to update* –  
to update software;  
update file;  
updated program;

## VOCABULARY TASKS

**Ex. 1. Look at the following pairs of words and try to find similar ones among your new active vocabulary.**

*verb-----noun*

to copy – copy  
to file – file

to delete - deletion  
to decorate – decoration

**Ex. 2. Look through your active vocabulary and find words with similar meaning.**

to reproduce -  
to contaminate –  
to extent –  
to download -  
to modernize -

to install oneself -  
harmful software -  
landlord -  
aim –  
destroying –

**Ex. 3. Which six of these verbs are defined below?**

*To damage, to destroy, to facilitate, to infect, to insert, to release, to replicate, to spread.*

1. to affect with disease;
2. to do harm to or to injure;
3. to put or place into or between smth;
4. to extinguish or reduce to uselessness;
5. to make easy, to help;
6. to produce or put out;

**Ex.4. Join the following two columns to make meaningful combinations of words.**

to damage  
to destroy  
to facilitate  
to infect  
to insert  
to release  
to replicate  
to spread

copies  
computer viruses  
software  
files  
hardware  
the development  
mouse button  
macro viruses

**Ex. 5. Use the following words to complete the sentences below.**

***Viruses; computer virus; targets; anti-virus software; malware; the host program; boot sector.***

1. Boot viruses install themselves into the disc ... .
2. The secretary asked the computer expert to scan her computer for ... .
3. A lot of users install ... that can detect and delete viruses.
4. A virus can insert a copy of its code into the code of ... .
5. Operating system and application software are the most common ... of viruses.
6. Some programmers create and spread ... .
7. The first ... was created in 1982 by Rich Skrenta.

**Ex. 6. In each sentence make a word to fill the space, using the word given.**

1. Boot viruses run when the user ... the computer from the infected disk. (to boot)
2. Before computer networks became ..., most viruses spread on floppy disks. (to spread)
3. The Internet ... the spread of viruses. (to facilitate)
4. A virus can spread from one computer to another when its host is taken to the ... computer. (to infect)
5. Some viruses can be ..., for example, by destroying data. (to destroy)
6. In computer security technology, a virus is a ... program. (to replicate)
7. The ... of the virus into a program is called infection. (to insert)
8. The ... file is called a host. (to infect)
9. Software is directly ... by viruses. (to damage)
10. Anti-virus software should be ... in order to get knowledge about the latest viruses. (to update)

**READING**

**TEXT 1**

*Cell* - клетка

*Delayed payload* – отсроченное действие

*To trigger* – инициировать, приводить в действие

*Malicious intent* – враждебное намерение

*Detection* - выявление, обнаружение

*To warn* - предупреждать

*Threat* - угроза

In computer security technology, a **virus** is a self-replicating program that spreads by inserting copies of itself into other code or documents. So a computer virus behaves similar to a biological virus, which spreads by inserting itself into living *cells*. The insertion of the virus into a program is called infection, and the infected file is called a host.

While some viruses can be destructive (for example, by destroying data), many other viruses are merely annoying. Some viruses have a *delayed payload*, which is sometimes called a bomb. For example, a virus might display a message on a specific day or wait until it has infected a certain number of hosts. A time bomb occurs during a particular date or time, and a logic bomb occurs when the user of a computer takes an action that *triggers* the bomb. However, the most negative effect of viruses is their uncontrolled self-reproduction, which wastes computer resources.

A virus can only spread from one computer to another when its host is taken to the uninfected computer, for example by a user sending it over a network or carrying it on a removable disk. Viruses can also spread to other computers by infecting files on a network file system or a file system that is accessed by another computer. Many personal computers are now

connected to the Internet and to local-area networks, and this facilitates the spread of viruses. Today's viruses may also use network services such as the World Wide Web, e-mail.

Viruses can infect different types of hosts. The most common targets are files that contain application software or parts of the operating system. Viruses can infect files in other ways than simply inserting a copy of their code into the code of the host program. For example, a virus can overwrite its host with the virus code. Viruses have existed for many different operating systems, including MS-DOS, AmigaOS, and Mac OS; today, the majority of viruses run on Microsoft Windows.

A program called "Elk Cloner" is the first computer virus. Written in 1982 by Rich Skrenta, it attached itself to the Apple DOS 3.3 operating system and spread by floppy disk.

Before computer networks became widespread, most viruses spread on floppy disks. In the early days of personal computers, many users regularly exchanged information and programs on floppies. Some viruses spread by infecting programs stored on these disks, while others installed themselves into the disk boot sector, ensuring that they would be run when the user booted the computer from the disk.

Online software exchange became popular in the late 1980s and early 1990s, more viruses were written to infect popularly sold software.

Since the mid-1990s, macro viruses have become common. Most of these viruses are written in the scripting languages for Microsoft programs such as Word and Outlook. These viruses spread in the Microsoft Windows monoculture by infecting documents and sending infected e-mail.

Unlike biological viruses, computer viruses do not develop by themselves, except in the cases where copying errors and recombination have lead to actual evolution of computer viruses. They cannot come into existence spontaneously, nor can they be created by bugs in regular programs. They are *deliberately* created by programmers, or by people who use virus creation software.

Virus writers can have various reasons for creating and spreading malware. Viruses have been written as research projects, jokes, vandalism, to attack the products of specific companies, and to distribute political messages. Some people think that most viruses are created with *malicious intent*. On the other hand, some virus writers consider their creations to be works of art, and see virus writing as a creative hobby. Some viruses were intended as "good viruses". They spread improvements to the programs they infect, or delete other viruses. These viruses are, however, quite seldom, still consume system resources, may accidentally damage systems they infect. Releasing computer viruses is a crime in most countries.

Many users install anti-virus software that can detect and delete known viruses after the computer downloads. Some virus scanners can also warn a user if a file is likely to contain a virus based on the file type. Anti-virus software does not change the capability of host software to transmit viruses. So users must update their software regularly to avoid security holes. Anti-virus software also needs to be updated in order to get knowledge about the latest *threats*.

## WORD STUDY

### Ex. 7. Find in the text English equivalents of the following words and expressions.

Выявление (обнаружение); загрузочный вирус; носитель; заражение; самовоспроизводящаяся программа; деструктивный; гибкий диск; произведение искусства, создавать вирусы, предупреждать, обновлять, угроза, повреждать, истощать ресурсы компьютера, съёмный диск, переписать программу-носитель, уничтожать другие вирусы; не возникают самопроизвольно.

**Ex. 8. Fill in the missing words.**

\_\_\_\_\_ is a crime in most countries.

Unlike biological viruses, computer viruses -----by themselves.

Virus writers can have various -----for creating and spreading malware.

The insertion of the virus into a program is called \_\_\_\_\_, and the infected file is called a \_\_\_\_\_

Some viruses have a \_\_\_\_\_, which is sometimes called a bomb.

Since the mid-1990s, -----have become common.

A time bomb occurs during a particular \_\_\_\_\_, and a logic bomb occurs when the user of a computer takes an action that \_\_\_\_\_ the bomb.

Many personal computers are now connected to the Internet and to local-area networks and this \_\_\_\_\_ the spread of viruses.

A virus can overwrite its host with the \_\_\_\_\_.

Online software -----became popular in the late 1980s and early 1990s.

**Ex. 9. Match the words from column A with column B.**

A	B
1. to scan the diskette for viruses	a. файловый вирус (вирус, поражающий файлы )
2. boot virus	b. вирус, воздействующий на аппаратные средства
3. hardware virus	c. "компанейский" вирус (не присоединяющийся к существующему файлу, а создающий новый скрытый файл)
4. COM virus	d. многокомпонентный вирус ( поражающий и файл, и загрузочный сектор )
5. companion virus	e. самошифрующийся вирус
6. file virus	f. вирус-невидимка ( маскирующий присутствие своей копии в тестируемом файле )
7. multipartite virus	g. туннельный вирус ( прячущийся в нижней области памяти )
8. memory-resident virus	h. штамм (компьютерного) вируса (видоизмененная копия оригинального вируса )
9. self-encrypting virus	i. код вируса
10. stealth virus	j. вирус, поражающий файлы с расширением .com
11. tunneling virus	k. проверить дискету на вирусы
12. virus strain	l. резидентный вирус
13. virus-carrying code	m. загрузочный вирус

**READING COMPREHENSION**

**Ex.10. Look through the text and explain in English the meaning of the words:**

- 1) a virus;
- 2) a host;
- 3) infection;
- 4) a bomb;
- 5) a good virus;
- 6) anti-virus software.



**Ex. 11. Look through the text quickly. Find the paragraphs which deal with...**

1. The history of viruses.
2. The explanation of the notion of a virus.
3. Reasons for creating viruses.
4. Anti-virus software.
5. How viruses spread.

**Ex. 12. Match the beginnings with the endings.**

1. Viruses can infect ...
  2. Today, the majority of viruses run on ...
  3. The most common targets of viruses are ...
  4. The most negative effect of viruses is ...
  5. A virus can spread from one computer to another ...
  6. Before computer networks became widespread ...
- a. ... when its host is taken to the uninfected computer.
  - b. ... most viruses spread on floppy disks.
  - c. ... different types of hosts.
  - d. ... Microsoft Windows.
  - e. ... their uncontrolled self-reproduction.
  - f. ... files that contain application software or parts of the operating system.

**Ex.13. Correct the false sentences according to the text.**

1. Computer viruses behave similar to biological viruses.
2. The insertion of the virus into a program is called destruction.
3. Some viruses are destructive, while many other viruses can be merely annoying.
4. A logic bomb occurs during a particular date or time.
5. Viruses cannot use such network service as e-mail.
6. A virus can overwrite its host with the virus code.
7. In the early days of personal computers, many users regularly exchanged information and programs online.
8. Computer viruses usually develop by themselves and come into existence spontaneously.
9. Releasing computer viruses is a crime in most countries.

**Ex. 14. Find in the text the information about the history of the appearance and development of viruses. Choose 4-5 main sentences that reflect this information.**

**Ex. 15. Make up questions to which the following statements can be answers.**

1. Releasing computer viruses is a crime in most countries.
2. Viruses are *deliberately* created by programmers, or by people who use virus creation software.
3. Viruses have been written as research projects, jokes, vandalism, to attack the products of specific companies, and to distribute political messages.
4. Unlike biological viruses, computer viruses do not develop by themselves.
5. Virus writers can have various reasons for creating and spreading malware.

**Ex. 16. Look through the last paragraph of the text and say what users can do to avoid viruses.**

**Ex. 17. Answer the following questions.**

1. What is a virus in computer security technology?
2. How is the insertion of the virus into a program called?
3. What is a host?
4. Are all the viruses destructive?
5. What is the most negative effect of viruses?
6. How can a virus spread from one computer to another?
7. Can viruses spread to other computers by other ways?
8. What facilitates the spread of viruses?
9. What network systems may today's viruses use?
10. Can viruses infect different types of hosts?
11. What are the most common targets of viruses?
12. When was the first computer virus created?
13. How did most viruses spread before computer networks became widespread?
14. What happened in the late 1980s and early 1990s?
15. Since the mid-1990s, macro viruses have become common, haven't they?
16. Don't computer or biological viruses develop by themselves?
17. Whom are viruses created by?
18. What reasons can virus writers have for creating and spreading malware?
19. Is releasing computer viruses a crime in most countries?
20. Why do many users install anti-virus software?
21. What doesn't anti-virus software change?
22. Why does anti-virus software need to be updated?

**READING**

**TEXT2**

**Computer Viruses**

2 November 1988 Robert Morris younger (Robert Morris), graduate student of informatics faculty of Cornell University (USA) infected a great amount of computers, connected to the Internet network. This network unites machines of university centers, private companies and governmental agents, including National Aeronautics Space Administration, as well as some military scientific centers and labs.

Network worm has struck 6200 machines that formed 7,3% computers to network, and has shown, that UNIX is not okay too. Amongst damaged organizations were NASA, LosAlamos National Lab, exploratory center VMS USA, California Technology Institute, and Wisconsin University (200 from 300 systems). Spread on networks ApraNet, MilNet, Science Internet, NSF Net it has practically removed these networks from building. According to "Wall Street Journal", virus has infiltrated networks in Europe and Australia, where there were also registered events of blocking the computers.

All of Vaxen and some of Suns here were infected with the virus. The virus forks repeated copies of themselves as they try to spread themselves, and the load averages on the infected machines skyrocketed. The virus also "cleaned" up after itself. If you reboot an infected machine (or it crashes), the temp directory is normally cleaned up on reboot. The other incriminating files were already deleted by the virus itself.

So what is a computer virus?

It is an executable code able to reproduce itself. Viruses are an area of pure programming, and, unlike other computer programs, carry intellectual functions on protection from being found and

destroyed. They have to fight for survival in complex conditions of conflicting computer systems. That's why they evolve as if they were alive.

Yes, viruses seem to be the only alive organisms in the computer environment, and yet another their main goal is survival. That is why they may have complex encrypting/decrypting engines, which are indeed a sort of a standard for computer viruses nowadays, in order to carry out processes of duplicating, adaptation and disguise

It is necessary to differentiate between reproducing programs and Trojan horses. Reproducing programs will not necessarily harm your system because they are aimed at producing as many copies of their own as possible by means of so-called agent programs or without their help. In the later case they are referred to as "worms".

Meanwhile Trojan horses are programs aimed at causing harm or damage to PC's. Certainly it's a usual practice, when they are part of "tech-organism", but they have completely different functions. That is an important point. Destructive actions are not an integral part of the virus by default. However virus-writers allow presence of destructive mechanisms as an active protection from finding and destroying their creatures, as well as a response to the attitude of society to viruses and their authors.

As you see, there are different types of viruses, and they have already been separated into classes and categories. For instance: dangerous, harmless, and very dangerous. No destruction means a harmless one, tricks with system halts means a dangerous one, and finally with a devastating destruction means a very dangerous virus.

But viruses are famous not only for their destructive actions, but also for their special effects, which are almost impossible to classify. Some virus-writers suggest the following: funny, very funny and sad or melancholy (keeps silence and infects). But one should remember that special effects must occur only after a certain number of contaminations. Users should also be given a chance to restrict execution of destructive actions, such as deleting files, formatting hard disks. Thereby virus can be considered to be a useful program, keeping a check on system changes and preventing any surprises such as of deletion of files or wiping out hard disks.

It sounds quite heretical to say such words about viruses, which are usually considered to be a disaster. The less person understands in programming and virology, the greater influence will have on him possibility of being infected with a virus.

## **WORD STUDY**

**Ex.18. Make a list of unknown words from the text (10-15) and translate them into Russian.**

**Ex.19. Make up 5-7 sentences using the words from ex. 1, give their Russian equivalents.**

**Ex.20. Translate into English.**

Распространяться по сети, поврежденные машины, самовоспроизводящиеся программы, паразитические разрушения, порча данных, ограничить выполнение, форматирование жесткого диска, контролировать системные изменения.

**Ex.21. Fill in the missing words.**

1. Spread on \_\_\_\_\_ ApraNet, MilNet, Science Internet, NSF Net it practically has removed these networks from \_\_\_\_\_.
2. \_\_\_\_\_ are not an integral part of the virus by default.

3. If you \_\_\_\_\_ an infected machine, the temp directory is normally cleaned up on reboot.
4. Virus-writers allow presence of \_\_\_\_\_ as an active protection from finding and destroying their creatures.
5. Viruses are famous not only for their destructive actions, but also for their special \_\_\_\_\_, which are almost impossible to \_\_\_\_\_.
6. Special effects must occur only after a certain number of \_\_\_\_\_.
7. Trojan horses have completely different \_\_\_\_\_.

**Ex. 22. Translate into English.**

1. Развитие локальных и глобальных сетей способствовало возникновению обширных баз данных.
2. Если вы будете регулярно обновлять антивирусное программное обеспечение, оно сможет выявить и уничтожить вирусы, проникающие в ваш компьютер.
3. Не все вирусы являются разрушительными, некоторые просто раздражают.
4. Является ли создание и распространение вредоносного программного обеспечения преступлением в нашей стране?
5. В наши дни вирусы широко распространены, они передаются по сети и на любых съемных носителях.
6. Многие вирусы были созданы просто шутки ради.
7. Какое антивирусное ПО вы установили?
8. К сожалению вирусы могут инфицировать разные типы носителей.

**READING COMPREHENSION**

**Ex. 23. Answer the questions.**

1. What does the Internet network unite?
2. Can you define a computer virus?
3. What types of computer viruses do you know?
4. How do "worms" work?
5. What are Trojan horses aimed at?
6. What classifications of viruses were mentioned in the text?
7. Can a virus be a useful program?

**Ex.24. Make up 5-7 questions to the text and ask your fellow-student to answer them.**

**Ex. 25. Give a short summary of the text.**

**LISTENING AND SPEAKING**

**Ex.26.Listen to the dialogue and try to fill in the missing words:**

RICHARD: Hi, Steve. Are you busy?

STEVE: No, not really.

R: Good. If you've got a minute, I'd like to talk to you about ... .. I saw a program on TV the other evening about ... .. It made me realize that our ... .. isn't very secure. We have a lot of sensitive information in our data bank, and I think perhaps we should install some kind of system to ... it.

S: That's a good point. Theoretically, anyone could call in and connect their ... .. at home to the ... .. All they'd need is a ... .

R: Exactly. There's nothing to stop students calling in and changing their grades, for example. They could even change their records to show that they'd paid for a course when they hadn't.

S: Hmm. What we need is a ...

R: Yes, but the problem with ... is what people do with them. Some put them on scraps of paper on their ... Others use their own names, or a partner's name. That just makes life easy for a ...

S: True, but it's not just what people do with them. The whole idea of using real words is risky. There are ... now that will try every word in the dictionary. If you want to make life difficult for the ... , it's much ... to use a random mixture of numbers and letters.

R: I suppose so. But isn't it possible to buy a ... ?

S: Of course. It depends how much you want to spend. You can even buy a system that changes the ... every single minute.

R: Every minute? Then how do the authorized ... know what the ... is?

S: They carry a smart ... that shows a constantly changing number. The number is the ...

R: Very clever!

S: Yes, as long as you don't leave your card lying around.

**You may check your answers looking through the typescript of this dialogue at page 89 (see appendix)**

**Ex.27. Answer the questions:**

1. Is the network system secure?
2. What can students change in a company's data bank?
3. What do you need to connect your computer to the network?
4. What is the problem with passwords?
5. Why is it dangerous to use real word as a password?
6. What is the best word for a password?
7. What does a smart card show?

**Ex.28. Make up one of the following situations:**

- a) Give your friend some instructions on computer security; help him/her to avoid infection.
- b) Your friend is rather light-headed about passwords; tell him/her about it. Suggest some ideas what should be used as a password, what shouldn't. Explain why.

**FOCUS ON GRAMMAR**

**Ex. 29. Change the following sentences from direct to reported speech.**

1. His little brother asked Nick, "Do computer viruses behave similar to biological viruses?"
2. She said, "I was sure that computer viruses cannot damage hardware."
3. "Have macro viruses become common since the mid 1990s or 1980s?" he whispered to his friend.
4. My friend complained to me, "I have been printing on computer since morning and I'm having headache at the moment. Can you help and print something for me?"
5. "When was the first computer virus created?" the teacher asked.
6. Boris said, "I used the infected program yesterday and the virus had spread, before I could do anything."
7. He said, "Some people think that most viruses are created with malicious intent."

8. Molly asked her friend, "Please, install anti-virus software on my computer."
9. She asked the teacher, "Were some viruses really created as "good viruses"?"
10. "Some viruses have a delayed payload, don't they?" the student asked.
11. The teacher asked them, "When did users exchange information and programs on floppies?"
12. The computer expert warned us, "You must update your software regularly to avoid security holes."

**Ex. 30. Choose the tense-form in the right column you would use translating the sentences.**

1. Покупатели сказали, что они заинтересованы в покупке этих машин	a) are interested b) were interested c) have been interested
2. Директор заверил клиентов, что они получат готовую версию программы через неделю.	a) would get b) would have got c) will get
3. Секретарь сказала боссу, что она уже назначила встречу с представителем фирмы	a) will make an appointment b) have already made an appointment c) had already made an appointment
4. Он сказал, что это оборудование тестируют сейчас	a) is testing b) was being tested c) was been testing
5. Она сказала, что они обсуждали эти вопросы вчера	a) discussed b) was discussed c) had discussed
6. Мой друг сказал, что вирус уже проник в систему	a) had already entered b) entered c) have already entered
7. Системный администратор сказал, что он постоянно обновляет антивирусные базы.	a) is updating b) undated c) updates
8. Директор сказал, что сотрудники сейчас разрабатывают новое программное обеспечение	a) are developing b) has been developing c) were developing
9. Инженер сказал, что он выяснил все вопросы с фирмой вчера.	a) cleared up b) clears up c) had cleared up
10. Представитель фирмы сказал, что они пригласят эксперта по компьютерной безопасности на следующей неделе.	a) will invite b) would invite c) will have invited

## PROBLEM SOLVING

**Ex. 31 Work in small groups. Discuss the following questions. Then compare your answers with the other groups' ones.**

- I. How are computer viruses like biological viruses?
2. What is the effect of a virus patching the operating system?
3. Why are some viruses designed to be loaded into memory?
4. What examples of payload does the writer provide?
5. What kind of programs do viruses often attach to?
6. How does a Trojan differ from a virus?

## UNIT 5

### COMPUTER CRIME

#### WARMING UP

Discuss these questions:

1. Where and when do you use passwords or codes in everyday life. (Make sure you don't tell anyone your passwords accidentally!)
2. Why is computer security important?
3. How could you use a computer to commit a crime?

#### ACTIVE VOCABULARY LIST

- |   |  |
|---|--|
| 1. <i>acquisition</i> -<br><i>acquisition of knowledge</i> -<br><i>data acquisition</i> -<br><i>image acquisition</i> - | 9. <i>transaction</i> -<br><i>to conduct transactions</i> -<br><i>business transactions</i> -<br><i>transaction processing</i> -                         |
| 2. <i>blackmail</i> -<br><i>to practice blackmail</i> -   | 10. <i>to encrypt</i> -<br><i>to decrypt</i> -<br><i>encryption</i> -<br><i>private key encryption</i> -   |
| 3. <i>crime</i> -<br><i>to charge with crime</i> -<br><i>to commit a crime</i> -<br><i>organized crime</i>              | 11. <i>to gain</i> -<br><i>to gain confidence of smb.</i> -<br><i>to gain experience</i> -<br><i>to gain one's point</i> -<br><i>to gain an access</i> - |
| 4. <i>embezzlement</i> -<br><i>embezzlement of public funds</i> -   | 12. <i>to steal</i> -<br><i>to steal smth. from smb</i> -  |
| 5. <i>fraud</i> -<br><i>to expose a fraud</i> -<br><i>wire fraud</i> -  | 13. <i>to transmit</i> -   |
| 6. <i>forgery</i> -<br><i>clever forgery</i> -<br><i>crude forgery</i> -  | 14. <i>to transfer</i> -<br><i>data transfer</i> -<br><i>document transfer</i> -<br><i>bus transfer</i> -  |
| 7. <i>hacker</i> -<br><i>to hack</i> -  |  |
| 8. <i>theft</i> -   |  |

#### VOCABULARY TASKS

**Ex.1 Find in the Vocabulary List synonyms to the words and word combinations given below.**

criminal activity	attainment
deal	to dispatch
stealing	to move
computer intruder	to obtain
deception	to code
peculation	

**Ex. 2. Study the different meanings of the following words and use them to translate the sentences.**

Transfer	v.	a) переносить, перемещать b) переводить (на другую работу, в другой отдел)
	n.	a) перевод (по службе) b) пересылка, передача перемещение данных из одного места в другое

I hope data transfer will have been completed by noon.

I've been thinking again about putting in for a transfer.

Can you transfer the goods to Leeds?

He was transferred to another department.

hack	v.	a) рубить, прорубать; кромсать; разбивать на куски b) подвергаться нападению хакеров c) for hack value ради забавы (о работе над бесполезной, но необычной программой)
	hack out	d) вырабатывать с трудом

He tried to cope with that program just for hack value.

They hacked their way through the forest.

We have instruction to hack out a new method of dealing with that kind of problem

It was discovered that a number of machines at the University of Pennsylvania had been hacked.

### Ex. 3. Match Russian and English variants.

- |                              |  |
|------------------------------|--|
| 1. bogus transaction –       | a) многостраничное сообщение   |
| 2. canned transaction –      | b) транзакция, изменяющая состояние (системы) , статусная транзакция |
| 3. memory transaction –      | c) групповая операция контроля                                       |
| 4. multipage transaction –   | d) речевое сообщение   |
| 5. multiphase transaction –  | e) ложная [фиктивная] транзакция                                     |
| 6. multiserver transaction – | f) конфиденциальное (деловое) сообщение                              |
| 7. pending transaction –     | g) запрограммированная [предусмотренная] транзакция                  |
| 8. relational transaction -  | h) транзакция с множеством обслуживающих процессов                   |
| 9. sensitive transaction –   | i) приостановленная транзакция (подлежащая дальнейшему выполнению)   |
| 10. speech transaction –     | j) транзакция в реляционном представлении                            |
| 11. status transaction –     | k) многоэтапная транзакция   |
| 12. test transaction         | l) групповая операция обращения к памяти                             |

### Ex. 4 . Which seven of these words are defined below?

**Transaction, forgery, to encrypt, to transmit, acquisition, crime, to steal, hacker, blackmail, to gain.**

- a) to attempt to influence the actions of (a person), especially by unfair pressure or threats;
- b) a computer fanatic, especially one who through a personal computer breaks into the computer system of a company, government, etc;
- c) the transmission and processing of an item of data;
- d) the act of acquiring or gaining possession;
- e) to send out (signals) by means of radio waves or along a transmission line;



- f) to take (something) from someone, etc. without permission or unlawfully;  
g) to put (computer data) into a coded form.

**Ex. 5. Join the following two columns to make meaningful combinations of words.**

To commit	experience
To encrypt	telephone signal
to deny	information
To gain	data
To steal	a computer
to leave	files
to retrieve	document
To transmit	access
to switch on	a crime
To transfer	a message

**Ex. 6. Fill in the missing words from your active vocabulary.**

1. Entering into a computer if you have no rights is a ... in any country.
2. If you don't want anybody can read information in your files, you'd better ... it.
3. As soon as you ... enough experience you'll be able to decrypt and retrieve these data.
4. .... is a kind of crime when a person deceives, makes tricks.
5. A person which ... things or information is called a thief.
6. Can these data be ....over the telephone lines.
7. He spends too much of public funds for himself, it means that he committed ...
8. I can't believe that's your boss' signature, I think it's a crude...

## READING

### TEXT 1

#### Computer crime

*restricted* - ограниченный, узкий

*illicit activity* –незаконная деятельность

*entail* - влечь за собой; вызывать что-л.

*perpetrator* - злоумышленник, нарушитель,

*deception* - обман, жульничество;

*tampering* - тайные действия

*scrambling* - перестановка элементов (изображения)

*nuisance* - помеха, неудобство, источник вреда

**Computer crime, cybercrime, e-crime, hi-tech crime or electronic crime** generally refers to criminal activity where a computer or a network is the source, tool, target, or place of a crime. These categories are not exclusive and many activities can be characterized as falling in one or more categories. Additionally, although the terms computer crime or cybercrime are more properly restricted to describing criminal activity in which the computer or a network is a necessary part of the crime, these terms are also sometimes used to include traditional crimes, such as fraud, theft, blackmail, forgery, and embezzlement, in which computers or networks are used to facilitate the illicit activity. Cyber-crime is also a major issue these days in the world as many people are hacking into the computer systems.

Most serious computer crimes, however, are committed in the banking and financial-service industries, where money, credit, and other financial assets are recorded in electronic databases and are transmitted as signals over telephone lines. Persons with access to such systems may falsify or manipulate these records for their own purposes by, for example, illegally transferring money balances to their own accounts.

Let us look at the various types of computer crimes to see what they have in common and how they differ. Investigators of computer crime generally focus on activities that entail access to the computer's hardware and software. Most such acts have in common a loss of data to the rightful owner, and often the perpetrator gains financially. But this need not be the case. Some computer crimes may even pose a threat to the national security. Such was the case when the database of the Los Alamos National Laboratory was entered.

- **Computer fraud** involves the falsification of stored data or deception in legitimate transactions by manipulation of data or programming, including the unlawful acquisition of data or programs for purposes of financial gain of the perpetrator or of a third party.

- **Computer espionage** consists of activities by which unauthorized computer access steals information for purposes of exploitation from databases belonging to government or private parties.

- **Computer sabotage** consists of the tampering with, destruction of, or scrambling of data or software by means of gaining access to data banks.

- **Computer hacking** is the act of gaining unlawful access to data banks for malicious intent, not necessarily destructive purposes, and for neither financial gain nor purposes of espionage.

- **Theft of computer time, software, and hardware** includes not only the unauthorized use of computer time and software services but also the unauthorized copying of software, and the outright theft of computer equipment.

A computer can also be a source of evidence. Even though the computer is not directly used for criminal purposes, it is an excellent device for record keeping, particularly given the power to encrypt the data. If this evidence can be obtained and decrypted, it can be of great value to criminal investigators.

So far, most known computer crimes involve manipulations for purposes of fraud or industrial espionage. But the number of computer nuisance crimes, including sabotage and hacking, has been increasing, and thefts of computer time and software are predicted to rise rapidly.

## WORD STUDY

**Ex. 7. Find in the text English equivalents of the following words and expressions.**

Способствовать незаконной деятельности, финансовые активы, место преступления, незаконное приобретение данных, промышленный шпионаж, третья сторона, взламывать компьютерные системы, потеря данных, враждебные намерения, подделывать или манипулировать записями, традиционные виды преступлений, незаконное копирование ПО, получать финансовую прибыль, угроза национальной безопасности.

**Ex. 8. Give the antonyms.**

Responsible, serious, legal, useful, industrial, expensive, strict, harm, to lose, true, public, to reduce, unauthorized,

**Ex. 9. Find the odd word.**

harm	gain	damage
crime	felony	punishment
transfer	trespass	cross
alter	insert	change
transfer	transmit	misuse
proprietary	legal	legitimate
peek	notice	look in
costly	responsible	expensive
acquire	erase	get
access	advance	improvement

**Ex. 10. Find the adjectives and/or verbs in the text to complete word combinations and write the sentences with their usage. Translate these sentences into Russian.**

*Example: data – to gain data, to encrypt data, to steal data.  
Useful data, specific data*

card, activity, database, file, crime, account, system, access, purpose, information

**Ex.11. Fill each blank with one word. Choose the word from the list.**

**Unauthorized, password, means, security, track, measure, device, particular, protected, inaccessible, information, users, equipment, access, deciphered, vandalism, computer system.**

Computer .... is the protection of computer systems and ... from harm, theft, and .... use. Computer hardware is typically... by the same means used to protect other valuable or sensitive...., namely, serial numbers, doors and locks, and alarms. The protection of information and system ..., on the other hand, is achieved through other tactics, some of them are quite complex.

The most basic ... of protecting a computer system against theft, ..., invasion of privacy, and other irresponsible behaviors is to electronically ... and record the access to, and activities of, the various ... of a computer system. This is commonly done by assigning an individual ... to each person who has access to a system. The ... itself can then automatically track the use of these passwords, recording such data as which files were accessed under ... passwords and so on. Another security ... is to store a system's data on a separate ..., or medium, such as magnetic tape or disks, that is normally ... through the computer system. Finally, data is often encrypted so that it can be ...only by holders of a singular encryption key.

**Ex. 12. Explain in English what the following words mean. Write your own examples using the given words.**

to misuse  
to gain  
to destroy  
to manipulate

acquisition  
blackmail  
malicious intent  
falsification

illegally  
unauthorized

## READING COMPREHENSION

**Ex. 13. Find the false sentences and correct them using the information from the text.**

1. The term Computer crime generally refers to criminal activity where a computer or network is the aim of a crime.
2. In traditional crimes, such as fraud, theft, blackmail, forgery, and embezzlement computers or networks are used to diminish the illicit activity.
3. Most serious computer crimes are committed in the light and food industries.
4. Some computer crimes may even pose a threat to the national security.
5. Computer hacking consists of the tampering with, destruction of, or scrambling of data or software by means of gaining access to data banks.
6. A computer can never be a source of evidence.
7. The number of thefts of computer time and software are constantly decreasing.

**Ex. 14. Match the most suitable endings (a-f) with the beginnings (1-6).**

1. Investigators of computer crime generally focus on activities...
  2. Cyber-crime is also a major issue these days in the world ...
  3. Persons with access to electronic databases may falsify or manipulate these records for their own purposes ...
  4. Most serious computer crimes are committed in the banking and financial-service industries...
  5. Even though the computer is not directly used for criminal purposes...
  6. Computer fraud involves the falsification of stored data or deception in legitimate transactions...
- a) .... that entail access to the computer's hardware and software.  
b) ... where money, credit, and other financial assets are recorded in electronic databases and are transmitted as signals over telephone lines.  
c) ...as many people are hacking into the computer systems.  
d) ... by manipulation of data or programming.  
e)...by illegally transferring money balances to their own accounts.  
f) ... it is an excellent device for record keeping.

**Ex. 15. Answer the following questions.**

1. What do we usually call a computer crime?
2. What kinds of crime do you know?
3. How can computers or networks influence traditional crimes?
4. Where are the most serious computer crimes committed?
5. What can a perpetrator do with electronic databases?
6. What is the purpose of manipulating electronic assets?
7. What are the most common features of all computer crimes?
8. What does computer espionage consist of?
9. How do we call the act of gaining unlawful access to data banks for malicious intent?
10. What does theft of computer time, software, and hardware include?
11. Does computer espionage or sabotage consist of activities by which unauthorized computer access steals information for purposes of exploitation from databases belonging to government or private parties?
12. Why can evidence by means of computer also be defined as a kind of crime?
13. What do most known computer crimes involve?
14. What kinds of crime have been increasing for the last several years?

**READING**  
**TEXT 2**

**Ex.16. Skim the article. Which of the statements below summarizes the article? Decide this as quickly as you can:**

1. The FBI is selling a computer program to businesses to help stop computer crime.
2. The FBI is giving away a computer program that it has made.
3. The FBI has just bought a computer program to sell to companies to help stop Internet crime.
4. The FBI is giving away a computer program that has been created by a computer company.
5. The FBI has created a computer program to give away to companies to help stop Internet crime.
6. The FBI has created a computer program that companies can use to find criminals.

**Ex.17. Now read the article again and translate it.**

**FBI Teams Up with Business to Fight Cyber Crime**

By Andy Sullivan

to combat -сражаться, бороться

attempt – попытка

by encouraging – поощряя

to estimate – оценивать

Denial-of-Service - отказ в обслуживании

attorney – поверенный, адвокат

to expand - расширяться

to undergo – зд. подвергаться

workshops – зд. Семинар

to swamp – засыпать, наводнять,

WASHINGTON January 5 (Reuters) - The FBI announced on Friday the completion of a program that seeks to combat cyber crime by encouraging companies to share information about Internet attacks they have experienced.

Participating companies and the FBI would use encrypted e-mail and a secure Web site to warn each other about new hacking attempts, computer viruses and other Internet-based criminal activity.

By encouraging communication among high-tech companies, the FBI hopes to reduce the impact of Internet crime, which according to one estimate takes a \$1.6 trillion annually out of the global economy.

The FBI is currently investigating 1,200 cyber crime cases, up from 450 in early 1998, said Michael Vatis, head of the FBI's National Infrastructure Protection Center.

Attorney General Janet Reno said high-tech businesses and the FBI must cooperate to fight cyber crime, and that the InfraGard program was an important step.

"This will assist individual companies in providing a stronger, better-informed first line of defense against computer attacks," Reno said.

InfraGard started as a pilot project in Cleveland in 1996. Since then it has been expanded to all 56 regional FBI offices and has attracted the participation of 500 companies. Representatives of academic computer centers and high-tech firms such as IBM sit on the board.

Participation in the program is free, Vatis said, but companies must undergo a criminal background check before they are admitted. Participating companies can remain anonymous if they desire, and are not required to share confidential information.

"That is the key to all of this, that companies can share only as much information as they want," Vatis said.

In addition to using the national online communication system, InfraGard companies can organize local activities such as seminars and workshops to better educate themselves about Internet security.

Vatis said the InfraGard system was used last fall to alert companies to the existence of "zombies", or hostile computer programs, on their servers.

Zombies are used to launch denial-of-service attacks such as the one that swamped Yahoo! and other Web sites with massive amounts of data last February.

## WORD STUDY

**Ex. 18. Match the words and word combinations with their definitions, use text 2 for assistance.**

**Cyber-crime, Internet, Data, Encryption, E-mail or electronic mail, Hacking, Secure Web site, Computer virus, Online communication system, Computer program.**

1. changing data into code to stop people from understanding the information that is sent from one computer user to another using the computer network system. The numerical code is secret and can only be understood with an encryption key.
2. messages that computer users send to each other using computer networks.
3. a set of step by step instructions that a computer programmer puts into a computer to tell a computer to do specific jobs or to solve problems.
4. information that is put into and stored in a computer by a computer programmer
5. a computer program that enters a computer and makes copies of itself by spreading from program to program or disk to disk. It can destroy all the information in your computer.
6. a Web site that cannot be hacked into.
7. computer crime committed using the Internet
8. communication using the Internet.
9. University, government and commercial computer networks that are all linked together.
10. breaking into a computer system without permission to find or destroy information.

**Make a list of other computer terms and their meanings. You may need to use a computer dictionary.**

**Ex.19. Complete these sentences using the words above. Each word is only used once.**

*combat, attacks, impact, participate, anonymous, confidential, hostile, launch.*

1. He told her that the news about the new system was still \_\_\_\_\_. She was not allowed to talk to reporters.
2. Everyone in the group is expected to \_\_\_\_\_ in the workshops.
3. He will \_\_\_\_\_ a new computer company tomorrow.
4. To \_\_\_\_\_ cyber-crime he suggested the company tried the InfraGuard program.
5. He gave away half of the money he had made from designing the new computer program to the university but he remained \_\_\_\_\_ because he never told the university who he was.
6. \_\_\_\_\_ on computer systems can harm information stored in computers or even destroy it.
7. When the manager came to the factory, he was greeted by \_\_\_\_\_ workers because they hated him for his rude behavior.
8. Computers have had a huge \_\_\_\_\_ upon the worldwide economy.

**Ex.20. ON THE LEFT** there are examples often useful verbs in computing; **on the right** there are definitions of the verbs. Read the examples and match the verbs (which are in italics) with the definitions. Then write the infinitive forms into the spaces in the definitions on the right.

EXAMPLES	DEFINITIONS
1. Two PCs have been <i>assigned</i> to outputting the labels.	a) To ' 'is to write data to a location and, in doing so, to destroy any data already contained in that location.
2. The account results were <i>dumped</i> to the back up disk.	b) To ' 'is to switch between two states.
3. The spelling checker does not <i>eliminate</i> all spelling mistakes.	c) To ' 'is to say that something dangerous is about to happen, to say that there is a possible danger.
4. Some laser printers are able to <i>emulate</i> the more popular office printers.	d) To ' ' means not to recognize or not to do what someone says.
5. The prototype disk drive <i>failed</i> its first test.	e) To ' 'is to move data from one device or storage area to another.
6. This command instructs the computer to <i>ignore</i> all punctuation.	f) To ' 'is to give a computer or someone a job.
7. You <i>launch</i> the word processor by double clicking on its icon.	g) To ' 'is to remove something completely.
8. The new data input has <i>overwritten</i> the old information.	h) To ' 'is to copy or behave like something else.
9. The company's products <i>range</i> from a cheap lapheld micro to a multistation mainframe.	i) To ' 'is to check or repair or maintain a system.
10 The disk drives were <i>serviced</i> yesterday and are working well.	j) To ' 'is not to do something which should be done; not to work properly.
11 The symbols can be <i>toggled on</i> or off the display.	k) To ' 'is to vary or to be different.
12 He <i>warned</i> the keyboarders that the system might become overloaded.	l) To ' 'is to start or run a program.

## READING COMPREHENSION

**Ex. 21 Decide which statements are true and which are false:**

1. The FBI has developed the computer program InfraGard.
2. It is thought that computer thieves take approximately 1.6 trillion dollars out of the world economy every year.
3. The number of cyber-crime cases has doubled since 1998.
4. Companies have to pay the FBI to use InfraGard.
5. Janet Reno believes that high-tech companies and the FBI have to work together to help stop Internet crime.

6. If they use InfraGard companies have to share all their information with the public.
7. The program helps companies to communicate with each other about Internet crime like computer viruses or computer hacking.
8. InfraGard did not begin as a trial project. Instead, it was used in all the FBI offices immediately.
9. InfraGard is a program that helps communication between companies by offering coded e-mail and a Web site that is meant to be secure from hackers and computer criminals
10. Last fall companies found out about unfriendly computer programs called 'zombies' because of the InfraGard system.
11. Several zombies stopped people receiving information service from Yahoo! by swamping it with huge amounts of data.

**Ex.22. Find and correct the grammatical mistakes in these sentences. Do not look at the article until you have completed this activity.**

1. "That is the key to all of this, that companies can shared only as much information as they want," Vatis said.
2. Participation in the program is free, Vatis said, but companies must undergo a criminal background check before they is admitted.
3. The FBI is currently investigated 1,200 cyber-crime case, up from 450 in early 1998, said Michael Vatis, head of the FBI's National Infrastructure Protection Center.
4. Vatis said the InfraGard system was use last fall to alerting companies to the existence of "zombies," or hostile computer programs, on their servers.
5. Participated companies can remains anonymous if they desires, and is not required to sharing confidential information.

## **SPEAKING**

**Ex.23. Think about these questions before you read.**

1. How could you hack into a system?
2. How could you stop people hacking into a system?

**Ex.24. Read the dialogue and translate it.**

*Ralph was one of two 18- year olds arrested in the 1990s for hacking into a large American company. They got into the CEO's personal files and left a very rude message. Well, he's grown up a bit and has been putting his knowledge to very good use. He's now a computer security expert, a 'white hat' hacker who uses his skills to make cyberspace safer.*

**Interviewer:** Ralph, what exactly is hacking and how do you go about hacking into a system?

**Ralph:** Hacking simply means getting into computer systems ... you don't have permission to get into. Erm, there are various ways of doing it. You can get in by trying to guess somebody's password. Or you find a bug in a computer system that will allow people with certain passwords to get in where they shouldn't.

**I.:** - So you're sitting in front of your computer ... somewhere, how do you set about getting into someone else's system?

**R.:** - Sometimes it's very simple. People who hack into systems for a living — because they're employed by companies to test their systems — would say the first thing you do is to phone up



someone who uses the system and you say 'Hello, I'm from your company. We want to test a new system. ... We need your password, please, so that we can include you in the trial.' People are too trusting. They normally hand it over.

That's the easy way. If that doesn't work, then you find out by trying to connect to it over the Internet. And normally that's not desperately difficult.

Once you connect to the computer it will ... ask you to ... log on and type an ID and password. You might at the simplest level try typing in 'guest' or 'demo' or 'help' and see what it gives you.

**I.:-** How can you avoid being hacked into?

**R** There's a lot you can do. You can install firewalls to restrict access to a network. You can have a callback system to make sure remote clients are who they say they are. Having really secure passwords helps. Don't use a common name or a dictionary word or anything short. Check the system regularly using event logs to find failed access attempts.

**I.:-** Now you're helping companies to avoid people like you.

**R.:-** Yes, if you want to protect your systems it's a good idea to talk to people like myself rather than big city consultants ... because I know the ways in which I would try to break into your system.

**I.:-** Do you hackers know each other? Is there a competitive element to all this? Is there a kind of rivalry?

**R.:-** I think in the beginning people did. Er, they would ... sit round ... talking about hacking and sharing passwords but nowadays because of the Internet hackers are all over the world and they tend not to know each other and you tend not, because it's so illegal now and so many people are scared of it, people tend not to want to be known.

There is rivalry. Everyone wants to be the first to hack into a really powerful system. The Pentagon gets something like 200 attempts a day to break into their systems.

**I.:-** A recent survey found that four out of ten UK consumers are reluctant to use credit cards for Internet purchases. How risky is it really?

**R.:-** Some people are nervous about giving their credit card number on the Internet. We've seen in the press, partly due to hackers, partly due to the incompetence of people who are running websites, that you can get into databases of credit card numbers. But usually it's the retailers, not the buyers, who get done by people using fake or stolen cards.

Using your credit card on the Internet is no more dangerous than giving your credit card number down the phone or paying at the supermarket with a credit card, throwing the receipt away where somebody can pick it up and then they've got your credit card number and a copy of your signature. The Internet is not as dangerous as that. My advice is, if you want to buy things on the Internet, get a separate credit card. Ask for a small limit. Then if it gets misused, you've cut your losses. You can buy a pre-paid charge card for small purchases. Long term, smart cards are probably the answer but you would need a reader on your PC.

## WORD STUDY

**Ex.25 . Study these phrasal verbs from the texts and the dialogue:**

break into	grow up	go about	keep at	throw away	
get into	phone up	set about	keep ahead	Log on	
hack into	run up	shut down	track down	find out	hand over

**Now complete each blank with the appropriate phrasal verb in the correct form. In some cases, more than one answer is possible.**

1. Hackers try to ... passwords so they can penetrate a system.
2. Don't ....your password to anyone who asks for it.

3. The police ... Ralph ....by talking to his friends and acquaintances.
4. Some hackers systems ... to get commercially valuable information.
5. When you ....to a network, you have to provide an ID.
6. How do you ....hacking into a system?
7. Hackers may ....., pretending to be from your company, and ask for your password.
8. Never.... your credit card receipts where someone can find them.
9. Ralph was a hacker as a teenager but he's ... now and become more responsible.
10. ....a system is strictly illegal nowadays.
11. It's a constant race to ....of the hackers.

**Ex. 26. Replace the verb in italics with a phrasal verb of similar meaning. All the phrasal verbs required have been used in this book.**

- 1 Don't *discard* your credit card receipts; they could help fraudsters.
- 2 Trying to *penetrate* computer systems is against the law.
- 3 The typical hacker is a young person who has not *matured* yet.
- 4 The best way to *begin* hacking into a system is to try to get hold of a password.
- 5 If someone *telephones* you and asks for your password, don't *provide* it.
- 6 Hackers *closed* Hotmail for five hours.
- 7 Hackers *accumulated* a telephone bill of Lim for Scotland Yard.
- 8 The difficult thing was to *determine* how the website would look.
- 9 So you won't forget, *record* the ID number the support technician gives you.
- 10 *Examine* the manufacturers' websites before you phone for help.

**Ex.27. Answer the questions:**

1. What was Ralph arrested for?
2. What does he do now?
3. What is a 'white hat' hacker?
4. Why does he say people are too trusting?
5. What two ways does Ralph give for hacking into a system?
6. What passwords does he suggest for trying to get into a system?
7. What does a firewall do?
8. What is the advantage of a callback system?
9. To prevent hacking, what sort of passwords should you avoid?
10. What do event logs show?
11. Why does he say companies should use his services?
12. Do hackers know each other?
13. How risky is credit card use on the Internet?
14. What advice does he give for people intending to use credit cards over the Internet?
15. What does he mean by 'It's the retailers who get done'?
16. What's the problem with using smart cards for Internet purchases?

**Ex. 28. Role play. Work in pairs. Together make up your own questions on these prompts. Then play the parts of the interviewer and Ralph.**

1. first interested in hacking
2. reason for being arrested
3. present job
4. ways to avoid hackers
5. safe ways of paying for Internet shopping

## **FOCUS ON GRAMMAR**

### **Ex. 29. Complete the following sentences**

1. The information might have been saved if ...
2. If he had taken my advise ...
3. He would lend it to you if ...
4. We would install new OS if...
5. We'll wait till...
6. They would have bought a new hardware if ...
7. Shall we check a floppy disk for viruses if ...
8. If you have read the instruction carefully ...
9. He will still be working at the lab when ...
10. Unless the company gets another sys admin ...
11. Don't let anybody use your computer if ...
12. If they were better qualified ....

### **Ex.30. Translate into English**

1. На его месте я бы проверил все еще раз.
2. Денис мог бы помочь вам, если бы вы его попросили.
3. Если бы я хотел усовершенствовать свой компьютер, я бы не покупал это аппаратное оборудование.
4. Если бы вы обновили антивирусные базы, вы бы не потеряли столько данных.
5. Он сможет считать себя настоящим взломщиком, если проникнет в базу данных удаленного компьютера без пароля.
6. Что бы вы делали, будучи на моем месте?
7. Вирус с легкостью может попасть в ваши файлы, если ваш компьютер подсоединен к локальной сети.
8. Если я увижу его завтра, я передам ему вашу просьбу.

## **PROBLEM SOLVING**

### **Ex. 31. Using the text and your own knowledge prove the given statements.**

1. The usage of computers can be positive and negative.
2. We should use computers in ways that are not harmful to the society.
3. The perpetrator has something to gain from the alteration.
4. Computer crimes are serious and costly.
5. The number of computer crimes is increasing nowadays.

### **Ex. 32. Work together as a class and answer these questions:**

1. Who do we call a hacker? What kinds of hackers do you know? What do they do?
2. Hacking could be described as a form of electronic trespassing. Can you think of any situations where it would be acceptable to hack into another computer?
3. What sorts of crimes are committed using computers?
4. How can security in a computer be improved? Write a list of rules for protecting the information on your computer safe.

## UNIT 6

### COMPUTER NETWORK

#### WARMING UP

1. Do you often use you PC to communicate with your friends?
2. What do you need for communication?
3. What kind of communication is cheaper and more convenient to you?

#### ACTIVE VOCABULARY LIST

- |                                  |   |
|----------------------------------|---|
| 1. <i>to transmit</i>            | <i>network topology</i>                     |
| <i>to transmit data</i>          | <i>network model</i>                        |
| <i>data transmission</i>         | <i>private / public network</i>             |
| <i>transmission channel</i>      | <i>peer-to-peer network</i>                 |
| <i>digital transmission</i>      | 4. <i>to share</i>                          |
| <i>analog transmission</i>       | <i>to share resources (data, the tasks)</i> |
| <i>optical transmission</i>      | <i>share</i>                                |
| <i>fiber optics transmission</i> | 5. <i>to route</i>                          |
| <i>transmitter</i>               | <i>to route through the host</i>            |
| 2. <i>wire</i>                   | <i>route</i>                                |
| <i>twisted-pair wire</i>         | <i>router</i>                               |
| <i>wire communication</i>        | 6. <i>node</i>                              |
| <i>wireless communication</i>    | 7. <i>server</i>                            |
| 3. <i>network</i>                | <i>to send a request to the server</i>      |
| <i>Local-area network (LAN)</i>  | <i>client/server model</i>                  |
| <i>Wide-area network (WAN)</i>   |   |

#### VOCABULARY TASKS

**Ex.1. Look through your active vocabulary, find nouns corresponding to the given verbs and translate them.**

- |               |                  |
|---------------|------------------|
| To transmit – | To communicate - |
| To route –    | To share -       |
| To serve -    | To require -     |

**Ex.2. Complete the sentences below with the words from your active vocabulary list.**

1. You can use this kind of network ..... files, a printer or another peripheral device, and even an Internet connection.
2. A ..... is a small hardware device that joins multiple networks together.
3. WLAN is a LAN based on ..... network technology.
4. A computer network ..... is the physical communication scheme used by connected devices.
5. Each device in the network, whether it's a computer, printer, scanner, or whatever, is called a .....
6. In computer networking, a ..... is a computer designed to process requests and deliver data to other computers over a local network or the Internet.
7. Networking is the practice of linking computing devices together with hardware and software that supports data ..... across these devices.

8. The world's most popular public ..... is the Internet.
9. On a ..... network all computers tend to support the same functions.
10. In addition to operating in a limited space, a ..... is typically owned, controlled, and managed by a single person or organization.

**Ex.3. Make six three-word expressions by combining words from the three columns and match each expression with the appropriate phrase.**

<b>A</b>	<b>B</b>	<b>C</b>
bulletin	access	interface
central	area	memory
random	board	network
optical	user	recognition
local	processing	system
graphical	character	unit

1. Control + arithmetic/logic + input/output  
.....
2. Windows, icons, mouse, pointer  
.....
3. Allows access to any location in any order  
.....
4. Sort of database accessed by modem  
.....
5. The terminals are all near to each other  
.....
6. A process that converts scanned-in text into machine readable code  
.....

**Ex.4. Rewrite the sentences below, changing the verbs (which are in *italics*) to nouns. Don't change the meaning of the sentences, but be prepared to make grammatical changes if necessary.**

**e.g. The two systems *interact*. = There's *interaction* between the two systems.**

1. The user's new transaction was *recorded* in the database. =  
There's .....
2. The system is easy *to install*. =  
The .....
3. The system *failed* when I booted up this morning. =  
There was .....
4. The factory is *equipped* for computer controlled production. =  
The factory has .....
5. You'll have to *compare* the results of the two programs. =  
You'll have to make .....
6. This is our system for *storing* client records. =  
This is our .....
7. Only privileged users can *access* this information. =  
Only privileged users have .....
8. Something's wrong: the keyboard doesn't *respond*. =  
Something's wrong: there's .....

9. The files are *retrieved* automatically. =  
 File .....
10. Jack is responsible for *maintaining* the system. =  
 Jack is responsible for .....

**Ex.5. Complete the sentences with the given words.**

***Button, hard disk, highlight, icon, print out, memory, cursor, modem, website.***

1. The computer stores large amounts of information on its .....
2. When a program is running, it is using the computer's .....
3. A small picture that represents a program is called an .....
4. The flashing symbol that shows where text will appear is the .....
5. When you've finished writing a text you often want to .....
6. You can click the left or right mouse .....
7. If organizations use the Internet to provide information about themselves – they put the information on their .....
8. You connect the computer to the Internet via a .....
9. Hold down the left mouse button and drag the cursor across any text that you want to ...

**READING**

**TEXT 1**

**THE PURPOSES OF NETWORKS**

**VOCABULARY**

*Cable* – кабель  
*Optical fiber* - оптоволоконный кабель  
*To be attached to* – быть связанным, соединяться  
*Via* – через  
*Core* – ядро  
*Availability* - наличие  
*To span* - охватывать  
*Satellite* - спутник

A **computer network** is an electronic system that uses computer hardware, software and communications channels to link two or more computing devices together for the purpose of sharing data. Networks are physically composed of terminals and communications channels. A typical terminal is a keyboard and a monitor. A communications channel is the means of transmitting data or information between the terminals, including twisted-pair copper wire *cable*, coaxial *cable*, *optical fiber*, and different *wireless* technologies. The devices can be separated by a few meters (e.g. *via* Bluetooth) or nearly unlimited distances (e.g. *via* the Internet).

Originally, networks were used to provide a terminal access to another computer and to transfer files between computers. Today, computer networks are the *core* of modern communication. Many countries are becoming networked for business, government, personal communications, and entertainment purposes. Computer network technology continues to advance, and this is resulting in the *availability* of new and improved hardware and services along with greater ease of use and lower cost.

## WORD STUDY

### Ex.6. Translate into English.

Канал связи, обмен информацией, передача данных, беспроводные технологии, неограниченные расстояния, предоставлять доступ, пересылать файлы, легкость использования.

### Ex. 7. Look through the text and find words with a similar meaning.

To connect, aim, to consist of, usual, method, heart, initially, to transmit, admittance, contemporary, to progress.

### Ex. 8. Match the words and their definitions.

- |                       |  |
|-----------------------|--|
| 1. a computer network | a) a system by which information travels   |
| 2. a terminal         | b) a set of wires which carry signals  |
| 3. a channel          | c) a device, usually consisting of a keyboard and a screen, by which a user can give instructions to and get information from a computer |
| 4. a cable            | d) a collection of information for a computer stored under one name  |
| 5. a file             | e) the most important or central part of anything  |
| 6. the core           | f) a set of computers connected to each other with the ability to exchange data  |

### Ex.9. Fill in the missing words.

1. A computer network is used to ..... two or more computing devices together for the ..... of ..... information.
2. Networks are ..... of terminals and communications .....
3. The devices can be ..... by a few meters or nearly unlimited .....
4. Networks were used to provide a terminal ..... to another computer and to ..... files between computers.
5. Computer network technology continues .....

## READING

### TEXT 2

#### TYPES OF COMPUTER NETWORKS

Networks can be categorized in several different ways. One method defines the type of a network according to the geographical area it *spans*. LAN and WAN are the two most common types of networks but many others exist.

## LOCAL AREA NETWORKS

A **local area network** (LAN) is a computer network that covers a relatively small area, such as a building, or several buildings situated near each other. Most local area networks are built with relatively inexpensive hardware that *transmits* data rapidly. A typical LAN consists of two or more personal computers, printers, and high-capacity disk-storage devices called file servers, which enable each computer on the network to access a common set of files. The capability of sharing resources is a major advantage of a LAN. Many companies use LANs to share devices in their offices. LANs are also useful for sharing Internet access among computers. A system of LANs can be connected over any distance creating a wide-area network.

## WIDE AREA NETWORKS

A **wide area network** (WAN) is a computer network that covers a broad area. WANs are used to connect LANs and other types of networks together, so that users and computers in one location can communicate with users and computers in other locations. They may link the computers by means of *cables*, *optical fibres*, or *satellites*, but the users commonly access the network *via* a modem (a device that allows computers to communicate over telephone lines).

Many WANs are built for one particular organization and are private. Others, built by Internet service providers, provide connections from an organization's LAN to the Internet.

The Internet is the largest and most well-known example of a WAN, *spanning* the Earth.

## WORD STUDY

**Ex.10. Find in the text the English equivalents of the following Russian words and phrases.**

Самые распространенные, существовать, относительно недорогой, передавать информацию быстро, давать возможность, главное преимущество, доступ к Интернету, создавать, обширная территория, определенная организация, предоставлять соединение, известный пример.

**Ex. 11. Give English equivalents for the words in brackets. Translate the sentences.**

1. One way to classify computer networks is .....(в соответствии с) the geographical area they span.
2. A LAN ..... (соединяет) computers or other devices in a limited area such as an office building, a laboratory or a school.
3. A LAN is ..... (полезна) for sharing resources like files, printers, games or other applications.
4. WANs ..... (охватывают) cities, countries, continents and the whole world.
5. .... (спутниковый) Internet is a form of high-speed Internet connections.
6. Internet providers offer ..... (доступ) to the Web, e-mail and other Internet services.
7. WLAN and WWAN are the ..... (беспроводные) equivalents of LAN and WAN.
8. The system ..... (передает) information over digital phone lines.

**Ex.12. Make up sentences from the words. Put different kinds of questions to one of the sentences.**



1. Types, WAN, the, common, are, networks, LAN, two, and, most, of.
2. Small, a LAN, relatively, covers, a, area.
3. Of, resources, the, a LAN, advantage, capability, sharing, a, is, major, of.
4. Via, users, a WAN, commonly, a modem, the, access.
5. Of, the Internet, the most, example, well-known, is, a WAN.

**Ex.13. Choose the appropriate words for the sentences.**

1. result, results, resulting
  - a. We are still dealing with the problems ..... from errors made in the past.
  - b. The ..... of these mathematical operations were obtained from the university mainframe.
2. availability, available, availably
  - a. Our university has a limited number of terminals installed. Consequently, it is not always easy to find one ..... for use.
  - b. The success of this course depends on the ..... of the tutors to help the students in their computer assignments.
3. locations, locate, located
  - a. The memory of a computer has numerous storage ..... called addresses.
  - b. Have you been able to ..... your error?
  - c. The office is conveniently ..... in the centre of the town.
4. technology, technological, technologically
  - a. Computer ..... is a fast growing discipline.
  - b. The ..... improvements of computers are reducing man's workload.
  - c. Today's computers are ..... far superior to those used a few years ago.
5. access, accessible, accessibility
  - a. Computers should be made easily ..... to teachers and pupils.
  - b. Remote ..... is a system that allows you to use information that is far away from your computer.
6. provide, providing, provider, provided
  - a. The project is designed to ..... young people with work.
  - b. Internet Service ..... is a company that offers the technical services that allow people to use the Internet, usually in exchange for a monthly payment.

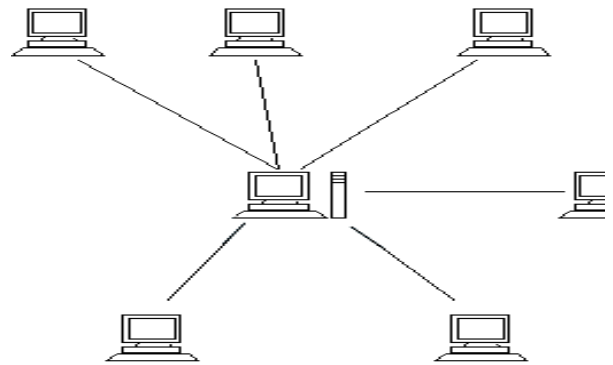
**READING**

**TEXT 3**

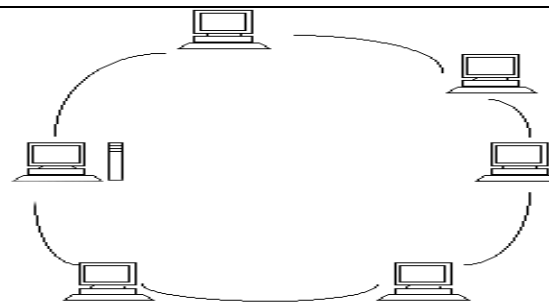
**LAN TOPOLOGY. LAN MODELS.**

The physical layout of a local area network is called its topology. The three most common topologies for LANs are star, ring, and bus.

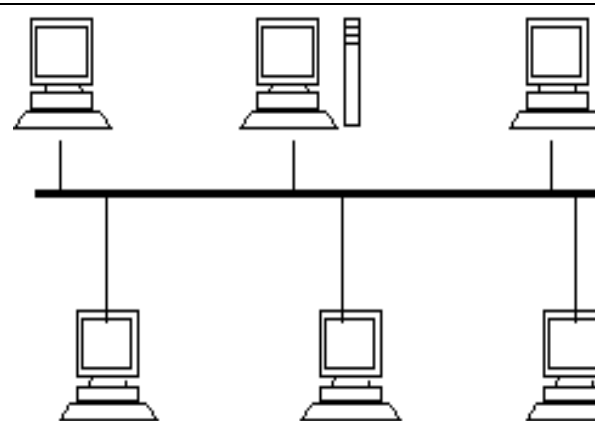
A **star topology** has a host computer, which is responsible for managing the network. Usually, a database and a printer are parts of this host computer. The other nodes are *attached to* the host and all messages are *routed* through the host. If the central computer fails, so does the network.



A **ring topology** has all *nodes* attached in a circle, without a central host computer. Messages travel around the ring until they reach the computer to which they are addressed. If the ring is broken, the network fails.



A **bus topology** does not use a central or host computer. Instead, each node manages part of the network. Information can be transmitted from one computer directly to another without travelling through every other node. Bus topology is the most popular LAN topology because the failure of one network computer does not affect the other network computers.



More complex networks can be built as hybrids of two or more of the above basic topologies.

### LAN Models

Computer networks also differ in their design. Regardless of the topology, LANs usually follow one of two models: client / server or peer-to-peer.

A **client / server model** uses one or more computers as servers, and the other computers on the network are clients. The server is a high-capacity, high-speed computer with a large hard disk capacity. It contains the network operating system, the software required to run the network. The server also contains network versions of programs and large data files. Clients — all the computers that can access the server — send requests to the server. The client / server model works with any size or topology of LAN.

With a **peer-to-peer model**, all computers on the network can access public files and printers connected to other computers in the network. (A public file is one that a user has made available for others to access.) No one computer is in charge of the network; all computers share the

network management tasks. A peer-to-peer network tends to slow down with heavy use, and keeping track of the information on each computer can be difficult. Therefore, this model is used with small networks.

A network can also combine elements of both client / server and peer-to-peer models.

## WORD STUDY

**Ex.14. a) Make a list of unknown words from the text (10-15) and give their Russian equivalents.**

**b) Make up 5-7 sentences using the words from ex.1a, translate them into Russian.**

**Ex.15. a) Find synonyms and translate the words.**

A central computer, join, responsible for, ring, immediately, influence, comprise.

**b) Find antonyms and translate the words.**

Success, simple, subsidiary, coincide, receive, private, to speed up.

**Ex.16. Fill in the gaps with prepositions.**

1. In a star topology, a host computer is responsible ..... managing the network.
2. All other devices are attached ..... the host computer and all messages are routed ..... the host.
3. A ring topology has all nodes attached ..... a circle, and the messages travel ..... the ring either in a “clockwise” or “counterclockwise” direction.
4. Data can be transmitted ..... one computer directly ..... another in a bus network.
5. A bus topology is popular because the failure of one computer does not affect ..... the other network computers.
6. With a peer-to-peer model, no one computer is ..... charge ..... the network.
7. A peer-to-peer network tends to slow ..... with heavy use.

**Ex. 17. Match the words from column A with their definitions from column B.**

1. A star topology	a)is a high-capacity, high-speed computer which contains the network operating system.
2. A server	b)is the physical layout of a local area network.
3. A bus topology	c)is a type of network design.
4. A network model	d)has all nodes attached in a circle, without a central host computer.
5. A network topology	e)has a host computer, which is responsible for managing the network.
6. A ring topology	f)does not use a central or host computer. Instead, each node manages part of the network.

## READING COMPREHENSION

**Ex. 18. Say if the sentences are true or false. Correct the false ones using the information from the text.**

1. Because the computers in a LAN share hardware, several people can't use the same network printer.
2. A ring topology has all nodes attached in a chain.
3. A client / server model uses one computer as a server, and the other computers on the network are hosts.
4. A peer-to-peer model is used with large networks.
5. WANs usually cover a small area, such as a building or several buildings situated near each other.
6. A communications channel is a keyboard and a monitor.
7. Computer network technology continues to advance.
8. In a bus topology, all messages are routed through the host computer.
9. In a star topology, the failure of the host doesn't affect the other network computers.
10. Today, computer networks are the core of modern communication.

**Ex.19. Choose the appropriate words to fill in the gaps.**

1. In computer networking, ..... refers to the layout of connected devices.  
a) model;                      b) terminal;                      c) topology.
2. In a ..... network, every device has exactly two neighbors for communication purposes.  
a) star;                      b) ring;                      c) bus.
3. Networks are physically composed of terminals and .....  
a) clients;                      b) servers;                      c) communications channels.
4. In a ..... network, the failure of one computer does not affect the entire network.  
a) star;                      b) ring;                      c) bus.
5. The users commonly access the WAN via a .....  
a) keyboard;                      b) modem;                      c) satellite.
6. The ..... is a high-capacity, high-speed computer with a large hard disk capacity.  
a) client;                      b) terminal;                      c) server.
7. All the computers that can access the server are called.....  
a) hosts;                      b) clients;                      c) devices.

**Ex.20. Match the beginnings of the sentences with their endings.**

1. A computer network is an electronic system that	a. one or more computers as servers, and the other computers on the network are clients.
2. Originally, networks were used	b. to connect LANs and other types of networks together, so that users and computers in one location can communicate with users and computers in other locations.
3. Many companies use LANs	c. to provide a terminal access to another computer and to transfer files between computers.
4. WANs are used	d. a server; all computers share the network management tasks.

5. A client / server model uses	e. links two or more computing devices together for the purpose of sharing data.
6. A peer-to-peer model doesn't use	f. to share devices in their offices.

**Ex.21. Ask questions to which the following sentences can be answers. Complete these sentences with the information from the text first.**

1. Networks are physically composed of .....
2. Many countries are becoming networked for .....
3. The capability of sharing resources is .....
4. A system of LANs can be .....
5. The Internet is the largest and most well-known .....
6. Bus topology is the most popular LAN topology because .....
7. The server contains .....
8. A public file is one that .....

**Ex.22. Answer the questions.**

1. What is a computer network?
2. What are networks used for?
3. What are the ways to define the type of a computer network?
4. What is a LAN / a WAN?
5. What are the most common topologies for LANs?
6. When do star, bus and ring topologies fail?
7. Can you describe a client/server model?
8. Why is a peer-to-peer model used only with small networks?

## LISTENING

**Ex.23. Look through the following words:**

*Do-it-yourself* - самодельный  
*To be capable of doing smth* – быть способным на  
*To attempt* – пытаться  
*To be familiar with* – быть знакомым с  
*To be used to doing smth* – привыкнуть к  
*To depend on* – зависеть от  
*Experience* – опыт  
*To avoid doing smth* – избегать  
*To be good at doing smth* – хорошо уметь  
*Junction* – соединение  
*To hire* – нанимать

**Ex.24. Make up 3-5 sentences using the words and word-combinations from the list above.**

**Ex.25. Listen to the extract from the radio program “Computer works” about LANs. Indicate whether the following items were mentioned or not.**

1. LANs are equally useful to large and small companies.
2. Companies can install their own LANs, provided they are not too big.

3. Whether or not a company builds a do-it-yourself LAN depends on the amount of space available for the installation.
4. It is sometimes possible to install a part of a LAN if you don't have the computer knowledge or time to do the whole job yourself.
5. You need at least three years' computer maintenance experience before you should attempt to install a LAN.
6. In order to install your own LAN, you need to be used to opening up computers, adding and removing expansion boards, and consulting computer documentation.
7. When installing your own LAN you should expect to have to repeat the same process several times.
8. The installation process often causes computers to break down.

**Ex.26. Listen to the conversation once again. Try to fill in the gaps with appropriate words.**

- When you are installing a LAN, you may be ... your computers for as much as a day or so. A lot depends on how ... the installation proceeds, and that depends on your own ... . Professional installers can have each of your machines ... of ... for only a few minutes at a time. If you can't live without your computers for a while, you might want to ... doing it yourself.

- Installing a LAN involves running cable to several ... . This may require you to install junction boxes in walls, do the wiring, and maybe install electrical ... as well. If you aren't ... with these skills, and if you aren't a qualified electrician, you will need to hire ... for this part, at least. Of course, if you are ... your LAN in one ..., then you might not need to hire ....

**Ex.27. Prove or contradict the given statements according to the dialogue.**

1. Mary Marsh is a computer student.
2. LANs are useful both for large and small companies.
3. Only a specialist can design and install a LAN.
4. You have to know a lot about computers to set up your own LAN.
5. It takes a professional installer several days to install a LAN.
6. You may need to hire a qualified electrician to do the wiring.

**Ex.28. What other questions about LANs and their applications would you ask Mary Marsh?**

**SPEAKING**

**Ex. 29. Imagine that you are the administrator of a LAN. Answer the questions to complete the following interview.**

**Reporter** What exactly does the term 'LAN' cover?

**You** \_\_\_\_\_

**Reporter** Is it expensive to build a LAN?

**You** No, \_\_\_\_\_

**Reporter** I see. Apart from sharing Internet access among computers, what other services do you provide?

**You** Well, \_\_\_\_\_

**Reporter** Oh, I think it's very useful. And why have you chosen a bus topology for your LAN?

\_\_\_\_\_

**You**

What about the model you follow?

**Reporter** \_\_\_\_\_

**You** What is the server responsible for?

**Reporter** \_\_\_\_\_

**You** Does that include processing requests and delivering data to other computers over the network?

**Reporter** Yes, \_\_\_\_\_

**You** Thank you for information.

**Reporter** \_\_\_\_\_

**You**

## FOCUS ON GRAMMAR

**Ex.30. Explain the meaning of the modal verbs in the following sentences.**

1. You can use your computer for various purposes.
2. You mustn't press any button.
3. The batteries should not be kept uncharged.
4. You may not use my e-mail box.
5. You have to follow a number of rules when entering these commands.
6. You don't need to back up these files.
7. Were they allowed to operate the new device?
8. I must work hard to learn this programming language.
9. Could you help me with the installation procedure?
10. The old PCs are to be replaced next month.

**Ex.31. Complete the sentences with modal verbs.**

1. You ..... end your program with 'quit' command. (можешь)
2. They ..... provide us with all necessary data. (должны)
3. You ..... use my notebook if you wish. (можешь)
4. To read this graphics file you ..... a program that recognizes the file's format. (нужно)
5. We ..... use the floppy disk because of the viruses. (не смогли)
6. .... you help me with the database? (не могли бы)
7. You ..... remember the password. (приходится)
8. You don't ..... to push buttons; these actions occur under the direction of the program you are using. (нет необходимости)
9. You ..... alter or delete a configuration file. (не следует)
10. Before you ..... use you new disk for storing information, you ..... format it. (можешь, должен)

**Ex. 32. Choose the correct translation.**

<i>message</i>	<i>translation</i>
1. Cannot recover non-removable drive X.	а) Не следует восстанавливать несъемный накопитель X; б) Нельзя восстановить несъемный накопитель X; в) Восстановить несъемный накопитель X.
2. Target disk cannot be used for back-up.	а) Диск, на который осуществляется запись, не может быть использован для резервного копирования; б) Не используйте диск, на который осуществляется запись, для резервного копирования; в) Диск, на который осуществляется запись, может быть использован для резервного копирования.
3. Unable to create table in resident memory.	а) Возможно создать таблицу в резидентной памяти; б) Невозможно создать таблицу в резидентной памяти; в) Создайте таблицу в резидентной памяти.
4. Target floppy disk may be unusable.	а) Дискета, на которую ведется запись, является непригодной; б) Дискета, на которую ведется запись, может быть непригодной; в) Дискета, на которую ведется запись, должна быть пригодной.
5. Drive letter must be specified.	а) Буква, определяющая дисковод, должна быть определена; б) Буква, определяющая дисковод, может быть определена; в) Буква, определяющая дисковод, определена.

**PROBLEM SOLVING**

**Ex. 33. Work in two groups, A and B. Group A, list all the advantages of a network. Group B, list all the disadvantages. Then together consider how the disadvantages can be minimized.**

**Ex. 34. Translate some of the rules for computer use in our institute into English. Compare your translations with others in your group and agree on the best English versions.**



## UNIT 7

### THE INTERNET

#### WARMING UP

1. Do many people use the Internet in our country these days?
2. What popular Internet services do you know?
3. Do you often use the Internet? What for?
4. What do you know about the World Wide Web?

#### ACTIVE VOCABULARY LIST

- |                                     |                                    |
|-------------------------------------|------------------------------------|
| 1. <i>bulletin board</i> –          | <i>to conduct an investigation</i> |
| 2. <i>path</i> –                    | 7. <i>to distribute</i> –          |
| <i>source path required</i>         | <i>to distribute profits</i>       |
| <i>access path</i>                  | <i>to distribute widely</i>        |
| <i>communication path</i>           | 8. <i>to embrace</i>               |
| <i>data transfer path</i>           | <i>deadly embrace</i>              |
| 3. <i>spread</i> –                  | 9. <i>to examine</i> –             |
| <i>to prevent / stop the spread</i> | <i>to examine carefully</i>        |
| <i>spread of network</i>            | <i>examine a question</i>          |
| 4. <i>to blur</i> –                 | <i>examine an account</i>          |
| <i>to blur out</i>                  | 10. <i>to expand</i> –             |
| 5. <i>to collaborate</i> –          | <i>expand a system</i>             |
| 6. <i>to conduct</i> –              |                                    |

#### VOCABULARY TASKS

##### Ex. 1. Match the synonyms.

- |                |              |
|----------------|--------------|
| 1. collaborate | a) transmit  |
| 2. facilitate  | b) spread    |
| 3. transfer    | c) cooperate |
| 4. expand      | d) connect   |
| 5. flourish    | e) help      |
| 6. link        | f) prosper   |
| 7. examine     | g) inspect   |

##### Ex. 2. Match the antonyms.

- |             |               |
|-------------|---------------|
| 1. flourish | a) slow       |
| 2. rapid    | b) tiny       |
| 3. reliable | c) decline    |
| 4. vast     | d) unvaried   |
| 5. diverse  | e) unreliable |
| 6. link     | f) reduce     |
| 7. expand   | g) disconnect |

**Ex. 3. Which of these words are defined below?**

*Bulletin board, to examine, route, to embrace, to conduct, path, to expand, to disconnect, to collaborate, to distribute.*

1. to spread throughout a space or area
2. to work with another or others on a joint project
3. a facility on a computer network allowing any user to leave messages that can be read by any other user, and to download software and information to the user's own computer
4. to comprise or include as an integral part
5. the directions for reaching a particular file or directory
6. to lead or direct (affairs, business, etc.); control
7. to look at, inspect, or scrutinize carefully or in detail; investigate
8. to make or become greater in extent, volume, size, or scope; increase

**Ex.4. a) Make up 3 sentences of your own using your active vocabulary list.**

**b) Make up 3 sentences in Russian, ask your group-mate to translate them.**

**READING**

**TEXT 1**

**The Internet**

**Authentication** – идентификация

**Original** – первый, первоначальный

**Single** – один, единственный

**To flourish** – процветать, преуспевать

**Rapid** – быстрый, скорый

**Reliable** - надежный

**Vast** – обширный, громадный

**Diverse** – разнообразный, разный

Computer networks link computers by communication lines and software protocols, allowing data to be exchanged rapidly and reliably. Traditionally, networks have been split between wide area networks (WANs) and local area networks (LANs). A WAN is a network connected over long-distance telephone lines, and a LAN is a localized network usually in one building or a group of buildings close together. The distinction, however, is becoming blurred.

Originally, networks were used to provide access to another computer and to transfer files between computers. Today, networks carry e-mail, provide access to public databases and bulletin boards, and are used for distributed systems.

The Internet is a global computer network that embraces millions of users all over the world. It dates back to 1969 when it began as a military experiment. By the mid-1990s the Internet linked millions of computers throughout the world and it is sure to be the most important commercial and popular means of communication nowadays. The original uses of the Internet were electronic mail, file transfer, bulletin boards and remote computer access. Having expanded considerably during the 1990s, the World Wide Web enables users easily to examine the Internet sites and now it is likely to have become the leading informational service of the Internet.

One of the most popular Internet services is e-mail. Most of the people, who have access to the Internet, use the network only for sending and receiving e-mail messages. Information that people send over the Internet takes the shortest path available from one computer to another. Because of this, any two computers on the Internet stay in touch with each other as long as there is a single route between them. However, other popular services are available on the Internet: reading USENET News, using the World Wide Web and the Intranet.

The Internet provides users with a reliable alternative to the expensive telecommunication systems. Internet users can communicate cheaply over the Internet with the rest of the world. They only have to pay for phone calls to their local providers, not for calls across countries.

Through keyword-driven Internet research using search engines like Google, millions of users have easy access to a vast and diverse amount of online information. Compared to encyclopedias and traditional libraries, the Internet has enabled a sudden and extreme decentralization of information and data. The Internet allows computer users easily to connect to other computers and information stores wherever they may be across the world. They may do this with or without the use of security, authentication and encryption technologies.

This is encouraging new ways of home-working, collaboration. An accountant sitting at home can audit the books of a company based in another country. These accounts could have been created by home-working book-keepers, in other remote locations, based on information e-mailed to them. An office worker away from his or her desk, perhaps on a business trip or a holiday, can open a remote desktop session into his or her normal office PC using a security Virtual Private Network (VPN) connection via the Internet. It gives him or her access to all their files and data, including e-mail and other applications, while they are away.

The Internet facilitates the development of e-commerce. E-commerce involves the use of computer networks for maintaining business relations and selling information, services and goods.

Nowadays remote education, banking services, ticket reservation, stock market transactions can be transferred over the Internet.

However, there are still both commercial and technical problems which will take time to be solved. The most important is security. It is possible to get into any of the computers along the route, intercept and even change the data being sent over the Internet though there are many encoding programs available. Businesses often develop intranets for sharing information and collaborating within the company, these networks are usually isolated from the surrounding Internet by special computer-security systems.

Countries where Internet access is a commodity used by the majority of population include Iceland, Sweden, Australia, Denmark, the United States, Canada, the UK, the Netherlands and Norway. The use of the Internet around the world has been growing rapidly over the last decade, although the growth rate seems to have slowed somewhat after 2000. The phase of rapid growth is ending in industrialized countries, but the spread continues in Africa, Latin America, the Caribbean and the Middle East.

## WORD STUDY

**Ex.5. Add another word, abbreviation, or part of a word, to complete the following words and phrases.**

- |                 |                                   |
|-----------------|-----------------------------------|
| 1. soft _____   | 6. to examine the Internet _____  |
| 2. data _____   | 7. services _____ on the Internet |
| 3. e- _____     | 8. remote _____ session           |
| 4. net _____    | 9. _____ education                |
| 5. _____ boards | 10. computer-_____ system         |

**Ex. 6. Define what verbs these nouns are derived from.**

- |                  |       |
|------------------|-------|
| 1. communication | _____ |
| 2. connection    | _____ |
| 3. security      | _____ |

4. provider	_____
5. usage	_____
6. reservation	_____
7. distribution	_____
8. collaboration	_____
9. development	_____
10. service	_____
11. information	_____
12. expansion	_____

**Ex. 7. Match the verbs with the nouns.**

- |                        |  |
|------------------------|--|
| 1. to embrace          | a) e-commerce                                  |
| 2. to pay              | b) access to information on the Internet sites |
| 3. to send and receive | c) millions of users                           |
| 4. to facilitate       | d) e-mail messages                             |
| 5. to provide          | e) the Internet sites                          |
| 6. to examine          | f) for phone calls to local providers          |
| 7. to develop          | g) new ways of collaboration                   |

**Ex.8. Fill in the prepositions.**

- Traditionally networks have been split \_\_\_\_\_ WANs and LANs.
- Networks were used to provide access \_\_\_\_\_ another computer.
- Today the Internet embraces millions of users all \_\_\_\_\_ the world.
- Any 2 computers \_\_\_\_\_ the Internet stay \_\_\_\_\_ touch \_\_\_\_\_ each other.
- Many services are available \_\_\_\_\_ the Internet.
- The Internet provides \_\_\_\_\_ a reliable alternative to the expensive telecommunication systems.
- \_\_\_\_\_ keyword-driven research users have access to a vast amount \_\_\_\_\_ online information.
- Intranets are usually isolated \_\_\_\_\_ the surrounding Internet \_\_\_\_\_ special computer-security systems.

**Ex.9. Match the words with their definitions.**

- |                    |  |
|--------------------|--|
| 1. Internet        | a) a program which can store and allow manipulation of a large amount of information               |
| 2. web site        | b) typing documents such as letters or reports   |
| 3. World Wide Web  | c) a system of sending messages between computers through the phone networks to specific addresses |
| 4. program         | d) a set of coded instructions, written in a programming language                                  |
| 5. e-mail          | e) web pages published on the Internet by a person or organization                                 |
| 6. code            | f) Internet sites, containing text, graphics and sound, with links to each other                   |
| 7. database        | g) a system of words, letters, numbers used instead of ordinary writing to keep messages secret    |
| 8. word processing | h) a program used to display numbers and other information in a grid                               |
| 9. spreadsheet     | i) the system that connects computers through telephone lines all over the world                   |

**Ex.10. Make up sentences from the jumbled words.**

1. and/ access/ networks/ provide/ today/ public databases/ bulletin boards/ to.
2. users/ the/ world/ over/ all/ millions/ of/ embraces/ the Internet.
3. has become/ service/ of/ the leading/ WWW/ informational/ Internet.
4. of/ amount/ have/ millions/ of/ users/ access/ to/ a/ online/ vast/ information.
5. computers/ Internet/ stores/ and/ with/ information/ connects/ computer users/ the other.
6. of/ development/ it/ facilitates/ the/ e-commerce/ education/ remote/ of/ new/ collaboration/ ways/ and.
7. usually/ from/ are/ isolated/ intranets/ Internet/ the/ by/ surrounding/ systems/ special/ security/ computer.

**Ex.11. Fill in the blanks using these words.**

*English, e-mail, shareware, Internet, download*

4. People in many countries use the \_\_\_\_\_ to communicate.
5. Most people write \_\_\_\_\_ to their friends and family.
6. Some people \_\_\_\_\_ software and games.
7. Often, this software is \_\_\_\_\_, and it's important to pay the person who wrote it.
8. Studying \_\_\_\_\_ will help you use the Internet.

**READING COMPREHENSION**

**Ex. 12. Say whether the following sentences are true or false. Correct the false sentences.**

1. Only one million people use the Internet.
2. The most popular Internet service is e-mail.
3. People use the Internet only to send and receive e-mail messages.
4. Communication on the Internet is more expensive than communication by phone.
5. It is impossible to get into any of the computers along the route.
6. There is a special form of encoding with the help of which the Internet transmits nearly all the information.
7. The Internet enables the development of e-commerce, new ways of collaboration.

**Ex. 13. Join two halves of the sentences.**

1. Having been created in 1969,	a) support the growth of banking transactions through the Internet.
2. The introduction of the World Wide Web	b) one should connect a number of firms through the Internet.
3. E-commerce involves	c) the Internet connects millions of computer users today.
4. The number of people using the Internet	d) many companies often refer to their own Web sites.
5. Advertising their goods and services.	e) either for business purposes or education is constantly growing.

6. To be isolated from the surrounding networks collaborating companies create	f) facilitated the development of e-commerce.
7. To establish a virtual company	g) special security intranets.
8. Most of traditional retail agencies	h) wide computer networks used for diverse economic activity.

**Ex.14. Complete the sentences. Ask questions to which the following sentences from the text can be answers.**

1. Computer networks link ...
2. Originally, networks were used ...
3. Today networks carry ...
4. The Internet is a global network ...
5. It dates back ...
6. The World Wide Web enables ...
7. One of the most popular Internet service ...
8. Through the Internet research ...
9. It facilitates ...
10. However, there are some problems ...
11. Countries where the Internet access is a commodity ...

**Ex.15. Answer the questions.**

1. What were the original users of the Internet?
2. Why has the Internet spread so widely all over the world?
3. How can individuals and businesses use the Internet?
4. What does e-commerce include?
5. When did e-commerce appear?
6. What are intranets used for?
7. In what countries does the majority of population have access to the Internet?

**Ex.16. Give a summary of the article in 7-10 sentences.**

## **SPEAKING**

**Ex.17. Ask your classmates and let them answer.**

- a) what kinds of computer networks he/she knows;
- b) about the original use of networks;
- c) whether he/she knows when the Internet appeared;
- d) about the original uses of the Internet;
- e) about the most popular Internet service;
- f) about new ways of collaboration that the Internet encourages;
- g) about commercial and technical problems which still exist.

**Ex.18. Read and reproduce the dialogues.**

\*\*\*

**Jim:** There are millions of web pages on the net. How do I find what I'm looking for?

**Paul:** Use a search engine like Alta Vista.

**Jim:** How does it work?

**Paul:** You enter the name or topic you are interested in then ask the search engine to find pages about your topic.

**Jim:** It must take a long time to search all those pages.

**Paul:** Not really, usually less than a minute.

\*\*\*

**Linda:** Where did the Web come from?

**Paul:** It started in 1989 at a Laboratory in Europe known as CERN where physicists around the world work together.

**Linda:** Why is it so popular?

**Paul:** Because it is easy to use and connects people around the world who want to locate information and share knowledge.

**Linda:** Thanks. I think I'll go surf for a new salad recipe.

\*\*\*

**Mary:** Hey Jim, where have you been this week?

**Jim:** I was writing a web page for my new business - selling Bizen pottery.

**Mary:** Cool. What did you put on the page?

**Jim:** I put a CGI form on it so people could send me information.

**Mary:** How many hits has it gotten?

**Jim:** It's getting about 100 a day.

**Mary:** Have you sold anything?

**Jim:** Not yet....

\*\*\*

**Bill:** I'm really optimistic about the future of business on the Internet. My company is helping new businesses start using it.

**Steve:** But I don't want to do business on a computer. I want to meet people - not machines.

**Bill:** The Internet isn't replacing that. It is adding new ways of communication.

**Steve:** I think there's too much personal information about me on computers.

**Bill:** Companies should keep your information private.

**Ex. 19. Test Your Net IQ. Choose the right variant.**

1. Which of these is an e-mail address?

- a) professor.at.learnthenet
- b) www.learnthenet.com
- c) professor@learnthenet.com
- d) professor@learnthenet

2. What's a web browser?

- a) A kind of spider.
- b) A computer that stores World Wide Web files.
- c) A person who likes to look at websites.
- d) A software program that allows you to access sites on the World Wide Web.

3. How do you subscribe to an Internet mailing list?

- a) Contact your Internet service provider.
- b) Send e-mail to the list manager.
- c) Telephone the mailing list webmaster.
- d) Send a letter to the list.

4. *Which of these is a search engine?*

- a) FTP
- b) Google
- c) Archie
- d) ARPANET

5. *What's a URL?*

- a) The address of a website or web page.
- b) The person who manages a website.
- c) A kind of computer language.
- d) An acronym for User Response List.

6. *What kind of data can you send by e-mail?*

- a) Audio.
- b) Pictures.
- c) Video.
- d) All of the above.

7. *What is the Internet equivalent of a library card catalog?*

- a) A search engine such as AltaVista.
- b) A Web directory such as Yahoo!
- c) A newsgroup.
- d) A personal home page.

8. *What is the difference between the Internet and an intranet?*

- a) One is public, the other is private.
- b) One is safer than the other.
- c) One can be monitored, the other can't.
- d) None of the above.

9. *When is it not a good idea to give out your credit card number?*

- a) In an e-mail message.
- b) To a website that doesn't use encryption.
- c) In a chat room.
- d) All of the above.

10. *How can you catch a computer virus?*

- a) Sending e-mail messages.
- b) Using a laptop during the winter.
- c) Opening e-mail attachments.
- d) Shopping online.

## **FOCUS ON GRAMMAR**

**Ex. 21. Translate the following sentences, pay attention to the use of infinitives.**

1. Four terminals are used by keyboard operators to input information, and the others are used to provide information to senior staff.
2. I need to know more about control of access.
3. In order to avoid accidental or intentional loss of data, only specially authorized personnel may delete data files.



4. Also, the programs to be verified will have to be well-constructed, to make the job easier.
5. This correspondence dealt with books published or to be published.
6. A small computer company announced a computer small enough to set on a desktop and powerful enough to support high level language programming.
7. The system must allow managers to call up data relevant to their needs.

**Ex. 22 Choose Participle I or Participle II.**

1. The net was supposed to be about community, about people with common interests *finding/found* each other in the limitless tracts of cyberspace and *connecting/connected* like never before.
2. The nodes will link to the net via broadband links and share that access via antenna *siting/sited* on the roofs of several buildings.
3. The company *administering/ administered* the .info domain could face legal challenges from those *denying/ denied* a chance to apply for some generic .info domains.
4. A group of researchers at Bell labs have made tiny *functioning/functioned* transistors a million times smaller than a grain of sand.
5. In the media you can often find articles *telling/ told* of hackers *breaking/ broken* into computer systems and websites *stealing/ stolen* and *destroying/ destroyed* information.
6. Hacker is a computer user *breaking/ broken* a system's security and *stealing/ stolen* valuable information.
7. Hackers will often write open-source code *allowing/ allowed* others to see what they have done.
8. The hacking contest was not run fairly and proved nothing about the integrity of the *proposing/ proposed* technologies.
9. Technologies such as the Internet, PCs and wireless telephony have turned the globe into an increasingly *interconnecting/ interconnected* network of individuals, organizations and governments *communicating/ communicated* and *interacting/ interacted* with each other with through a variety of channels.
10. *Using/ used* effectively, information and communication technologies can help to create *training/ trained, educating/ educated* and healthy workforce.
11. Netscape Gecko control how WebPages appears on the screen and supports *accepting/ accepted* web standards such as HTML, XML, Cascading Style Sheets and JavaScript.
12. An intelligent network consists of *distributing/ distributed* signaling network of switches, databases and *dedicating/ dedicated* computer servers.

**Ex. 23. Translate the following sentences, pay attention to the use of the gerund.**

1. Upon switching off the current the pressure dropped.
2. We have modified the network while retaining the SFS property.
3. Besides being useful in general interpolation technique, the procedure can be effectively used to approximate the first coefficients of F.
4. The new opportunities may make life on this planet much more worth living.
5. They were against postponing the meeting and for going on with the discussion of this problem.
6. The purpose of the method is determining system stability.
7. We succeeded in building a flexible system.
8. He preferred changing the course of actions.
9. The main requirement is observing the rules.
10. We'll discuss the problems of computer's way of thinking as a model of human thinking at this conference.
11. We cannot help acknowledging the importance of this statement.

12. He had to give up experimenting.
13. Know your own faults before blaming others for theirs.
14. It is better doing well than saying well.
15. On solving one problem we went on studying the others.

### **PROBLEM SOLVING**

**Ex. 20. Discuss the following questions.**

1. Is the Internet a good place to learn? What do you learn?
2. Which search engines have you used? Which is your favorite search engine?
3. If you send Email to a friend, should anyone be able to read it? Should a government be able to read all its citizens Email?
4. If a picture is legal in one country but illegal in another, should it be banned from the Internet?
5. Some countries are trying to ban or censor some newsgroups because they feel the groups discuss illegal activity or issues that are religiously or politically taboo. Should governments have the right to censor newsgroups?
6. Have you ever gone shopping on the Internet? Is it safe to send your credit card number over the WWW?

**Term I**

**Module 2. Unit 2. Computer Functions. (6 hours)**

Text work.

***Variant 1***

**Computers in Business**

**Ex.1. Read and translate the text.**

**Translate an abstract of the text into Russian in written form (to the teacher's choice).**

The revolution of computers initially was used for complex data bases only. However people realized advantages of computer use in all spheres of their life, for computers began to become more user friendly and aimed at providing comfort, ease of operation and efficiency to the user. Two major breakthroughs in the revolution of computers were the introduction of Windows and years later the introduction of laptop computers. Another revolutionary introduction was the Macbook, a highly advanced next generation device, which of course greatly facilitated businesses and working people in several ways. Apart from that, hardware such as scanners, CD and floppy drives and printers has facilitated the operations of offices. In today's era we cannot imagine an office or a company without numerous computer uses. The following are a few uses of computers in business...

*General Convenience:* Earlier, before computers were introduced in businesses, there were multiple devices in offices and businesses such as fax machines, typewriters, telefax equipment, stenography equipment and filing cabinets that were used extensively. Computers successfully replaced these office tools and nowadays files and data exist electronically on the computer instead of having a physical existence.

*Accounting and Finance:* An important use of computers in business is the machines ability to act as a clever accountant. There is countless accounting software that can cleverly record entries and plan finances. This financial software basically increases the accuracy of the financial accounting process. There are also several Internet banking facilities that have come into use recently. Such facilities enable people to conduct transactions from their offices, saving them a journey to the bank.

*Communications:* The biggest impact of information technology on business was observed in the field of communication. The Internet and the concept of e-mails has benefited businesses as information, letters, technical drawings, applications and almost any sort of communication can be transmitted from person to person, at distant locations, in a matter of few minutes. The Internet also helps in communication to the masses. Stock investors, Forex traders, media companies, financial planners and company owners rely solely on the World Wide Web for instant updates from over the world.

*Technical Software:* An important use of computers in business is the technical software. Technical software is used by countless number of people such as engineers, architects, logistics personnel, etc. This technical software is again user friendly, accurate, convenient and fast.

Just a few of the many different uses of computers in business were mentioned above. But now it's clear in our minds that using computers in today's business has enhanced the performance of employees.

**Ex.2. Look through the text and find the derivatives to the following words.**

To introduce	revolution
To exist	imagination
To perform	success
To generate	importance
To equip	observation

**Ex.3. Fill in the gaps with prepositions.**

It's clear ... one's mind, ... all spheres ... one's life, ... person ... person, come ... use, ... the field ..., to be aimed ....., impact .... information technology ..... business, use ... computers ... business.

**Ex.4. Make word-combinations.**

accounting	comfort
conduct	owners
technical	software
company	tools
providing	transactions
filing	drawings
office	cabinets

**Ex.5. Find the odd word.**

- |                 |                |             |
|-----------------|----------------|-------------|
| 1. a) Equipment | b) tools       | c) means    |
| 2. a) Programs  | b) disks       | c) software |
| 3. a) File      | b) information | c) data     |
| 4. a) personnel | b) people      | c) staff    |
| 5. a) section   | b) device      | c) unit     |

**Ex.6. Decide if the following statements are true or false. Correct the false ones using the information from the text.**

- Computers became more users friendly and aimed at providing comfort, ease of operation and efficiency to the user.
- There were three major breakthroughs in the revolution of computers.
- The biggest impact of information technology on business was observed in the field of accounting.
- Nowadays files and data exist electronically on the computer instead of having a physical existence.
- Financial software basically increases the time of the financial accounting process.
- Using computers in today's business has enhanced the salary of employees.
- These new facilities enable people to conduct transactions from their offices and homes.

**Ex.7. Join two halves of the sentences.**

1. The Internet also helps...	a) numerous computer uses.
2. Hardware such as scanners, CD and floppy drives and printers has facilitated...	b) the machines ability to act as a clever accountant.
3. An important use of computers in business is...	c) for complex data bases only.
4. We cannot imagine an office or a company without...	d) such as fax machines, typewriters, telefax equipment, stenography equipment and filing cabinets.

5. The revolution of computers initially was used...	e) countless number of people.
6. Technical software is used by...	f) in communication to the masses.
7. Earlier there were multiple devices in offices and businesses...	g) the operations of offices.

**Ex.8. Put five questions to the text.**

### ***Variant 2***

#### **Advantages and Disadvantages of Using Computers in Education**

**Ex.1. Read and translate the text.**

**Translate an abstract of the text into Russian in written form (to the teacher's choice).**

Computers are the best way of teaching subjects to students. These days, all schools and colleges have computer labs where they receive practical training from their teachers. With the help of computers and the broadband Internet facilities, students can search for the concepts or things which they wish to know, by referring to relevant websites. The Internet is an ocean of information and surfing daily will increase the knowledge of these students greatly. Another advantage of computers is that the students will be able to gain knowledge of various subjects and things which are other than their school syllabus. Such form of receiving education is considered to be more effective than only learning from text books prescribed by the authorities.

Use of computers in the classroom can help teachers to teach much more than they can do without them. The students can be shown charts, diagrams and figures while teaching practical oriented subjects such as Algebra, Geometry, Physics, Biology or Botany. Teachers can give many assignments to students which they can complete with the help of computer packages. Introduction of computers in educational institutes can help students learn different computer software and hardware, under the guidance of their teachers. Importance of computer education is highlighted with the fact that computer literate students have a greater chance of grabbing the best jobs in the industry than those who do not have the required computer knowledge. Students need to be aware of all computer uses for their own benefit.

Use of computers in education does not end here. Many times, it happens that students are not able to enroll for degree courses which they are interested in due to lack of money or because the institute is far away from their residence. The introduction of distance learning has solved all these problems. The distance learning programs or online degree programs, which involve learning with the help of computers, provides education at much affordable costs than the costs of full time training. Also, students living far off, in remote areas, need not travel several kilometers and come to the city as they can now learn from the comforts of their home provided they own a desktop computer with an Internet connection.

However, there are certain disadvantages of use of computers in education which we must be aware of. Firstly, doing all calculations with the help of software and calculator can affect our own mathematical ability. In simple words, computers can make us a bit lazy and this can cause problems while giving examinations which are not conducted online, but require us to do all calculations by ourselves. With readymade information available on the Internet, students will not take any interest in reading reference books and searching for information using other sources. Reading less can hamper their progress and educational future.

From this article, on use of computers in education, we conclude that computers and education have become inseparable from each other. We also understood how computer technology has affected our lives in a positive way. By making wise use of computers, we can learn a lot of new things in a relatively short period of time.

**Ex.2. Look through the text and find the derivatives to the following words.**

To vary	practice
To assign	requirement
To guide	relation
To know	separate
To afford	literacy

**Ex.3. Fill in the gaps with prepositions.**

Searching ... information, to be aware ..., ... referring ..., available ... the Internet, ... one's own benefit, due ... lack ... money, ... the help ..., to affect ... smth ... a positive way.

**Ex.4. Make word-combinations.**

distance	computer
computer	institutes
Internet	learning
Educational	costs
desktop	facilities
mathematical	packages
affordable	ability

**Ex.5. Find the odd word.**

- |                 |               |               |
|-----------------|---------------|---------------|
| 1. a) Education | b) learning   | c) knowledge  |
| 2. a) training  | b) drill      | c) rehearsal  |
| 3. a) icon      | b) diagram    | c) chart      |
| 4. a) syllabus  | b)timetable   | c) curriculum |
| 5. a) question  | b) assignment | c) task       |

**Ex.6. Decide if the following statements are true or false. Correct the false ones using the information from the text.**

1. The students will be able to gain knowledge of various subjects and things which are other than their school syllabus.
2. The distance learning programs or online degree programs provides education at less affordable costs than the costs of full time training.
3. Students can search for the concepts or things which they are asked to learn, by referring to relevant websites.
4. One more advantage of computer education is that computer literate students have a greater chance of grabbing the best jobs in the industry than those who do not have the required computer knowledge.
5. With readymade information available on the Internet, students will take much interest in reading reference books and searching for information using other sources.
6. The students can be shown charts, diagrams and figures while teaching humanities such as Algebra, Geometry, Physics, Biology or Botany.
7. Students living far off, in remote areas, need not travel several kilometers and come to the city as they can now learn from the comforts of their home provided they own a telephone.

**Ex.7. Join two halves of the sentences.**

1. Doing all calculations with the help of software and calculator can ...	a) where they receive practical training from their teachers.
2. Teachers can give many assignments to	b) a lot of new things in a relatively short

students ...	period of time.
3. Computers and education have become ...	c) help students learn different computer software and hardware
4. All schools and colleges have computer labs...	d) affect our own mathematical ability
5. By making wise use of computers, we can learn ...	e) inseparable from each other.
6. Introduction of computers in educational institutes can ...	f) and surfing daily will increase the knowledge of these students greatly.
7. The Internet is an ocean of information ...	g) which they can complete with the help of computer packages

**Ex.8. Put five questions to the text.**

## **Term II**

### **Module 2. Unit 3. Computer Tools. (6 hours)**

Projects.

Hardware:

1. The processor
2. Hard Disk and Floppy Disk
3. External memory
4. Keyboard, mouse and other input devices
5. Output devices
6. Storage devices

Types of Application Software:

1. Word processing software
2. Graphics software
3. Desktop publishing software
4. Spreadsheet software
5. Database management software
6. Communications software

Tasks: Students should write a report and make a presentation on one of the topics given above. The volume of the report is about 3-3.5 pages; the presentation should last for 5 minutes.

Post reading exercises should be attached to the report. They are:

- Make up a list of 10-15 new words which you've met in the text with Russian translation and some derivatives or word combinations;
- Write 10 sentences of your own using some of new words;
- Put 10 questions of different types to the text of your report.

### **Module 2. Unit 5. Computer Crime. (6 hours)**

Text work.

## **Hacker**

**Ex.1. Read and translate the text.**

**Hacker** is a term used to describe different types of computer experts. In popular usage and in the media, it generally describes computer intruders or criminals. "Hacker" can be those who use it in its positive sense as members of the computing *community*. The term "*hacker*" can also be used in the computing community to describe a particularly brilliant programmer or technical expert (for example: "Linus Torvalds, the creator of Linux, is a genius hacker.").

A possible middle position says that "hacking" describes a collection of skills, and that these skills are used by hackers in different ways.

### **Categories of hacker**

The hacker community (people who would describe themselves as hackers, or who would be described by others as hackers) consists of at least three categories of hackers.

#### **1. Hacker: Intruder and criminal**

The most common usage of "hacker" in the popular press is to describe those who break computer security without authorization or anyone who has been *accused of* using technology (usually a computer or the internet) for terrorism, vandalism, credit card *fraud*, *intellectual property theft*, and many other forms of crime. This can mean taking control of a *remote* computer through a network.

A **hacktivist** is a hacker who uses the World Wide Web as a way to express their political views. These individuals use other people's websites, to promote their political views. For instance these hackers may use a political candidate's web page and adjust it to promote their opposition candidate.

#### **2. Hacker: Brilliant programmer**

The positive usage of hacker - one who knows a (sometimes specified) set of programming interfaces well enough to write software quickly and expertly. Very talented hackers may become bored with a project once they have figured out all of the hard parts, and be unwilling to finish off the "details". Types of hackers in this sense are **gurus** and **wizards**. "Guru" has age and experience, and "wizard" often has particular expertise in a specific topic, and an almost magical ability to perform hacks no one else understands.

#### **3. Hacker: Security expert**

The term white hat hacker is often used to describe those who try to break into systems or networks in order to help the owners of the system by making them aware of security holes, or to perform some other altruistic activity. Many such people are *employed* by computer security companies (such professionals are sometimes called *sneakers*). Collections of these people are often called Tiger Teams.

### **Jargon File definition**

The following is the definition given by the most recent edition of the Jargon File (a dictionary of hacker jargon), which emphasizes the positive sense of "hacker". The definitions in this dictionary were not made through research into common usage, but reflect the opinions of its editors.

**hacker** [originally, someone who makes furniture with an axe]

1. A person who enjoys studying the details of programmable systems and how to *stretch* their capabilities, as opposed to most users, who prefer to learn only the minimum necessary.

2. One who programs enthusiastically (even obsessively) or who enjoys programming rather than just theorizing about programming.

3. A person who is good at programming quickly.

4. An expert at a particular program, or one who often does work using it or on it;

5. An expert or enthusiast of any kind. One might be an astronomy hacker, for example.

6. One who enjoys the intellectual challenge of creatively *overcoming limitations*.

7. A malicious intruder who tries to discover important information. The correct term for this sense is *cracker*.



So as we can see after reading this text to some professional computer programmers, the word "hacker" refers to a skilled programmer and is neither pejorative nor it refers to criminal activity. However, to most users of English, the word "hacker" refers to computer criminals.

### Notable hackers

- Mark Abene -- Inspired thousands of teenagers around the country to "study" the internal workings of the United States phone system. One of the founders of the Masters of Deception group.
- Dark Avenger -- Bulgarian virus writer that invented polymorphic code in 1992 as a way to fool the recognition by Anti-virus software.
- Robert Tappan Morris, Jr. -- This Cornell University graduate student created the first major Internet worm in 1988.
- Kevin Mitnick -- The first hacker to be held in jail without bail for a time long enough to a world record.
- Kevin Poulsen -- In 1990 Poulsen took over all telephone lines going into Los Angeles area radio station KIIS-FM to win an automobile in a call-in contest.
- Adrian Lamo -- Was accused of nontechnical but surprisingly successful intrusions into computer systems at Microsoft, The New York Times, Lexis-Nexis, MCI WorldCom, SBC, Yahoo!, and others.
- Vladimir Levin -- This mathematician led Russian hacker gang that tricked Citibank's computers into spitting out \$10 million. To this day, the method used is unknown.

### Ex.2. Fill in the missing words.

1. \_\_\_\_\_ is a term used to describe different types of computer experts.
2. \_\_\_\_\_ is a hacker who uses the World Wide Web as a way to express their political views.
3. A hacker is someone who enjoys the intellectual challenge of creatively \_\_\_\_\_
4. \_\_\_\_\_ has age and experience, and \_\_\_\_\_ often has particular expertise in a specific topic.
5. A hacker programs \_\_\_\_\_ and enjoys programming rather than just \_\_\_\_\_ about programming.

### Ex.3. Translate into English.

Кража интеллектуальной собственности, набор навыков, удаленный компьютер, проникать в систему, ошибки в системе безопасности, сеть, творчески преодолевать ограничения, компьютерный эксперт, взломщик, подделка кредитных карточек.

### Ex.4. Match the words from column A with their definitions from column B.

1. Cracker, Black-hat	a) Types of hacker in the positive sense.
2. Script kiddy	b) A hacker in the negative sense.
3. Guru, Wizard	c) A hacker who breaks security but who does so for altruistic or at least non-malicious reasons. The darker the hat, the less the ethics of the activity.
4. Whitehat, Sneaker, Grey-hat	d) a person with little or no skill. Or a person who simply follows directions or uses a cook-book approach without fully understanding the meaning of the steps they are doing.

**Ex. 5. Find the false sentences and correct them using the information from the text.**

1. Hacker doesn't know a set of programming interfaces well enough to write software quickly and expertly.
2. Very talented hackers never become bored with a project they are doing.
3. A hacker is a person who prefers to learn only the minimum necessary.
4. A hacktivist is a hacker who uses a political candidate's web page and adjusts it to promote the opposition candidate.

**Ex.6. Answer the questions.**

1. Who uses other people's websites to promote their political views?
2. Who is a white hat hacker?
3. Who is a black hat hacker?
4. Who are guru and wizard?
5. What is the best definition of a hacker?

**Ex.7. Translate one of the following texts (to the teacher's choice) in written form.**

**(1)**

Many crimes involving computers are no different from crimes without computers: the computer is only a tool that a criminal uses to commit a crime. For example,

- Using a computer, a scanner, graphics software, and a high-quality color laser or ink jet printer for forgery or counterfeiting is the same crime as using an old-fashioned printing press with ink.
- Stealing a laptop computer with proprietary information stored on the hard disk inside the computer is the same crime as stealing a briefcase that contains papers with proprietary information.
- Using computers can be another way to commit either larceny or fraud.

Posting messages in an Internet newsgroup or online bulletin board with a false author's name that is intended to harm the reputation of the real person of that name.

These acts might be punishable by existing criminal statutes that prohibit impersonation, forgery, deceit, or fraud. However, a judge might decide that the specific language in old statutes about writing or signature does not apply to e-mail. Rather than write new statutes for forged e-mail addresses or unauthorized sending of e-mail in someone else's name. The author of this article would prefer that legislatures broaden the existing criminal statutes for analogous crimes with paper and ink.

**(2)**

Unauthorized use of computers tends generally takes the following forms:

- The criminal reads (or copies) confidential or proprietary information, but data is neither deleted nor changed.

In 1999, the Melissa virus infected a [possibly confidential] document on a victim's computer, then automatically sent that document and copy of the virus via e-mail to other people.

Subsequently, the SirCam and Klez malicious programs made a similar release of [possibly confidential] documents from a victim's computer. These malicious programs are a new way to release confidential information from a victim's computer, with the confidential information going not to the author of the malicious program, but to some person unknown to the author of the malicious program.

- Changing data. For example, change a grade on a school transcript, add "money" to a checking account, etc. Unauthorized changing of data is generally a fraudulent act.
- Deleting data. Deleting entire files could be an act of vandalism or sabotage.

Most unauthorized use of a computer is accomplished by a person in his home, who uses a modem to access a remote computer. In this way, the computer criminal is acting analogous to a burglar. . However, in the unauthorized use of another's computer, the criminal "enters" the computer via the telephone lines, which is not breaking into the building.

**(3)**

Since the Internet is not limited by geography, crimes committed in cyberspace can easily achieve global dimensions. Systems can be accessed from anywhere in the world, and locating perpetrators is difficult. Many computer fraud and embezzlement schemes target international financial networks. Organized crime groups can utilize information technology to evade identification and carry out drug trafficking and money laundering on a global scale. Questions of jurisdiction and apprehension become much more complicated in international cyberspace. Estimates place annual business losses to cyber-crime at roughly \$1.5 billion. Many hackers are based in countries far from those they affect. Many authorities suspect that organized "cyber-crime gangs" frequently originate in developing countries where computer-crime laws are lax and enforcement is haphazard.

Individual countries vary widely in the legal approaches they have taken to regulating the Internet. Some strictly observant Islamic nations have tried to contain the dissemination of information online, which they view as containing messages potentially harmful to their populations. Germany has tried to restrict Web sites containing Neo-Nazi content. China installed firewalls to prevent its citizens from accessing unauthorized sites, and Burma bans Internet access completely.

Text 1

**THE DEVELOPMENT OF THE COMPUTER**

The inventions and ideas of many mathematicians and scientists led to the development of the computer. The first mechanical calculating machines were invented during the 1600's. One of the more notable of these devices was built in 1642 by the French mathematician and scientist Blaise Pascal.

During the 1830's, an English mathematician named Charles Babbage developed the idea of a mechanical digital computer. He tried to construct a machine called an analytical engine. The machine contained the basic elements of an automatic computer and was designed to perform complicated calculations according to a sequence of instructions. However, the technology of Babbage's time was not advanced enough to provide the precision parts needed to complete the machine.

Another important contribution to the development of the computer was made in the mid-1800's by George Boole, an English logician and mathematician. Boole devised a system of formulating logical statements symbolically so that they could be written and proved in a way similar to that of ordinary algebra.

In 1930 the first reliable analog computer was built. This machine, called a differential analyzer, solved differential equations.

During the 1940's, John Von Neumann, an American mathematician, introduced an idea that improved computer design. He proposed that programs could be coded as numbers and stored with data in a computer's memory.

The invention of the transistor in 1947 and of related solid-state devices during the 1950's and 1960's resulted in the production of faster and more reliable electronic computers. The new machines also were smaller and less expensive than earlier models.

The continued miniaturization of electronic equipment during the late 1960's and 1970's led to further advances in computer technology. The development of the integrated circuit enabled engineers to design both minicomputers and high-speed mainframes with tremendous memory capacities.

Researchers are seeking ways to improve memories and auxiliary storage equipment. They expect to produce an efficient magnetic bubble unit, which is faster and cheaper to operate than mechanical tape or disk units. A magnetic bubble unit is a semiconductorlike chip that stores data in tiny, cylindrically shaped areas called bubbles. Up to a million bits of information can be stored in one bubble unit.

Scientists are also working to increase computing speed by designing circuits that are even more densely packed and closer together. One proposed device, called a very large-scale integrated circuit (VLSI), would contain hundreds of thousands of transistors and other parts. Projects also are being undertaken to devise hardware and software that would enable a computer to understand ordinary speech.

Text 2

**PERSONAL COMPUTERS: THE EARLY YEARS**

Until the late 1970s, the computer was a massive machine that was useful to big business and big government but not to the general public. Computers were too big and expensive for private use. As technology advanced, this was changed by a group of engineers and *entrepreneurs* who tried to improve the designs of that technology and to find ways to make the computer attractive to more people. Although these innovators of computer technology were

very different from each other, they had a *common* enthusiasm for technical innovation and the *capacity* to *foresee* the potential of computers.

Much of this activity was centred in the Silicon Valley in northern California, where the first computer-related company had opened in 1955. That company attracted thousands of related businesses, and the area became known as the technological capital of the world. Between 1981 and 1986, more than 1000 new technology-oriented businesses started there. At the busiest times, five or more new companies started in a single week. The Silicon Valley attracted many risk-takers and gave them an opportunity to live in an atmosphere where creativity was expected and rewarded.

Robert Noyce was a risk-taker who was successful both as an engineer and as an entrepreneur. The son of an Iowa minister, he was informal, genuine, and methodical. Even when he *was running* one of the most successful businesses in the Silicon Valley, he dressed informally and his office was an open cubicle that looked like everyone else's. A graduate of the Massachusetts Institute of Technology (MIT), he started working for one of the first computer-related businesses in 1955. While working with these pioneers of computer engineering, he learned many things about computers and business management.

As an engineer, he co-invented the *integrated circuit*, which was the basis for later computer design. As a businessman, Noyce co-founded Intel, one of the most successful companies in the Silicon Valley and the first company to introduce the microprocessor. The microprocessor chip became the heart of the computer, making it possible for a large computer system that once filled a room to be contained on a small chip that could be held in one's hand. It made possible the invention of the personal computer and eventually led to the birth of thousands of new businesses. Noyce's *contributions* to the development of the integrated circuit and the microprocessor earned him both wealth and fame before his death in 1990.

In fact, many people consider his role to be one of the most important in the Silicon Valley story.

The two men who first introduced the personal computer (PC) to the marketplace neither prestigious university educations nor experience in big business. Twenty-year-old Steven Jobs and twenty-four-year-old Stephen Wozniak were college computer hobbyists in a local computer club. Built in the garage of Jobs's parents, this first personal computer used the technology of Noyce's integrated circuit. It was typewriter-sized, as powerful as a much larger computer, and inexpensive to build. To get the \$1300 needed to fill their first *orders*, Jobs sold his Volkswagen bus and Wozniak sold his scientific calculator. Wozniak built and sold the first order of 100 computers in ten days. He used the least expensive materials, the fewest chips, and the most creative number of components. Wozniak designed the first model, and Jobs attracted interest from investors and buyers. Wozniak once said that without Jobs he would never have thought of selling the computer or known how to do it.

From the very beginning, Apple Computer had been *sensitive* to the needs of a general public. Jobs insisted that the computers be light and elegant. He also insisted that the language used with the computers be "user-friendly" and that the operation be simple enough for a person to learn in a few minutes.

These features helped *convince* a sceptical public that the computer was practical for the home and small business. Jobs also introduced the idea of giving Apple Computers to thousands of California schools, thereby indirectly introducing his product into the homes of millions of students. Their second model, the Apple II, was the *state-of-the-art* PC in home and small business computers from 1977 to 1982. By 1983 the total company sales were almost \$ 600 million, and it controlled 23 per cent of the worldwide market in personal computers.

As the computer industry began to reach into homes and small businesses around the world, the need for many new products for the personal computer began to increase. Martin Alpert, the founder of Tecmar, Inc., was one of the first people to foresee this need. When IBM made its first personal computer in 1981, Alpert bought the first two models. He took them apart and worked twenty-four hours a day to find out how other products could be attached to them.

For example, he designed memory extenders that enabled the computer to store more information, and insertable boards that allowed people to use different keyboards while sharing the same printer. After 1981, Tecmar produced one new product per week.

Alpert had neither the technical training of Noyce nor the computer clubs of Jobs and Wozniak to encourage his interest in computer engineering. His parents were German *refugees* who worked in a factory and a bakery to pay for his college education. They insisted that he study medicine even though his interest was in electronics. His first electronics products were medical instruments that he built in his living room. His wife recognized the potential of his projects before he did, and finished a program in business management so she could run his electronics business successfully. Their annual sales reached \$1 million, and they had 15 engineers working in their living room before they moved to a larger building in 1981. It wasn't until 1983 that Alpert stopped practicing medicine and gave his full attention to Tecmar. By 1984 Tecmar cost \$150 million.

Computer technology has opened a variety of opportunities for people who are creative risk-takers. Rarely in history have so many people been so motivated to create. Many of them have been rewarded greatly with fame and fortune.

### Text 3

## WHAT IS A COMPUTER

Computer is an electronic device that performs calculations and processes information. It can handle vast amounts of facts and figures and solve complicated problems at high speeds. The fastest computers are able to process millions of pieces of information in seconds.

A computer can process many kinds of information, from book titles and customer account numbers to chemical formulas and words from ancient Greek texts. It handles all such data in the form of numbers. A computer is able to solve problems involving words by changing them into problems dealing with numbers.

The ability of a computer to do so many tasks makes it useful for a wide variety of purposes. Industrial plants use computers to control machines that produce chemicals, steel products, and numerous other items. Computers are used as a navigation aid on airplanes, ships, and spacecraft. They also enable scientists to analyze data returned by space probes. Computers can be used as teaching machines. They even provide entertainment in the form of computerized games.

Although a computer can do many things, it cannot think. A human operator has to instruct the computer exactly what to do with the data it receives. Such instructions are called a program. Also, the operator must frequently check the performance of the computer and in many cases, interpret the results of the performance.

Computers differ greatly in size. The biggest ones have enough equipment to fill a large room. The smallest computers can be held in a person's hand. No matter what their size, however, all computers have certain basic parts.

The typical computer has an input device, such as an electronic keyboard, through which the operator enters instructions and data. A storage unit, also called a memory, receives this information from the input device and holds it until it is needed. A control unit selects the instructions from the memory in their proper sequence and directs the operations of an arithmetic/logic unit. The arithmetic/logic unit processes the data by means of mathematical calculations and operations involving logic. An output device then translates the processed data into a form meaningful to the operator. Typical output equipment includes automatic typewriters, high-speed printers, and visual displays that resemble television screens.

#### Text 4

### **MICROSOFT**

*Headquarters* – главное управление

*To found* – основывать

Microsoft is a leading developer of personal-computer software systems and applications. The company also publishes books, offers electronic mail services, distributes programming via the Internet. It has sales offices throughout the world but does all of its research and development at its corporate *headquarters* in Redmond, Wash., U.S. In 1975 William H. Gates and Paul G. Allen, two friends from Seattle, created BASIC, a popular mainframe programming language, for use on an early personal computer (PC), the Altair. Shortly afterward Gates and Allen *founded* Microsoft, named from the words “microcomputer” and “software.”

In 1980 International Business Machines (IBM) asked Microsoft to produce software, or operating system for its first personal computer, the IBM PC. Microsoft bought an operating system from another company, modified it, and renamed it MS-DOS (Microsoft Disk Operating System). MS-DOS was made with the IBM PC in 1981.

Microsoft improved its position in operating systems with its Windows graphical command program, whose third version, released in 1990. By 1993, Windows 3.0 was selling at a rate of one million copies per month, and nearly 90 percent of the world's PCs ran on a Microsoft operating system. In 1995, the company released Windows 95, which for the first time fully integrated MS-DOS with Windows.

As a result, by the mid-1990s Microsoft, which became a publicly owned corporation in 1986, had become one of the most powerful and profitable companies in American history.

#### Text 5

### **IBM**

*Workstation* - рабочая станция (сетевой компьютер, использующий ресурсы сервера)

International business machines corporation (IBM) is leading American computer manufacturer. Its headquarters are in Armonk, N.Y. The company got its present name in 1924 under the leadership of Thomas Watson, a man of great marketing skill who became general manager in 1914 and had got complete control of the firm by 1924. By the 1960s it was producing 70 percent of the world's computers and 80 percent of those used in the United States. IBM's specialty was mainframe computers—i.e., expensive computers that could process data at great speeds.

The company did not enter the growing market for personal computers until 1981, when it introduced the IBM Personal Computer. New semiconductor-chip based technologies were making computers smaller and easier to manufacture, allowing smaller companies to enter the market and exploit new developments such as *workstations*, computer networks, and computer graphics. IBM's products include almost every type of equipment needed for information processing and storage. In addition to being the world's largest manufacturer of computers, the company produces electric typewriters, electronic cash registers, and other business machines.

#### Text 6

### **FLOPPY DISC**

*Backup* – резервная копия  
*To engage* – включаться  
*Angular* - угловой  
*Edge* – край

A floppy disk is a data storage device that is a circular piece of thin, flexible (i.e. "floppy") magnetic storage in a square or rectangular plastic wallet.

Floppy disks, also known as floppies or diskettes (a name chosen in order to be similar to the word "cassette"), are used on home and personal computer ("PC") platforms such as the Apple II, Macintosh, Commodore 64, Amiga, and IBM PC to transfer data between computers, and create small *backups*. Before the popularization of the hard drive for PCs, floppy disks were often used to store a computer's operating system (OS), application software, and other data.

By the early 1990s, the increasing size of software meant that many programs were on sets of floppies. Toward the end of the 1990s, software distribution gradually switched to CD-ROM. With the arrival of mass Internet access, cheap Ethernet the floppy was no longer necessary for data transfer either, and the floppy disk was essentially replaced. One unsuccessful attempt in the late 1990s to continue the floppy was the SuperDisk (LS120) with a *capacity* of 120 MB.

The 3½-inch disk is made of two pieces of plastic, with the fabric-medium-fabric sandwich in the middle. The front has only a label for reading and writing data, protected by a metal cover, which is pushed back on entry into the drive.



The 3½-inch floppy disk drive automatically *engages* when the user inserts a disk, and disengages and ejects with the press of a button, or by motor on the Apple Macintosh.

In general, data is written to floppy disks in a series of sectors, *angular* blocks of the disk, and in tracks, concentric rings at a constant radius, e.g. the HD format of 3½-inch floppy disks uses 512 bytes per sector, 18 sectors per track, 80 tracks per side and two sides, for a total of 1,474,560 bytes per disk.

However, this is not the most efficient way to use the disk surface. Because the sectors have a constant angular size, the 512 bytes in each sector are packed into a smaller length near the disk's center than nearer the disk's *edge*. A better technique would be to increase the number of sectors/track toward the outer edge of the disk, from 18 to 30 for instance, thereby keeping constant the amount of physical disk space used for storing each 512 byte sector.

Text 7

## HARD DISC

A hard disk (or "hard disc" or "hard drive" or "hard disk drive") is a computer storage device. The first computer with a hard disk drive was the IBM 350 Disk File, introduced in 1955 with the IBM 305 computer.

The capacity of hard drives has grown greatly over time. With early personal computers, a drive with a 20 megabyte capacity was considered large. In the latter half of the 1990's, hard drives with capacities of 1 gigabyte and greater became available. As of early 2005, the "smallest" desktop hard disk in production has a capacity of 40 gigabytes, while the largest-capacity drives approach one half terabyte (500 gigabytes), and are expected to exceed that mark by year's end.



## DATABASE

*Entity*- объект, существо

*Convenient* – удобный

A **database** is a collection of information stored in a computer in a systematic way, such that a computer program can consult it to answer questions. The software used to manage a database is known as a database management system (DBMS).

Facts may be structured in a number of ways, known as data models. For example, one model is to associate each fact with a record representing an *entity* (such as a person), and to arrange these entities into trees or hierarchies -- the hierarchical data model. Another model is to arrange facts into sets of logical values - the relational model.

The first database management systems were developed in the 1960s. A pioneer in the field was Charles Bachman. Two key data models appeared at this time: the network model (developed by CODASYL) and the hierarchical model.

Databases are used in many applications. Databases are the preferred method of storage for large multiuser applications, where coordination between many users is needed. Even individual users find them *convenient*, and many electronic mail programs and personal organizers are based on standard database technology.

## Journalists and computer crime

One of the functions of the criminal justice system is to deter crime by other people. Journalists play an important role in this deterrence by reporting on the crime (and how people were harmed), arrest, trial, and sentence of the guilty criminals. One hopes that people considering computer crimes will read these reports by journalists, and say to themselves: "I should not write a computer virus, because I don't want to be put in prison like David Lee Smith," the author of the Melissa virus. However, reports of computer crime by journalists are less than satisfactory:

Journalists often glorify or praise the criminal suspect, by admiring his programming "talent", or even calling him a "genius". In the 1980s, most hackers committed fraud to get a username and password for a computer account, and then logged on to the computer without proper authorization, and browsed through files, copying some, deleting or altering others. Such work does *not* require any knowledge of computer programming, just basic knowledge of a few operating system commands. Since 2000, authors of malicious programs use resources readily available on the Internet to create a "new" computer virus or worm, or launch a denial of service attack. Again, such activities do *not* demonstrate a high level of proficiency in computer programming.

It is an anti-social act for journalists to praise hackers: hackers are criminals who deserve scorn. And when hackers are publicly praised as geniuses, the wrong message is sent to serious students in computer science who behave ethically and who are ignored by journalists, despite the fact that the students are both smarter and more ethical than hackers.

I have noticed that many online newspapers: devote considerable space to reporting the crime when it happens, describe the arrest of the criminal suspect in detail, but the trial of the suspect receives less attention from journalists, and the verdict and sentence often go *unreported* in the media.

If punishment is to have a deterrent effect on other people, then the coverage of the trial, verdict, and sentence must be increased. Aside from my main point about deterrence of future crimes, by reporting of sentencing and punishment of computer criminals, there is another issue.

The widespread reporting of the crime and the arrest of a suspect tarnishes the name of the suspect, by linking the crime and the suspect's name in people's minds. However, the suspect might later be found not guilty of the crime. The lack of reporting of the trial and its outcome provides no opportunity for an innocent suspect to rehabilitate his good name.

Part of the problem is that many journalists who write about computer crime are themselves computer-illiterate. (Their ignorance shows in the technical mistakes made in their articles.) From the perspective of a computer-illiterate journalist, the work of a computer criminal may indeed be incomprehensible. Arthur C. Clarke said anything sufficiently advanced appears as magic. That may be, but it is unprofessional for journalists to write on subjects that they do not personally understand. News media hire journalists who understand economics and finance to report business news, and journalists who understand sports to report on sports, so why can't the news media hire journalists who understand computers to report on computer crime?

Text 10

### **Top Ten Guidelines for Homepage Usability**

A company's homepage is its face to the world and the starting point for most user visits. Improving your homepage multiplies the entire website's business value, so following key guidelines for homepage usability is well worth the investment.

Homepages are the most valuable real estate in the world. Each year, companies and individuals spend millions of dollars on a space that's not even a square foot in size. Potential customers will look at your company's online presence before doing business with you.

The homepage is the most important page on most websites, and gets more page views than any other page. Of course, users don't always enter a website from the homepage. A website is like a house in which every window is also a door: people can follow links from search engines and other websites that reach deep inside your site. However, one of the first things these users do after arriving at a new site is go to the homepage. Following are ten things you can do to increase the usability of your homepage and thus your website's business value.

#### **Make the Site's Purpose Clear: Explain Who You Are and What You Do.**

##### **1. Include a One-Sentence Tagline**

Start the page with the line that summarizes what the site or company does, especially if you're new or less than famous. Even well-known companies hope to attract new customers and should tell first-time visitors about the site's purpose. It is especially important to have a good tagline if your company's general marketing slogan fails to tell users what they gain from visiting the site.

##### **2. Group all Corporate Information in One Distinct Area.**

Finding out about the company is rarely a user's first task, but sometimes people do need details about who you are. Good corporate information is especially important if the site hopes to support recruiting, investor relations, or PR. An "About <company-name>" section is the best way to link users to more in-depth information than can be presented on the homepage.

##### **3. Write a Window Title with Good Visibility in Search Engines and Bookmark Lists.**

Begin the title with the company name, followed by a brief description of the site. Don't start with words like "The" or "Welcome to" unless you want to be alphabetized under "T" or "W."

##### **4. Emphasize the Site's Top High-Priority Tasks**

Your homepage should offer users a clear starting point for one to four tasks they'll undertake when visiting your site.

##### **5. Include a Search Input Box**

Search is an important part of any big website. When users want to search, they typically scan the homepage looking for *"the little box -where I can type,"* so your search should be a box.

Make your search box at least 25 characters wide, so it can accommodate multiple words without obscuring parts of the user's query.

### **Reveal Site Content**

#### **6. Show Examples of Real Site Content**

Don't just describe what lies beneath the homepage. Show some of your best or most recent content.

#### **7. Begin Link Names with the Most Important Keyword**

Users scan down the page, trying to find the area that will serve their current goal. Links are the action items on a homepage, and when you start each link with a relevant word, you make it easier for scanning eyes to differentiate it from other links on the page. A common violation of this guideline is to start all links with the company name, which adds little value and impairs users' ability to quickly find what they need.

#### **8. Offer Easy Access to Recent Homepage Features**

Users will often remember articles, products, or promotions that were featured prominently on the homepage, but they won't know how to find them once you move the features inside the site. To help users locate key items, keep a short list of recent features on the homepage, and supplement it with a link to a permanent archive of all other homepage features.

### **Use Visual Design to Improve, not Define, Interaction Design**

#### **9. Don't Over-Format Critical Content, Such as Navigation Areas**

You might think that important homepage items require elaborate illustrations, boxes, and colors. However, users often dismiss graphics as ads. and focus on the **parts** of the homepage **that look more** likely to be **useful**.

#### **10. Use Meaningful Graphics.**

Don't just decorate the page. Images are powerful communicators when they show items of interest to users, but will backfire if they seem frivolous or irrelevant. For example, it's almost always best to show photos of real people actually connected to the topic, rather than pictures of models.

## Тексты заданий по аудированию

### Unit 1

**Host:** Sandra, many of our listeners have written to us asking us to talk about portable computers. I hope you will be able to clarify things for us.

**Sandra:** I hope so, too. The first point to make is that portable computers are simply smaller version of desktop computers. They are as versatile, reliable, and as fast as any computer on your desk.

**Host:** But then why are some referred to as laptops, others as notebooks, and still others as palmtops? What's the difference?

**Sandra:** Simply put, portables are larger than laptops, laptops are larger than notebooks, and notebooks are larger than palmtops. In other words, it's a question of physical size and weight.

**Host:** Are there any other characteristics that differentiate them?

**Sandra:** Yes. For instance, portable computers can only run on AC power. Like desktop computers, they must be plugged on. They weigh between 15 and 20 pounds and have a screen that's at least 10 inches diagonally.

**Host:** How do laptops compare with this?

**Sandra:** Laptops are smaller than portables, and most of them can fit into a briefcase. They don't need to be plugged in; they operate on rechargeable batteries. Most weigh between 8 and 15 pounds and have a screen which is about 10 inches diagonally.

**Host:** What about notebooks?

**Sandra:** Well, notebooks weigh less and have smaller screen. Some weigh as little as 4 pounds. The smallest screen I've seen is about 8 inches diagonally. Notebooks are also thinner than laptops, but they work just as well.

**Host:** Now that we know the basic differences between portables, laptops, and notebooks, what are clipboards?

**Sandra:** Clipboards, as the name implies, look like a clipboard or a slate. They can operate with a rechargeable batteries and are very thin, weighing between 3 and 6 pounds at the most. Their screen size is similar to laptops and notebooks, but the important feature is that they don't have a keyboard. They use a pen or a stylus.

**Host:** You mean to say that you don't have to type in letters or numbers?

**Sandra:** Exactly. All you need is a pen that you use to print on the screen. That's why we call them pen-based computers.

**Host:** That's incredible!

**Sandra:** Now, I didn't mention palmtops. Palmtop computers, or hand-held computers as they are also known, are so small that they can fit in your hand. They weigh less than one pound. Of course, they have a very small screen, but they can operate on alkaline batteries. Most people use these as agenda books, phone books, or address books.

### Unit 4

**RICHARD:** Hi, Steve. Are you busy?

**STEVE:** No, not really.

**R:** Good. If you've got a minute, I'd like to talk to you about **computer security**. I saw a program on TV the other evening about **computer hackers**. It made me realize that our **network system** isn't very secure. We have a lot of sensitive information in our data bank, and I think perhaps we should install some kind of system to **protect** it.

**S:** That's a good point. Theoretically, anyone could call in and connect their **personal computers** at home to the **office network**. All they'd need is a **modem**.

**R:** Exactly. There's nothing to stop students calling in and changing their grades, for example. They could even change their records to show that they'd paid for a course when they hadn't.

**S:** Hmm. What we need is a **password**.

R: Yes, but the problem with **passwords** is what people do with them. Some put them on scraps of paper on their **computer terminals**. Others use their own names, or a partner's name. That just makes life easy for a **hacker**.

S: True, but it's not just what people do with them. The whole idea of using real words is risky. There are **programs** now that will try every word in the dictionary. If you want to make life difficult for the **hacker**, it's much **safer** to use a random mixture of numbers and letters.

R: I suppose so. But isn't it possible to buy a **security system**?

S: Of course. It depends how much you want to spend. You can even buy a system that changes the **password** every single minute.

R: Every minute? Then how do the authorized **user** know what the **password** is?

S: They carry a smart **card** that shows a constantly changing number. The number is the **password**.

R: Very clever!

S: Yes, as long as you don't leave your card lying around.

## Unit 6

Interviewer: Good afternoon, ladies and gentlemen. Welcome to *Computerworks*. Today's guest is Mary Marsh, a computer consultant and expert on networks and their applications. She'll be answering your questions on LANs. Mary, thanks for coming on the programme.

Mary Marsh: It's a pleasure, Mike.

Interviewer: If you want to speak to Mary Marsh, the number to ring is 071-888 1200. The lines are now free. Mary, one of the impressions that business computer users have is that LANs are only for large businesses. Are they right?

Mary Marsh: Well, Mike, I don't agree that LANs are only for large companies. They're just as useful for smaller companies, as many of them are beginning to realize.

Interviewer: Another common belief among business network users is that something as complex as a LAN can be designed and installed only by a specialist company. Is this correct?

Mary Marsh: No, I think they're wrong again, I'm afraid. It's perfectly possible for small companies to design and install their own LANs. Only the really big LANs for large companies need to be installed by outside experts.

Interviewer: So, are you saying that every small company should install its own LAN – build a sort of do-it-yourself network?

Mary Marsh: No, not necessarily everyone. A great deal depends on your ability to work with computers and your willingness to spend time on LAN installation in addition to your normal work. Not everyone is capable of setting up a do-it-yourself network. If you don't have enough computer knowledge, or enough time, you shouldn't attempt it. However, in some cases, you can do part of the installation work, even if you don't do the whole job yourself.

Interviewer: Mary, let's go to our first caller, John from Leeds. Hello, John. What's your question, please?

1<sup>st</sup> caller: Hello, Mary. My question is this: how much do you have to know about computers to install your own LAN?

Mary Marsh: Well, John, you certainly don't need a college qualification in computer science to do a simple LAN installation. On the other hand, you should be able to open up your machines and add and remove expansion boards easily. Also, you should be familiar with computer documentation. Are you used to doing all those things, John?

1<sup>st</sup> caller: Yes, Mary. I've got quite a lot of experience.

Mary Marsh: Well, that's fine. Another point I'd want to make is that you have to be ready to try a process several times before you get it right.

Interviewer: So, Mary's advice is that you've got to keep trying, John.

1<sup>st</sup> caller: Yes. Thanks, Mary.

Interviewer: OK, let's move on to our second caller, Alison from Sunderland. Hello, Alison, what's your question for Mary Marsh, please?

2<sup>nd</sup> caller: Hello, Mike. Hello, Mary. Mary, how much downtime should I expect while installing a LAN?

Mary Marsh: Hello, Alison. When you're installing a LAN, you may be without your computers for as much as a day or so. A lot depends on how well the installation proceeds, and that depends on your own experience. Professional installers can have each of your machines out of operation for only a few minutes at a time. If you can't live without your computers for a while, you might want to avoid doing it yourself.

Interviewer: Does that answer your question, Alison?

2<sup>nd</sup> caller: Yes. Thank you very much, Mary.

Interviewer: Let's go to caller number three, Bill from Bristol. Hello, Bill. What's your question for Mary?

3<sup>rd</sup> caller: Hello, Mary. I'd like to know if I have to be good at construction techniques to install a LAN?

Mary Marsh: Well, Bill, installing a LAN involves running cable to several offices. This may require you to install junction boxes in walls, do the wiring, and maybe install electrical power as well. If you aren't familiar with these skills, and if you aren't a qualified electrician, you will need to hire someone for this part, at least. Of course, if you're installing your LAN in one room, then you might not need to hire anyone.

3<sup>rd</sup> caller: That's what I thought. Thank you very much.

Interviewer: OK, I'll be back with my guest, Mary Marsh, answering questions about computer networks, right after this break...

### **Keys to the test - unit 7:**

1c, 2 d, 3b, 4b, 5a, 6d, 7b, 8a, 9d, 10c

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