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УНИВЕРСИТЕТ»

COMPUTERS TODAY

Учебно-методическое пособие для вузов

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Введение

Предлагаемое учебное пособие предназначено для самостоятельной работы студентов 1 курса факультета прикладной математики, информатики и механики над литературой по специальности на английском языке. В пособие включена подборка оригинальных текстов по профилю будущей специальности, часть которой подвергнута незначительной обработке по соображениям методического характера.

Тексты снабжены заданиями, направленными на формирование навыков как быстрого информативного, так и изучающего чтения литературы по специальности и умений аннотирования и реферирования. В пособие включен список фраз-клише для составления аннотаций к текстам. Части пособия «Before you read» и «After you read» ставят целью предварить и, соответственно, подытожить работу с текстами и обеспечивают развитие навыков ведения беседы на профессиональные темы. Пособие может быть использовано для работы в аудитории.

Part I. Before you read

1. Do you use computers? Why do you use them? What do you like about them and what do you not like? Do you think you are a computer-literate person?

2. Here is Bill Gates' opinion about computers. To what extent do you agree with it? Is this true now? How can computers become even more useful in future?

"Our computers will be our telephones, our post-office, our library and our books".

3. Why do you think so many men are keen on computers? Write a few sentences about it.

Classical computer science has linked human computing and machine computing in the so-called Church-Turing thesis: Everything that a human being can compute can be computed by a machine. According to this thesis, our intuitive understanding of computation refers to the set of computations that can be formally prescribed. Closely related to this idea is the concept of an algorithm.

An algorithm is a set of rules or instructions for getting a desired output from a given input. The word “algorithm” originated in the Middle East. Curiously enough it comes from the Latin version of the last name of the Persian scholar Abu Jafar Mohammed ibn Musa al-Khowaresmi (Algorithmi) whose textbook on arithmetic (825 A.D.) employed for the first time Hindu positional decimal notation and gave birth to algebra as an independent branch of mathematics. It was translated into Latin in the 12^{th} century and had a great influence for many centuries on the development of computing procedures. The name of the textbook’s author became associated with computations in general and used as a term “algorithm”.

Personal computing is a partnership between the person and the computer. Believe it or not, a personal computer is easier to operate than a car. It’s even easier to operate than a telephone, which comes with no instructions at all. Suddenly, personal computers invaded our world. It’s not surprising that it takes most of us a while to get comfortable with a comparatively new technology that so quickly arrived on the scene.

Text 2

1. Read the text “Using computers”. Do you think the style of the text is:

- ☐ Serious and analytical?
- ☐ Enthusiastic and persuasive?
- ☐ Ironical and amusing?
- ☐ Positive and optimistic?
- ☐ Negative and critical?

2. Here are some ideas in note form. Using information from the text below expand them into a short paragraph. Begin with the sentence given:

There are various things that you can do using your computer

work with texts	effective tools
study things	children
modify	pilots
combine	money
help and liberate	construction design
to be trained	boring tasks

3. Some parts of the text are about problems computers cause. Find these parts and translate them into Russian (in writing).

Using computers

Think of the first time you succeeded in making a computer do what you intended it to do. Think of the feeling it gave you to be in control of a powerful machine. Before getting too excited, don't forget the times you had to struggle to make the computer do what you wanted. You could not get the right result, or, worse, there was no reaction at all. Remember the direct way in which mistakes

or inconsistencies in your first programs were revealed and the difficulties you sometimes had when you were trying to correct the programs? You knew that something was wrong, but you had no idea what it was.

Computers are fascinating because they are fast, powerful, and extremely versatile machines, and because they are programmable. They will obey our most whimsical commands, provided they can interpret them. It is really magic: They do exactly what we tell them to do. But, of course, we have to think and express ourselves clearly; we have to be careful with our words.

We can use computers to play with texts and immediately see the consequences. It is easy to reuse text and to experiment with different formulations and the sequence in which we present our argument. There is no guarantee, of course, that texts produced on computers are better in quality, or clearer and richer. Nevertheless, computers are extremely effective tools for producing, modifying, and combining texts, and they offer us fascinating opportunities to play and to experiment, while we try to be convincing, clear or even poetic.

We can also use computers to explore the world without having to suffer real-world consequences. Kids fight monsters without ever getting hurt. Pilots are trained in flight simulators without the hazards and high costs. Investments are evaluated without running the risk of losing fortunes. And bridges and highways are designed and tested without the risk of collapses or the inconvenience of traffic jams.

In general, we use computers to process, communicate, store, and keep track of information. Computers also provide us with new and useful opportunities, and they liberate us from many laborious and boring tasks.

It is not surprising that the development of computer systems raises difficult questions. We use computers to automate administrative tasks and to mechanize and automate production processes. But how can we make sure that the good qualities of the traditional manual way of doing things are not lost? And what about the people who lose their jobs because of the computer?