

**ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ  
ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ  
ВЫСШЕГО ОБРАЗОВАНИЯ  
«СТАВРОПОЛЬСКИЙ ГОСУДАРСТВЕННЫЙ АГРАРНЫЙ  
УНИВЕРСИТЕТ»**

**КАФЕДРА ИНОСТРАННЫХ ЯЗЫКОВ  
И МЕЖКУЛЬТУРНОЙ КОММУНИКАЦИИ**

**ENGLISH FOR INFORMATION  
TECHNOLOGY**

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**АНГЛИЙСКИЙ ЯЗЫК  
ДЛЯ IT-СПЕЦИАЛИСТОВ**

**УЧЕБНОЕ ПОСОБИЕ**

**Ставрополь  
2019**

УДК 811.111  
ББК 81.2 Англ.  
А 64

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А 64

**English for Information Technology.** Английский язык для ИТ-специалистов : учебное пособие для студентов 2 курса технических специальностей / сост. Е.Б. Зорина, С.А. Михиенко, Н.В. Поддубная, и др. ; Ставропольский государственный аграрный университет. – Ставрополь : Ставропольское издательство «Параграф», 2019. – 40 с.

*Учебное пособие содержит профессионально-ориентированные тексты, а также лексико-грамматические упражнения, теоретический материал по грамматике английского и тексты для дополнительного чтения. Основным назначением пособия является развитие у обучающихся навыков чтения и говорения на английском языке с использованием терминологии, употребляемой в сфере информационных технологий. Предназначено для студентов вузов обучающихся по направлению «Информационные системы и технологии».*

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## UNIT I

### COMPUTER USE AND APPLICATIONS

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• **Share information on how you use computers. Compare answers with other students and make a list of uses for your class**

**1. Find the answers to these questions in the text below.**

1. What is a word processor?
2. What makes processors superior to traditional typewriters?
3. What are the most important features offered by word processor?
4. What is WYSIWYG?
5. What is mail merging?

#### TEXT 1.1 WORD-PROCESSING FACILITIES

Writing letters, memos or reports are the ways most people use computers. They manipulate words and text on a screen, primarily to print at some later time and store for safe keeping. Computers alleviate much of the tedium associated with typing, proofing and manipulating words. Because computers can store and recall information so readily, documents need not be retyped from scratch just to make corrections or changes. The real strength of word processing lies in this ability to store, retrieve and change information. Typing is still necessary (at least, for now) to put the information into the computer initially, but once in, the need to retype only applies to new information.

Word processing is more than just typing, however. Features such as Search and Replace allow users to find a particular phrase or word no matter where it is in a body of text. This becomes more useful as the amount of text grows.

Word processors usually include different ways to view the text. Some include a view that displays the text with editor's marks that show hidden characters or commands (spaces, returns, paragraph endings, applied styles, etc.). Many word processors include the ability to show exactly how the text will appear on paper when printed. This is called WYSIWYG (What You See Is What You Get, pronounced 'wizzy-wig'). WYSIWYG shows bold, italic, underline and other type style characteristics on the screen so that the user can clearly see what he or she is typing. Another feature is the correct display of different typefaces and format characteristics (margins, indents, super- and sub-scripted characters, etc.). This allows the user to plan the document more accurately and reduces the frustration of printing something that doesn't look right.

Many word processors now have so many features that they approach the capabilities of layout applications for desktop publishing. They can import graphics, format multiple columns of text, run text around graphics, etc.

Two important features offered by word processors are automatic hyphenation and mail merging. Automatic hyphenation is the splitting of a word between two lines so that the text will fit better on the page. The word processor constantly monitors words typed and when it reaches the end of a line, if a word is too long to fit, it checks that word in a hyphenation dictionary. This dictionary contains a list of words with the preferred places to split it. If one of these cases fits part of the word at the end of the line, the word processor splits the word, adds a hyphen at the end and places the rest on the next line. This happens extremely fast and gives text a more polished and professional look.

Mail merge applications are largely responsible for the explosion of 'personalized' mail. Form letters with designated spaces for names and addresses are stored as documents with links to lists of names and addresses of potential buyers or clients. By designating what information goes into which blank space, a computer can process a huge amount of correspondence substituting the 'personal' information into a form letter. The final document appears to be typed specifically to the person addressed.

Many word processors can also generate tables of numbers or figures, sophisticated indexes and comprehensive tables of contents.

## **2. Mark the following statements as True or False.**

1. It is impossible to show exactly how the text will appear on paper when printed.
2. Many word processors cannot generate tables of numbers or figures, sophisticated indexes and comprehensive tables of contents.
3. Mail merging is the splitting of a word between two lines so that the text will fit better on the page.
4. Two important features offered by word processors are automatic hyphenation and mail merging.
5. Many word processors can import graphics, format multiple columns of text, run text around graphics, etc.

## **3. Find English equivalents:**

облегчить работу; внести изменения; надстрочный символ; скрытый символ; жирный шрифт; курсивный шрифт; начертание символа; добавить дефис; подстрочный индекс; автоматическая расстановка переносов; функция подготовки стандартных писем; создать таблицу; поле; отступ; перечень слов.

#### 4. Link these sentence.

1. Documents need not be retyped from scratch just to make corrections or changes ...	a) ... primarily to print at some later time and store for safe keeping.
2. They manipulate words and text on a screen, ...	b) ... so that the user can clearly see what he or she is typing.
3. WYSIWYG shows bold, italic, underline and other type style characteristics on the screen ...	c) ...because computers can store and recall information.
4. Typing is still necessary to put the information into the computer initially, ...	d) ... margins, indents, super- and sub-scripted characters, etc.
5. Another feature is the correct display of different typefaces and format characteristics such as ...	e) ... the need to retype only applies to new information.

#### 5. Find Russian equivalents:

to retype from scratch; to run text around graphics; hidden characters; mail merging; different typefaces; tables of numbers or figures; to add a hyphen; super- and sub-scripted characters; desktop publishing; to format multiple columns of text; typeface of a character; automatic hyphenation; mail merging; a list of words; form letter; sophisticated indexes.

#### 6. Summarize the text «Word processing facilities» in 12-15 sentences.

### TEXT 1.2 BASIC FEATURES OF DATABASE PROGRAMS

#### 1. Find the answers to these questions in the text below.

1. What is a database?
2. How is information entered on a database?
3. What is a record?
4. Which tasks can be performed by using a database?
5. What are the main advantages of a database program over a manual filing system?

#### «Basic features of database programs»

With a database you can store, organize and retrieve a large collection of related information on computer. If you like, it is the electronic equivalent of an indexed filing cabinet. Let us look at some features and applications.

- Information is entered on a database via fields. Each field holds a separate piece of information, and the fields are collected together into records. For example, a record about an employee might consist of several fields which give

their name, address, telephone number, age, salary and length of employment with the company. Records are grouped together into files which hold large amounts of information. Files can easily be updated: you can always change fields, add new records or delete old ones. With the right database software, you are able to keep track of stock, sales, market trends, orders, invoices and many more details that can make your company successful.

- Another feature of database programs is that you can automatically look up and find records containing particular information. You can also search on more than one field at a time. For example, if a managing director wanted to know all the customers that spend more than £7,000 per month, the program would search on the name field and the money field simultaneously.

A computer database is much faster to consult and update than a card index system. It occupies a lot less space, and records can be automatically sorted into numerical or alphabetical order using any field.

The best packages also include networking facilities, which add a new dimension of productivity to businesses. For example, managers of different departments can have direct access to a common database, which represents an enormous advantage. Thanks to security devices, you can share part of your files on a network and control who sees the information. Most aspects of the program can be protected by user-defined passwords. For example, if you wanted to share an employee's personal details, but not their commission, you could protect the commission field.

In short, a database manager helps you control the data you have at home, in the library or in your business.

## 2. Mark the following statements as True or False.

1. Each record holds a separate piece of information, and the records are collected together into fields.
2. You cannot search on more than one field at a time.
3. Thanks to security devices, you can share part of your files on a network and control who sees the information.
4. Few aspects of the program can be protected by user-defined passwords.
5. A card index system is much faster to consult and update than a computer database.

## 3. Link these sentences.

1. Managers of different departments can have direct access to a common database, ...	a) ... you are able to keep track of many details that can make your company successful.
2. With the right database software, ...	b) ... which represents an enormous advantage.
3. Another feature of database programs is that ...	c) ... which add a new dimension of productivity to businesses.

4. If a managing director wanted to know all the customers that spend more than £7,000 per month, ...	d) ... you can automatically look up and find records containing particular information.
5. The best packages also include networking facilities, ...	e) ... the program would search on the name field and the money field simultaneously.

#### 4. Find Russian equivalents:

related information; indexed filing cabinet; to enter via fields; length of employment; to add new records; to keep track of sales; to search simultaneously; to sort into alphabetical order; networking facilities; enormous advantage; user-defined passwords; personal details; to contain particular information; at a time; different departments.

#### 5. Find English equivalents

основные функции; связанная информация; картотека; отдельная единица информации; заработная плата; обновить данные; отсортировать в алфавитном порядке; огромное преимущество; личные данные; искать одновременно; объединять в файлы; содержать большой объем информации; прямой доступ; разные отделы; найти запись; извлечь информацию.

**6. Summarize the text «Basic features of database programs» in 12-15 sentences.**

## GRAMMAR

### Совершенные времена

#### THE PERFECT TENSES

#### НАСТОЯЩЕЕ СОВЕРШЕННОЕ ВРЕМЯ

#### (THE PRESENT PERFECT TENSE)

Образование форм Present Perfect

число	лицо	Утвердительная форма	Вопросительная форма	Отрицательная форма
ед.	1	I have asked	Have I asked	I have not asked
	2	You have asked	Have you asked?	You have not asked
	3	He She It } has asked	he she it } asked?	He She It } has not asked
мн.	1	We have asked	Have we asked?	We have not asked
	2	You have asked	Have you asked?	You have not asked
	3	They have asked	Have they asked?	They have not asked



### Употребление Present Perfect:

1. Present Perfect употребляется при описании события, произошедшего в прошлом и являющегося актуальным, существенным, значимым для момента речи. Present Perfect часто используется с наречиями *lately, recently* и *just*

*I've broken my pencil. Can you give me another one?* Я сломал свой карандаш. Не дашь мне другой?

*Jack has gone to Germany.* Джек уехал в Германию (и он до сих пор там)

2. Present Perfect употребляют, когда хотят объявить нечто или сообщить о чем-то, что произошло только что-либо совсем недавно.

*I've just hurt my elbow.* Я вот ушиб локоть.

*She hasn't received any letters from him lately,* Последнее время она не получала (не получает) от него писем.

3. Present Perfect используется при описании события, которое развивалось или повторялось в период времени, охватывающий момент речи. Present Perfect употребляется с выражениями, обозначающими период времени, который к моменту речи еще не закончился, такими как *today, this morning, this evening, this term, this week, so far, up to now*. Момент начала действия может уточняться с помощью временного предлога и союза *since*, а то, как долго протекало описываемое действие, – с помощью временного предлога *for*. Present Perfect часто используется с наречиями *already, never, ever, yet*.

*I have eaten ten apples today.* Я съела сегодня десять яблок (может быть успею съесть еще пять, до того как кончится сегодняшний день).

*I haven't seen him for forty years.* Я не видел его сорок лет.

*We have belonged to the tennis club since we moved here.* Мы состоим в теннисном клубе с тех пор, как приехали сюда.

4. Present Perfect используется при обозначении события, которое рассматривается как факт жизни, из которого можно черпать жизненный опыт или делать умозаключения. То, когда именно произошло данное событие, неважно или неизвестно. Существенно, что событие вообще имело место.

*I've seen this man.* Я видела этого человека. (не важно когда)

*I've read "War and Peace".* Я читала «Войну и мир».

5. Present Perfect используется, если указано, сколько раз в период времени, охватывающий момент речи, произошло некоторое событие.

*I've been to London three times.* Я был в Лондоне три раза.

6. Present perfect используется с выражениями *this is the first time, it's the first time*.

*It's the first time I've seen a horse.* Я увидел лошадь первый раз (в жизни).

7. Употребление Present Perfect для обозначения будущего времени. Present Perfect используется в придаточных предложениях времени (Adverbial clause of time) вместо времени Future Perfect (will have done).

*After I have read the book, I'll give it to you.* После того как я прочту эту книгу, я дам ее тебе.

## ПРОШЕДШЕЕ СОВЕРШЕННОЕ ВРЕМЯ (THE PAST PERFECT TENSE)

### Образование форм Past Perfect

Глаголы в Past Perfect имеют одну и ту же форму для всех лиц единственного и множественного числа.

утвердительная форма	вопросительная форма	Отрицательная форма
He had asked	Had he asked?	He had not (hadn't) asked

### Употребление Past Perfect:

Past Perfect употребляется для обозначения действия или события, которое завершилось до определенного момента в прошлом. Этот момент может быть выражен:

1. С помощью указания на какое-то другое, более позднее по отношению к данному действию:

*He bought a new car as he had broken his old one.* Он купил новую машину, так как разбил старую.

*Bill waited about outside for his friend wondering where he had gone.* Билл ждал своего друга на улице, недоумевая, куда тот ушел.

2. С помощью таких выражений времени как *by six o'clock, by Sunday, by the end of the year*.

*I had done the homework by 5 o'clock.* Я сделал домашнюю работу к 5 часам.

*He had already left by that time.* К этому времени он уже ушел.

## БУДУЩЕЕ СОВЕРШЕННОЕ ВРЕМЯ (THE FUTURE PERFECT TENSE)

### Образование форм Future Perfect

число	лицо	утвердительная форма	вопросительная форма	отрицательная форма
ед.	1	I shall have done	Shall I have done?	I shall not have done
	2	You will have done	Will you have done?	You will not have done
	3	He } She } will have He } done	Will he } she } have it } done?	He } She } will not He } have done
мн.	1	We shall have done	Shall we have done?	We shall not have done
	2	You will have done	Will you have done?	You will not have done
	3	They will have done	Will they have done?	They will not have done

### Употребление Future Perfect:

Время Future Perfect используется при описании действия, которое будет завершено к некоторому событию или моменту времени в будущем.

*I'll have finished the work before you come back. Я закончу работу до того, как ты вернешься.*

*Many natural resources will have disappeared by the end of the century. Многие природные ресурсы исчезнут к концу этого века.*

### 1. Complete these sentences with the correct form of the verb: Present Perfect or Past Simple.

1. I already \_\_\_\_\_ (to do) my homework. Now I can go for a walk.
2. I \_\_\_\_\_ (to do) my homework yesterday.
3. He just \_\_\_\_\_ (to come) home.
4. He \_\_\_\_\_ (to come) home a minute ago.
5. Nick \_\_\_\_\_ (to play) football yesterday.
6. She already \_\_\_\_\_ (to come) from school. Now she is doing her homework.
7. I \_\_\_\_\_ (to read) this book last year.
8. I \_\_\_\_\_ (to read) this book this year.
9. I never \_\_\_\_\_ (to be) to Washington.
10. \_\_\_\_\_ you ever \_\_\_\_\_ (to be) to New York?
11. \_\_\_\_\_ you ever \_\_\_\_\_ (to see) the eruption of a volcano?
12. I \_\_\_\_\_ (not yet to eat) today.
13. He \_\_\_\_\_ (not to eat) yesterday.
14. You

\_\_\_\_\_ (to play) the piano yesterday? 15. You \_\_\_\_\_ (to play) the piano today? 16. What \_\_\_\_\_ you \_\_\_\_\_ (to prepare) for today? 17. Look at this bird-house. Mike \_\_\_\_\_ (to make) it himself. He \_\_\_\_\_ (to make) it last Sunday. 18. Where \_\_\_\_\_ you \_\_\_\_\_ my pen? I cannot find it. 19. \_\_\_\_\_ you \_\_\_\_\_ (to see) Mary today? 20. When \_\_\_\_\_ you \_\_\_\_\_ (to see) Mary? – I \_\_\_\_\_ (to see) her last week.

**2. Complete these sentences with the correct form of the verb: Past Simple or Past Perfect.**

1. When I \_\_\_\_\_ (to come) home, mother already \_\_\_\_\_ (to cook) dinner. 2. When father \_\_\_\_\_ (to return) from work, we already \_\_\_\_\_ (to do) our homework. 3. When the teacher \_\_\_\_\_ (to enter) the classroom, the pupils already \_\_\_\_\_ (to open) their books. 4. Kate \_\_\_\_\_ (to give) me the book which she \_\_\_\_\_ (to buy) the day before. 5. Nick \_\_\_\_\_ (to show) the teacher the picture which he \_\_\_\_\_ (to draw). 6. The boy \_\_\_\_\_ (to give) the goats the grass which he \_\_\_\_\_ (to bring) from the field. 7. Mother \_\_\_\_\_ (to see) that Nick \_\_\_\_\_ (not to wash) his hands. 8. The teacher \_\_\_\_\_ (to understand) that Lena \_\_\_\_\_ (not to do) her homework. 9. I \_\_\_\_\_ (to know) that my friend \_\_\_\_\_ (not yet to come). 10. Tom \_\_\_\_\_ (to return) from the cinema at five o'clock.

**3. Complete these sentences with the correct form of the verb: Past Simple, Past Continuous or Past Perfect.**

1. By eight o'clock yesterday I \_\_\_\_\_ (to do) my homework and at eight I \_\_\_\_\_ (to play) the piano. 2. By six o'clock father \_\_\_\_\_ (to come) home and at six he \_\_\_\_\_ (to have) dinner. 3. By nine o'clock yesterday grandmother \_\_\_\_\_ (to wash) the dishes and at nine she \_\_\_\_\_ (to watch) TV. 4. When I \_\_\_\_\_ (to meet) Tom, he \_\_\_\_\_ (to eat) an ice-cream which he \_\_\_\_\_ (to buy) at the corner of the street. 5. When I \_\_\_\_\_ (to come) home, my sister \_\_\_\_\_ (to read) a book which she \_\_\_\_\_ (to bring) from the library. 6. When

mother \_\_\_\_\_(to come) home, the children \_\_\_\_\_(to eat) the soup which she \_\_\_\_\_(to cook) in the morning. 7. When I \_\_\_\_\_(to ring) up Mike, he still \_\_\_\_\_(to learn) the poem which he \_\_\_\_\_(to begin) learning at school. 8. When I \_\_\_\_\_(to look) out of the window, the children \_\_\_\_\_(to play) with a ball which Pete \_\_\_\_\_(to bring) from home. 9. By ten o'clock the children \_\_\_\_\_(to sit) comfortably on the sofa and at ten they (to watch) a TV film. 10. When father \_\_\_\_\_(to come) home, we \_\_\_\_\_(to cook) the mushrooms which we \_\_\_\_\_(to gather) in the wood.

**4. Complete these sentences with the correct form of the verb: Future Simple, Future Continuous или Future Perfect.**

1. I \_\_\_\_\_ (to do) my homework tomorrow. 2. I \_\_\_\_\_(to do) my homework at six o'clock tomorrow. 3. I \_\_\_\_\_(to do) my homework by six o'clock tomorrow. 4. When I come home tomorrow, my family \_\_\_\_\_(to have) supper. 5. When you come to my place tomorrow, I \_\_\_\_\_(to read) your book. I \_\_\_\_\_(to do) my homework by the time you come. 6. Don't come to my place tomorrow. I \_\_\_\_\_(to write) a composition the whole evening. 7. I \_\_\_\_\_(not to go) to the cinema tomorrow. I \_\_\_\_\_(to watch) TV the whole evening. 8. What \_\_\_\_\_ you \_\_\_\_\_ (to do) tomorrow? 9. What \_\_\_\_\_ you \_\_\_\_\_ (to do) at eight o'clock tomorrow? 10. \_\_\_\_\_ you \_\_\_\_\_ (to play) volley-ball tomorrow? 11. \_\_\_\_\_ you \_\_\_\_\_ (to do) this work by next Sunday? 12. \_\_\_\_\_ when \_\_\_\_\_ you (to go) to see your friend next time? 13. How many pages you \_\_\_\_\_ (to read) by five o'clock tomorrow? 14. Tomorrow I \_\_\_\_\_(to begin) doing my homework as soon as I come from school. I \_\_\_\_\_(to do) my homework from three till six. My father \_\_\_\_\_(to come) home at seven o'clock tomorrow. I \_\_\_\_\_(to do) all my homework by the time he comes, and we \_\_\_\_\_(to go) for a walk together.

## UNIT II

### THE INTERNET

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- Why is the Internet so popular nowadays?
- How often do you use the Internet?
- What are the main advantages and disadvantages of the Internet?

#### TEXT 2.1 SURFING THE NET

**1. Find the answers to these questions in the text below.**

1. What is the Internet?
2. When was the first large-scale use of computer-to-computer transfer of information implemented?
3. What are the dangers that computers bring to modern society?
4. How can people avoid information overload?

#### «Surfing the Net»

What is more impressive than the pyramids, more beautiful than Michelangelo's David and more important to mankind than the wondrous inventions of the Industrial Revolution? To the converted, there can be only one answer: the Internet that undisciplined radical electronic communications network that is shaping our universe. Multimedia, the electronic publishing revolution, is entering every area of our lives — college, work and home. This new digital technology combines texts, video, sound and graphics to produce interactive language learning, football, music, movies, cookery and anything else you might be interested in.

The industrial age has matured into the information age; wherein the means to access, manipulate, and use information has become crucial to success and power. The electronic superhighway provides an entry to libraries, research institutions, databases, art galleries, census bureaus, etc. For those of us interested in intercultural communications Cyberspace is a universal community, with instant access not only to information anywhere, but also to friends old and new around the globe.

The Internet is an amorphous global network of thousands of linked computers that pass information back and forth. While the Internet has no government, no owners, no time, no place, no country, it definitely has a culture, which frequently approaches anarchy; and it has a language, which is more or less English. People who interact in an Internet environment know how addresses are formed, how to use e-mail, ftp, Usenet News, Telnet, and other software tools.

Large-scale use of computer-to-computer transfer of information was implemented by the US military in the late 60s and early 70s — part of the

superpower competition of the cold war and the arms race. The US military created an electronic network (Arpanet) to use computers for handling the transfer of large amounts of sensitive data over long distances at incredible speed. Computer-to-computer virtual connections, using satellites and fiber optics, have distinct advantages over telephone or radio communications in the event of a nuclear attack. Mathematicians and scientists (and their universities) have been linked and electronically exchanging information over the Internet since the mid-70s.

Now the Internet has become commercialized with private and public companies offering access to it. The Internet is being expanded and improved so that every home, every school, every institution can be linked to share data, information, music, video and other resources. If you have a computer or a computer terminal, some kind of connection (probably, modem and telephone line) to the Internet, and some kind of Internet service provider, you can participate in electronic communication and become a citizen of the global village.

Information technology is a good vehicle for the argument. Some scientists remind us that voluminous information does not necessarily lead to sound thinking. There are many genuine dangers that computers bring to modern society. Data glut obscures basic questions and may even hinder rather than enhance our productivity. Edutainment software and computer games degrade the literacy of children. On the other hand, only a few use PCs on network to share information and ideas. In most cases IT is used to speed routine tasks, to automate manual processes rather than to change work patterns and business practices. Most managers use their PCs to edit documents — not a good use of their time when they could be dreaming up creative applications. It is time to evaluate anew the role of science and technology in the affairs of the human species.

So, if you are riding on the information highway, you should take steps to cope with information overload. The gift of boundless information is causing a new kind of stress known alternately as technostress, information overload or Information Fatigue Syndrome. Some experts say that we don't get anywhere near the data it takes to overload our neurons. According to some estimates, our mind is capable of processing and analyzing many gigabytes of data per second — a lot more data than any of today's supercomputers can process and act on in real time. We feel overloaded by the quantity of information because we are getting it unfiltered. We should filter out the junk and turn data into shapes that make sense to us. Stress in moderation is good: it drives us to achieve, stimulates our creativity and is the force behind social and technological breakthroughs. Stress is revealing how humans are in some ways more primitive than the technology they have

created. Meditation, muscular relaxation, aerobics, jogging, yoga can be effective stress relievers, but no technique is universal: experiment and find the one that best works for you.

The cornerstone of an economy is land, labor, capital and entrepreneurial spirit. That traditional definition is now being challenged. Today you find a fifth key economic element: information dominant. As we evolve from an industrial to an information society, our jobs are changing from physical to mental labor. Just as people moved physically from farms to factories in the Industrial age, so today people are shifting muscle power to brain power in a new, computer-based, globally linked by the Internet society.

## **2. Mark the following statements as True or False.**

1. The information age has matured into the industrial age; wherein the means to access, manipulate, and use information has become crucial to success and power.

2. Some scientists remind us that voluminous information necessarily lead to sound thinking.

3. Large-scale use of computer-to-computer transfer of information was implemented by the USSR military in the late 50s and early 60s.

4. As we evolve from an industrial to an information society, our jobs are changing from mental labor to physical.

5. It is time to evaluate anew the role of science and technology in the affairs of the human species.

## **3. Find Russian equivalents:**

fiber optics wondrous inventions; instant access; research institutions; distinct advantages; crucial to success and power; entry to libraries; at incredible speed; intercultural communications; universal community; sensitive data; war and; arms race; to participate in electronic communication; voluminous information; to degrade the literacy; genuine dangers; to hinder rather than enhance; to cope with; census bureaus; information overload; technological breakthroughs; to evaluate anew.

## **4. Find English equivalents:**

научные достижения, оптоволокно; мгновенный доступ; избыток данных; информационная перегрузка; художественная галерея; невероятная скорость; перерасти в информационный век; явные преимущества; межкультурная коммуникация; средства доступа; увеличивать производительность; по-новому оценить; широкомасштабное использование, международное сообщество.

## **5. Summarize the text «Surfing the Net» in 12-15 sentences.**



## TEXT 2.2 SECURITY ON THE INTERNET

### 1. Find the answers to these questions in the text below.

1. Why is security so important on the internet?
2. What security standard is used by most banks to make online transactions secure?
3. How can we protect and keep our e-mail private?
4. What methods are used by companies to make internal networks secure?
5. Which ways can a virus enter a computer system?

### «Security on the Internet»

There are a lot of benefits from an open system like the Internet, but we are also exposed to hackers who break into computer systems just for fun, as well as to steal information or propagate viruses. So how do you go about making online transactions secure?

#### **Security on the Web**

The question of security is crucial when sending confidential information such as credit card numbers. For example, consider the process of buying a book on the Web. You have to type your credit card number into an order form which passes from computer to computer on its way to the online bookstore. If one of the intermediary computers is infiltrated by hackers, your data can be copied. It is difficult to say how often this happens, but it's technically possible.

To avoid risks, you should set all security alerts to high on your Web browser. Netscape Communicator and Internet Explorer display a lock when the Web page is secure and allow you to disable or delete 'cookies'. If you use online bank services, make sure your bank uses digital certificates. A popular security standard is SET (secure electronic transactions).

#### **E-mail privacy**

Similarly, as your e-mail message travels across the net, it is copied temporarily on many computers in between. This means it can be read by unscrupulous people who illegally enter computer systems.

The only way to protect a message is to put it in a sort of 'envelope', that is, to encode it with some form of encryption. A system designed to send e-mail privately is Pretty Good Privacy, a freeware program written by Phil Zimmerman.

#### **Network security**

Private networks connected to the Internet can be attacked by intruders who attempt to take valuable information such as Social Security numbers, bank accounts or research and business reports.

To protect crucial data, companies hire security consultants who analyse the risks and provide security solutions. The most common methods of protection are passwords for access control, encryption and decryption systems, and firewalls.

### **Virus protection**

Viruses can enter a PC through files from disks, the Internet or bulletin board systems. If you want to protect your system, don't open e-mail attachments from strangers and take care when downloading files from the Web. (Plain text e-mail alone can't pass a virus.)

Remember also to update your anti-virus software as often as possible, since new viruses are being created all the time.

### **2. Mark the following statements as True or False.**

1. Hackers break into computer systems just for fun, as well as to steal information or propagate viruses.
2. The question of security is unimportant when sending confidential information such as credit card numbers.
3. The most common methods of protection are passwords for access control, encryption and decryption systems, and firewalls.
4. Your e-mail message cannot be read by unscrupulous people who illegally enter computer systems.
5. A system designed to send e-mail privately is Pretty Good Privacy.

### **3. Link these sentences.**

1. If one of the intermediary computers is infiltrated by hackers, ...	a) ... companies hire security consultants.
2. If you want to protect your system, ...	b) ... make sure your bank uses digital certificates.
3. To protect crucial data, ...	c) ... it is copied temporarily on many computers in between.
4. If you use online bank services, ...	d) ... take care when downloading files from the Web.
5. As your e-mail message travels across the net, ...	e) ... your data can be copied.

### **4. Find Russian equivalents:**

online transactions; exposed to hackers; credit card numbers; order form; valuable information; intermediary computer; security alerts; crucial data; bulletin board system; common methods of protection; access control; encryption and decryption systems; freeware program; to make sure; unscrupulous people; e-mail attachment.

## 5. Find English equivalents:

контроль доступа; сигнал тревоги; вывести из строя; свободные программные средства; ценная информация; электронная доска объявлений; важные данные; аппаратно-программные средства межсетевой защиты; распространять вирусы; бланк заказа; счет в банке.

6. Summarize the text «Security on the Internet» in 12-15 sentences.

## GRAMMAR СОСЛАГАТЕЛЬНОЕ НАКЛОНЕНИЕ (THE SUBJUNCTIVE MOOD)

В английском языке существуют две формы сослагательного наклонения: сослагательное I (*Subjunctive I*), которое употребляется в простом предложении и в главном предложении сложноподчиненного предложения, и сослагательное II (*Subjunctive II*), которое употребляется в придаточном предложении.

**Сослагательное I** обозначает **реальное условие** и относится к будущему времени.

**If I have** time tonight, I **will finish** reading a novel.

**Если** сегодня вечером у меня будет время, то я **закончу** читать роман.

Вместо **If** можно также использовать **when**

**Сослагательное II** обозначает **маловероятное условие**.

Если высказывание относится к настоящему или будущему времени (*Present Subjunctive*), форма сослагательного I совпадает с формой Future-in-the-Past:

It's pity you can't come tomorrow. **Peter would help you.**

Жаль, что вы не можете прийти завтра. Петр помог бы вам.

Если высказывание относится к предшествующему периоду (*Past Subjunctive*), то форма сослагательного наклонения совпадает с формой Future Perfect-in-the-Past:

• I'm so sorry I had no money with me yesterday, **I would have bought that dress.** – Жаль, что у меня вчера не было с собой денег, я бы купила то платье.

• Why didn't you phone him yesterday? **He would have helped you.**  
– Почему ты не позвонил ему вчера? Он бы помог тебе.

**Сослагательное III** обозначает **невероятное условие**.

Форма сослагательного II совпадает с формой Past Indefinite (Simple), если высказывание относится к настоящему или будущему

времени, и с формой Past Perfect, если высказывание относится к предшествующему периоду.

• **If I had any free time now or tomorrow, I should do the work myself.** – Если бы у меня было свободное время сейчас или завтра, я бы сделала эту работу сама.

• **If I had had any free time yesterday, I should have done the work myself.** – Если бы у меня было свободное время вчера, я бы сделала работу сама.

Глагол *to be* имеет форму *were* для всех лиц в настоящем и будущем времени и *had been* для всех лиц в прошедшем времени:

• **If I were rich I shouldn't work at all.** – Если бы я был богат, я бы совсем не работал.

• **If I had been there too, I could have heard the story myself.** – Если бы я был там, я бы мог услышать рассказ сам.

### 1. Complete these sentences with the correct form of the verb.

1. I should be delighted if I (to have) such a beautiful fur-coat.
2. If it (to rain), we shall have to stay, at home.
3. If he (to work) hard, he would have achieved great progress.
4. If it is not too cold, I (not to put) on my coat.
5. I (to write) the composition long ago if you had not disturbed me.
6. If he (not to read) so much, he would not be so clever.
7. If my friend (to be) at home, he will tell us what to do.
8. If he were not such an outstanding actor, he (not to have) so many admirers.
9. If you (to give) me your address, I shall write you a letter
10. If she (not to be) so absent-minded, she would be a much better student.
11. If my sister does not go to the south, we (to spend) the summer in St Petersburg together.
12. If they (not to go) to Moscow last year, they would not have heard that famous musician.
13. If you (not to get) tickets to the Philharmonic, we shall stay at home.
14. If you were not so careless about your health, you (to consult) the doctor.

### 2. Translate into English.

1. Если бы он был умнее, он бы не пошел вчера в лес.

2. Если бы она не прислала вчера это письмо, мой брат был бы сейчас дома.

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3. Что бы мы сейчас делали, если бы мама не испекла вчера пирог?

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4. Жаль, что вы не слышали музыку Рахманинова. Если бы вы ее слышали, вы бы знали, какой это замечательный композитор.

---

5. Я уверен, что все были бы рады, если бы вечер состоялся.

---

6. Он так изменился! Если бы вы его встретили, вы бы его не узнали.

---

7. Если бы я был на вашем месте, я бы посоветовался с родителями.

---

8. Если бы сейчас подошел трамвай, мы бы не опоздали.

---

9. Если бы он знал, что это вас расстроит, он был бы осторожнее.

---

10. Если бы вы мне помогли решить эту задачу, я был бы вам очень благодарен.

---

11. Жаль, что нам раньше не пришло в голову поискать книгу в библиотеке. Мы бы сделали работу вовремя и сейчас были бы уже свободны.

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## UNIT III

### computer & design

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• How do you think these professions might use computers?  
Compare answers with other students in your group.

**Architects**

**Interior designers**

**Farmers**

**Sales people**

**Musicians**

### TEXT 3.1 WEB DESIGN

#### **2. Find the answers to these questions in the text below**

1. What is a web site?
2. What editing tool is used for creating web pages?
3. What should you do before you start building a site?
4. Is it recommended to insert graphics and sounds?
5. What should you to publish web pages on the Internet?

#### «Web design»

A website is a collection of web pages, set up by an organization or individuals. The pages are all linked together. You can move from one page to another by clicking on words and pictures called hyperlinks. Most web sites contain a home page. A home page is an introductory page which tells visitors what information is contained in a Web site. It has links to other areas of the site. It can also include information such as when a site was built or updated. A home page is also default page on which a web browser starts.

You can create a basic web page using a text editor or a word processor, but you need to know a code called HTML, or Hypertext Mark-up Language. This consists of HTML commands, called tags, which are placed around pieces of text to tell the web browser how to display text or graphics. You can enter different commands to define text size and font, format paragraphs, add colour, etc.

If you are not familiar with HTML, you can use a Web editor like Microsoft FrontPage or Macromedia Dreamweaver to simplify the process. Web editors are user-friendly and WYSIWYG (What you see is what you get). Different buttons and menu items enable you to design a page without writing HTML, i.e. they automatically produce the tags for text, tables, image maps, frames, etc. You can view the source code for any page you like by clicking the option "Page source" in the browser's menu.

Before creating a web page, you should plan it carefully. You have to decide what sort of information you're going to include and how you are going to organize the contents. So it's good idea to design the website on paper first. Making a few diagrams will help you divide the contents and clarify the relationships between the documents.

Web sites with an effective use of graphics are more inviting and communicative than plain text. So you may like to insert different types of pictures: scanned photos, bars, icons, backgrounds, and moving images. But they should have a clear purpose, don't insert photos or animation just to make the pages look nice. Avoid placing a large number of graphics on your page, because graphics can take a long time to download and visitors give up if the pages take too long to appear.

It's fun to experiment with colours. You may like to choose different colours for the background and the text. But make sure that all the text is easy to read and don't use very bright colours.

Once you've created and saved a few pages; it's time to join them together with hyperlinks. A good design principle is not to put too many links on one page; people may lose patience or get distracted. And check that all the links are correct since web addresses sometimes are changed.

To publish your web page, you have to find a server and then transfer all the files from your PC to the server. But before that you should open the pages in your browser to see how they will look online. This will allow you to check all the links work and view any animation on your page in action.

And the final touch: include the date to show that your site is up-to-date.

**2. Mark the following statements as True or False.**

1. Web sites with graphics are more inviting and communicative than plain text, so you should insert a lot of graphics and sounds.
2. A good design principle is to put as many links on one page as possible.
3. You can view the source code for any page you like by clicking the option "Page source" in the browser's menu.
4. You may choose different colors for the background and the text, but use only very bright colors.
5. It's good idea to design the website on paper first.

**3. Link these sentences.**

1. Once you have created a few pages, ...	a) ... it's time to join them together with hyperlinks.
2. To publish your web page, ...	b) ... but you need to know a code called HTML.

3. Once you've created and saved a few pages; ...	c) ... don't insert photos or animation just to make the pages look nice.
4. You can create a basic web page using a text editor or a word processor, ...	d) ... you have to find a server and then transfer all the files from your PC to the server.
5. But they should have a clear purpose, ...	e) ... you should join them together with hyperlinks.

#### **4. Find English equivalents:**

язык гипертекстовой разметки; текстовый редактор; устанавливаемый по умолчанию; перестать ждать; слишком долго загружаться; домашняя страница; исходный код; яркий фон; соединенные страницы; своевременно обновлять; схема web-страницы; упростить процесс; последний штрих; привлекательная страница.

#### **5. Find Russian equivalents:**

introductory page; clarify the relationships; the final touch; default page; to define text size and font; to simplify the process; to give up; source code; plain text; inviting web page; clear purpose; take too long to appear; make sure; get distracted; up-to-date; linked together; home page; loose patience; to set up; to create a basic page; site map.

#### **6. Summarize the text «Web design» in 12-15 sentences.**

### **TEXT 3.2 COMPUTER GRAPHICS**

#### **1. Find the answers to these questions in the text below**

1. What are "computer graphics"?
2. What do the acronyms "cad", "cae" and "cam" stand for?
3. What are the benefits of using computer graphics in the car industry?
4. What are the benefits of using graphics in business?
5. What is 'computer animation'?

#### **«Computer graphics»**

Computer graphics are pictures and drawings produced by computer. A graphics program interprets the input provided by the user and transforms it into images that can be displayed on the screen, printed on paper or transferred to microfilm. In the process the computer uses hundreds of mathematical formulas to convert the bits of data into precise shapes and colours. Graphics can be developed for a variety of uses including presentations, desktop publishing, illustrations, architectural designs and detailed engineering drawings.



Mechanical engineers use sophisticated programs for applications in computer-aided design and computer-aided manufacturing. Let us take, for example, the car industry. CAD software is used to develop, model and test car designs before the actual parts are made. This can save a lot of time and money.

Computers are also used to present data in a more understandable form: electrical engineers use computer graphics to design circuits and people in business can present information visually to clients in graphs and diagrams. These are much more effective ways of communicating than lists of figures or long explanations.

Today, three-dimensional graphics, along with colour and animation, are essential for such applications as fine art, graphic design, Web-page design, computer-aided engineering and academic research.

Computer animation is the process of creating objects and pictures which move across the screen; it is used by scientists and engineers to analyze problems. With the appropriate software they can study the structure of objects and how it is affected by particular changes. Basically, computer graphics help users to understand complex information quickly by presenting it in a clear visual form.

### **A basic tool palette**

A graphics package is the software that enables you to draw and manipulate objects on a computer. Each graphics package has its own facilities, plus a wide range of basic drawing and painting tools. The collection of tools in a package is known as a palette.

The basic shapes which are used to make graphical objects are called 'primitives'. These are usually geometric, such as lines between two points, arcs, circles, polygons, ellipses and even text. You can choose both the primitive you want and where it should go on the screen. Moreover, you can specify the 'attributes' of each primitive, such as its colour, line type, fill area, interior style and so on.

The various tools in a palette usually appear together as pop-up icons in a menu. To use one you activate it by clicking on it. For example, if you want to draw a rectangle, you activate the rectangle tool and the pop-up options allow you to choose the origin of the rectangle (using the insertion point as its centre or corner) and the possibility of drawing a rectangle with rounded corners.

## **2. Mark the following statements as True or False.**

1. Computer graphics are pictures and drawings produced by computer.
2. A graphics program interprets the input provided by the user and transforms it into text that can be displayed on the screen.

3. Graphics can be developed only for desktop publishing.
4. CAD software is used to develop, model and test car designs after the actual parts are made.
5. Mechanical engineers use sophisticated programs for applications in computer-aided design and computer-aided manufacturing.

### 3. Link these sentences.

1. In the process the computer uses hundreds of mathematical formulas ...	a) ... plus a wide range of basic drawing and painting tools.
2. Each graphics package has its own facilities, ...	b) ... people in business can present information visually to clients in graphs and diagrams.
3. Computer animation is the process of creating objects and pictures which move across the screen; ...	c) ... to convert the bits of data into precise shapes and colours.
4. Computers are also used to present data in a more understandable form: ...	d) ... such as lines between two points, arcs, circles, polygons, ellipses and even text.
5. 'Primitives' are usually geometric, ...	e) ... it is used by scientists and engineers to analyze problems.

### 4. Find Russian equivalents:

precise shapes and colours; detailed engineering drawings; sophisticated programs; computer-aided design; actual parts; to design circuits; list of figures; computer-aided manufacturing; fine art; academic research; basic tool palette; graphics package; basic shapes; to specify the 'attributes'; insertion point; rectangle with rounded corners; fill area; pop-up icons.

### 5. Find English equivalents:

автоматизированное проектирование; изобразительное искусство; базисный элемент; трехмерная графика; представлять данные; закрашенная область; всплывающее меню; точка вставки; прямоугольник; точный чертеж; в понятной форме; автоматизированное производство; инструментальный набор; эффективный способ; дуга; разработать проект; многоугольник.

### 6. Summarize the text «Computer graphics» in 12-15 sentences.

## GRAMMAR МОДАЛЬНЫЕ ГЛАГОЛЫ MODAL VERBS

Модальными глаголами в английском языке называются глаголы, которые выражают не действие (состояние), а отношение к нему: возможность, необходимость или способность совершения действия, его вероятность и т.п. Характеристика:

- **Не изменяются по лицам:** I can, she may, you must. Сравним: I take, she takes, you take (исключения to be, to have).

- известно, что почти все глаголы могут образовывать формы причастия, инфинитива или герундия. Эти же, **не имеют неличных форм**, то есть окончания ing.

- два глагола в английском предложении очень редко могут стоять рядом, в большинстве случаев они требуют после себя инфинитив с частицей to. А вот после модальных всегда употребляется **bare infinitive (без to)**. Хотя здесь есть три исключения: have to, be to, ought to.

- при образовании отрицательных и вопросительных предложений модальные глаголы **не требуют вспомогательных глаголов**. А некоторые из них совпадают с ними по форме. Это и упрощает язык. При образовании вопросительных предложений, модальный глагол ставится перед подлежащим, а в отрицании к нему добавляется not. В разговорной речи часто используют сокращенные формы:

- cannot (пишется слитно) = can't, must not=mustn't, have not=haven't, is not=isn't, shall not=shan't, should not=shouldn't, will not=won't, need not=needn't, ought not=oughtn't, daren't.

- не используются самостоятельно, служат дополнением сказуемому.

Модальный глагол и его эквивалент	Выражает	Present	Past	Future
<i>can</i> <i>to be able to</i>	физическую или умственную способность	can am/ is/ are able to	could was/were able to	-shall/ will be able to
<i>may</i> <i>to be allowed (to)</i>	разрешение, просьба	may is/ am/ are allowed to	might was/ were allowed to	-shall/ will be allowed to

<i>must</i>	должен, необходимость выполнить что-либо	must	-	-
<i>have to</i>	необходимость выполнения действия из-за обстоятельств	has/ have to	had to	shall/ will have to
<i>to be to</i>	необходимость выполнения из-за заранее запланированного, по договоренности	am/ is/ are to	was/ were to	-
<i>shall</i>	желание получить распоряжение, угроза, предостережение	-	-	shall (Shall he wait? — Ему подождать?)
<i>should</i>	рекомендации по совершению действия, совет	should	-	-
<i>will</i>	оттенок желания, намерения, согласия, настойчивости	-	-	will
<i>would</i>	оттенок намерения, просьбы, повторности действия в прошлом			
<i>ought</i>	моральный долг, совет (+ not + perfectinf. — упрек, порицание)	ought to	-	-
<i>need</i>	необходимость совершения действия	need		
<i>dare</i>	возмущение	dare	dared	

**1. Complete these sentences with the correct form of the verb.**

1. He ... (can't/couldn't) open the window as it was stuck.
2. Interpreters ... (may/must) translate without dictionaries.
3. ... (Can/May) I use me your bike for today?
4. ... (May/Could) you give me the recipe for this cake?
5. I hardly ever see Jane, she ... (may/might) have moved to Africa.
6. Take an umbrella. It ... (may/can) rain.
7. You ... (could/should) stop smoking. You know you ... (cannot/must not) buy health.
8. You ... (may/must) finish the article as soon as possible.
9. Liz doesn't ... (ought to/have to) keep to a diet anymore.

10. Lara ... (can/might) get a play station for her birthday.
11. You ... (must not/needn't) read in the dark.
12. My grandfather is retired, so he ... (shouldn't/doesn't have to) go to work.
13. The fridge is full, so we ... (must not/needn't) go shopping.
14. Our employees ... (can/must) sign this agreement.
15. We ... (may/ought to) reserve a table in advance if we want to have dinner there.
16. I ... (can't/needn't) believe it! You ... (have to/must) be joking.
17. Ann ... (must/is to) finish school next year.
18. Sorry, I'm late. I ... (needed to/had to) wait for the plumber.
19. What time do we ... (should/have to) be at the railway station?
20. Don't wait for me tonight. I ... (might/must) be late.
21. I ... (may not/can't) watch this film. It's too boring.
22. We've got a dishwasher, so you ... (couldn't/needn't) wash-up.
23. You look very pale, I think you ... (need/should) stay at home.
24. ... (Could/Might) you, please, pass me the mustard?

**2. Link the sentences with the similar meanings.**

1. Bill must complete a presentation tomorrow.
  2. Bill couldn't complete it yesterday.
  3. Birgit says she can help him tomorrow.
  4. She has to help him, or the presentation will not be completed on time.
  5. Birgit's boss says she may help Bill.
- a. She needs to help him, or the presentation will not be completed on time.
  - b. Birgit's boss says she is allowed to help Bill.
  - c. Bill will have to write a presentation tomorrow.
  - d. Birgit says she will be able to help him tomorrow.
  - e. Bill wasn't able to complete it yesterday.

**3. Complete the sentences with must, mustn't or needn't.**

1. We haven't got much time. We \_\_\_\_\_ hurry.
2. We've got plenty of time. We \_\_\_\_\_ hurry.
3. We have enough food at home so we \_\_\_\_\_ go shopping today.
4. Jim gave me a letter to post. I \_\_\_\_\_ remember to post it.
5. Jim gave me a letter to post. I \_\_\_\_\_ forget to post it.
6. There's plenty of time for you to make up your mind. You \_\_\_\_\_ decide now.

7. You \_\_\_\_\_ wash those tomatoes. They've already been washed.

8. This is a valuable book. You \_\_\_\_\_ look after it carefully and you \_\_\_\_\_ lose it.

9. 'What sort of house do you want to buy? Big?' 'Well, it \_\_\_\_\_ be big  
- that's not important. But it \_\_\_\_\_ have a nice garden – that's essential.'

## **ASSIGNMENT 1 DESKTOP PUBLISHING**

### **1. Read and translate the text «Desktop publishing»**

«Desktop publishing» refers to the use of personal computers to design, implement and publish books, newsletters, magazines and other printed pieces. Desktop publishing is really a combination of a few different processes including word processors, graphic design, information design, output and prepress technologies, and sometimes image manipulation. There are also many applications that support these processes, including font creation applications (that allow users to design and create their own typefaces, called fonts) and type manipulation applications (that allow users to modify text in visually creative ways).

Font software is software that provides user with a range of fonts. A font is a set of characters which all have the same style, shape and size. For example you, might have Times Italic in 12 point. Times Italic is the name of the typeface and “12 point” refers to the size.

Fonts can be of two types: scalable and bit-mapped fonts. As regards scalable fonts, you can alter their shape or size because they are stored as an outline and this outline can be changed. With a font manipulation program you can change the fonts, you can enlarge scalable fonts, you can stretch them, rotate them, do all kinds of things with them.

They are much more flexible than bit-mapped fonts which cannot be changed at all. This kind of font is stored as a whole image made up of dots, not just as an outline, and you get a distorted image of the font if you try to scale it. There are two types of scalable fonts produced by different companies: True Type from Apple and Microsoft, and PostScript from Adobe Systems.

Desktop publishing centers around a layout application. A layout application is used to import text from word processing applications, graphics from paint and drawing applications and images from scanning or image manipulation applications, and to combine and arrange them all on a page.

They typically can bring in or import many different types of files. It is this ability to manipulate so many different items and control how they are used that makes layout software so popular and useful. This software is usually the last stop before a document is printed. Once composed and designed, these files can be printed onto film by high quality devices, called imagesetters, and printed on a traditional printing press.

Because imagesetters are expensive devices, most people cannot afford to buy their own. There are, however, companies called service bureaux that specialize in printing other people's files on imagesetters, just like copy stores make copiers available to others. Service bureaux can offer imageset output, laser printer output, colour laser printer output and even slide or film recorder output. In addition, some have colour scanning equipment.

## **2. Find Russian equivalents:**

image manipulation; scalable fonts; set of characters; a range of fonts; bit-mapped fonts; character outline; distorted image; imagesetter; service bureau; printed pieces; range of fonts; to alter the shape and size; font set; prepress technology; to enlarge fonts; film recorder; to stretch fonts, to create typefaces; graphic design; desktop publishing.

## **3. Find English equivalents**

бюро обслуживания; информационный бюллетень; устройство фотовывода; красочное оформление; искаженное изображение; тип шрифта; контур знака; подготовка к печати; устройство для записи на фотопленку; масштабируемый шрифт; манипулирование изображениями; растровый шрифт; гарнитура шрифта; набор шрифтов; копировальное устройство; НИС.

## **4. Summarize the text «Desktop publishing» in 12-15 sentences.**

### **ASSIGMENT 2**

#### **VIRUSES**

### **1. Read and translate the text «Viruses».**

The terms viruses and vaccines have entered the jargon of the computer industry to describe some of the bad things that can happen to computer systems and programs. Unpleasant occurrences like the March 6, 1991, attack of the Michelangelo virus will be with us for years to come. In fact, from now on you need to check your computer for the presence of Michelangelo before March 6 every year — or risk losing all the data on your hard disk when you turn on your machine that day. And Macintosh users need to

do the same for another intruder, the Jerusalem virus, before each Friday the 13th, or risk a similar fate for their data.

A virus, as its name suggests, is contagious. It is a set of illicit instructions that infects other programs and may spread rapidly. The Michelangelo virus went worldwide within a year. Some types of viruses include the worm, a program that spreads by replicating itself; the bomb, a program intended to sabotage a computer by triggering damage based on certain conditions – usually at a later date; and the Trojan horse, a program that covertly places illegal, destructive instructions in the middle of an otherwise legitimate program. A virus may be dealt with by means of a vaccine, or antiviral program, a computer program that stops the spread of and often eradicates the virus.

### **Transmitting a Virus**

Consider this typical example. A programmer secretly inserts a few unauthorized instructions in a personal computer operating system program. The illicit instructions lie dormant until three events occur together: 1) the disk with the infected operating system is in use; 2) a disk in another drive contains another copy of the operating system and some data files; and 3) a command, such as COPY or DIR, from the infected operating system references a data file. Under these circumstances, the virus instructions are now inserted into the other operating system. Thus the virus has spread to another disk, and the process can be repeated again and again. In fact, each newly infected disk becomes a virus carrier.

### **Damage from viruses**

We have explained how the virus is transmitted; now we come to the interesting part — the consequences. In this example, the virus instructions add 1 to a counter each time the virus is copied to another disk. When the counter reaches 4, the virus erases all data files. But this is not the end of the destruction, of course; three other disks have also been infected. Although viruses can be destructive, some are quite benign; one simply displays a peace message on the screen on a given date. Others may merely be a nuisance, like the Ping-Pong virus that bounces a "Ping-Pong ball" around your screen while you are working. But a few could result in disaster for your disk, as in the case of Michelangelo.

### **Prevention**

A word about prevention is in order. Although there are programs called vaccines that can prevent virus activity, protecting your computer from viruses depends more on common sense than on, building a "fortress" around the machine. Although there have been occasions where commercial software was released with a virus, these situations are rare. Viruses tend to show up most often on free software acquired from friends. So you should



always test diskettes you share with others by putting their write-protection tabs in place. If an attempt is made to write to such a protected diskette, a warning message appears on the screen. It is not easy to protect hard disks, so many people use antivirus programs. Before any diskette can be used with a computer system, the antivirus program scans the diskette for infection. The drawback is that once you buy this type of software, you must continuously pay the price for upgrades as new viruses are discovered.

### **2. Find Russian equivalents:**

unpleasant occurrences; at a later date; similar fate; illegal and destructive instructions; to spread rapidly; certain conditions; to place covertly; to eradicate the virus; to lie dormant; under these circumstances; a virus carrier; to erase all data; to spread by replicating; on a given date; to be a nuisance; common sense; a set of illicit instructions; show up.

### **3. Find English equivalents:**

здравый смысл; приводить в действие; в легкой форме; настоящее бедствие; повредить данные, нанести ущерб; копировать себя; жесткий диск; постоянно обновлять; подобная судьба; разрушительные команды; быстро распространяться; искоренить вирус; при таких обстоятельствах, передача вируса; наклейка защиты от записи.

### **4. Summarize the text «Viruses» in 12-15 sentences..**

## **ASSIGNMENT 3 LANS AND WANS**

### Vocabulary

1. LAN (local area network) – локальная сеть
2. WAN (Wide-Area Network) – глобальная сеть
3. ISDN (integrated services digital network) – цифровая сеть связи с комплексными услугами
4. ADSL (Asymmetric Digital Subscriber Line) – асимметричная цифровая абонентская линия
5. FDDI (Fiber Distributed Data Interface) – распределенный интерфейс передачи данных по волоконно-оптическим каналам
6. FDDL (frequency-division data link) – канал передачи данных с частотным разделением
7. node – узел
8. network topology – топологическая схема сети, топология сети
9. Token Ring – маркерное кольцо

10. gateway – межсетевой переход, межсетевой интерфейс
11. fibre-optic cable – оптоволоконный кабель
12. backbone – базовый, основной, магистральный, магистраль сети
13. bandwidth – полоса пропускания
14. glass fibre – стекловолокно
15. dish aerial – параболическая антенна
16. concave reflector – вогнутый отражатель, вогнутое зеркало
17. to amplify – усиливать

## **1. Read and translate the text « LANs and WANs».**

### **Network configurations**

A network is a group of devices (PCs, printers, etc.) or “nodes” connected by communications circuits so that users can share data, programs and hardware resources. A network has two main elements: the physical structure that links the equipment and the software that allows communication.

The physical distribution of nodes and their circuits is known as network 'topology' or 'architecture'. The software consists of the protocols, i.e. the rules which determine the formats by which information may be exchanged between different systems. We could say that cables and transceivers (the architecture) allow computers to 'hear' one another, while the software is the 'language' that they use to 'talk' to one another over the network.

As regards the cables, they consist essentially of the transceiver - the hardware that sends and receives network signals. At present the most widely used transceivers are Token Ring, Ethernet and LocalTalk. Token Ring is the most common method of connecting PCs and IBM mainframes. Most Token Ring adapters transmit data at a speed of 16 megabits per second. With Ethernet, data is transmitted at 100 Mbits/sec. The newest version, Gigabit Ethernet, supports data rates of 1 Gb per second. Ethernet provides a very robust, trouble-free architecture with good levels of performance. In this regard, so Ethernet is the best solution for fast and intensive activity.

LocalTalk transceivers are the cheapest of all because they are directly included in each Macintosh. However, they're a bit slow, which is why most Macs come with built-in Ethernet.

As for protocols, these are rules which describe things like transmission speed and physical interfaces. The Token Ring protocol avoids the possibility of collisions. To transmit data, a workstation needs a token, and as there is only one token per network, holding one guarantees sole use of the network. With Ethernet there are other options, of which TCP/IP (Transmission Control Protocol/Internet Protocol) is perhaps the most useful since it allows different operating systems to communicate with each other. With regard to LocalTalk networks, they use AppleTalk protocols. The Macintosh

operating system includes the AppleTalk manager and a set of drivers that let programs on different Macs exchange information.

LANs can be interconnected by gateways. These devices help manage communications and control traffic on large networks. They change the data to make it compatible with the protocols of different networks.

### **WANs**

For long-distance or worldwide communications, computers and LANs are usually connected into a wide area network (WAN) to form a single, integrated network. The largest WAN in existence is the Internet.

Networks can be linked together by either telephone lines or fibre-optic cables. For example, ISDN (integrated services digital network) and ADSL (Asymmetric Digital Subscriber Line) are an international standard for transmitting digital text, sound, voice and video data over telephone lines. On the other hand, FDDI (fibre distributed data interface) is an optical-fibre network. It transmits data at great speed - 100 megabits per second. A variation called FDDT transmits data at 200 Mbps. FDDI networks are typically used as backbones for wide area networks.

Modern telecommunications use fibre-optic cables because data can be transmitted at a very high speed through the extremely wide bandwidths of glass fibres. The fibre system operates by transmitting light pulses at high frequencies along the glass fibre. This offers considerable advantages: (i) the cables require little physical space; (ii) they are safe because they don't carry electricity; (iii) they avoid electromagnetic interference.

Networks on different continents can also be connected via satellite. Computers are so connected by a modem either to ordinary telephone wires or fibre-optic cables, which are linked to a dish aerial. This aerial has a large concave reflector for the reception and sending of signals. Then, when signals are received by the satellite, they are amplified and sent on to workstations in another part of the world.

### **2. Find Russian equivalents:**

to transmit data; communications circuits; Token Ring; distribution of nodes; Fiber Distributed Data Interface; local area network; concave reflector; glass fibre; network topology; Asymmetric Digital Subscriber Line; robust and trouble-free architecture; frequency-division data link; gateway; electromagnetic interference; integrated services digital network; dish aerial; Wide-Area Network; good levels of performance; extremely wide bandwidths; considerable advantages.

### **3. Find English equivalents:**

локальная сеть; топологическая схема сети; электромагнитные помехи; параболическая антенна; межсетевой переход; канал передачи

данных с частотным разделением; приемопередатчик; конфликтная ситуация; глобальная сеть; полоса пропускания; стекловолокно; маркерное кольцо; асимметричная цифровая абонентская линия; вогнутый отражатель; коммуникационные каналы; передавать данные; узел сети; магистраль сети.

**4. Summarize the text « LANs and WANs» in 12-15 sentences.**

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Учебное издание

# ENGLISH FOR INFORMATION TECHNOLOGY

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## АНГЛИЙСКИЙ ЯЗЫК ДЛЯ ИТ-СПЕЦИАЛИСТОВ

УЧЕБНОЕ ПОСОБИЕ

Публикуется в авторской редакции

Компьютерная верстка *В.Л. Сыровец*  
Дизайн обложки *В.Л. Сыровец*

ООО «Ставропольское издательство «Параграф»  
г. Ставрополь, ул. Розы Люксембург, 57, к.17  
тел.: + 7-928-339-48-78  
[www.paragraf.chat.ru](http://www.paragraf.chat.ru)

Подписано в печать 17.12.2019

Формат 60x84/16. Гарнитура Times New Roman.  
Бумага офсетная. Печать трафаретная.  
Усл. печ. л. 2,33. Уч.-изд. л. 1,79  
Тираж 300. Заказ № 19096.

Отпечатано в ООО «Ставропольское издательство «Параграф»