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Английский язык
В КОМПЬЮТЕРНОЙ
СФЕРЕ

English

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Английский язык В КОМПЬЮТЕРНОЙ СФЕРЕ

Учебно-практическое пособие

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Т88   Английский язык в компьютерной сфере: учебно-практическое пособие / И. Ф. Турук, О. Д. Кнаб. — М. : Университетская книга, 2012. — 298 с. : табл.

Данное пособие предназначено для учащихся, специализирующихся в области компьютерных технологий. Целью данного пособия являются отработка навыков чтения и понимания специального текста, усвоение терминологической лексики данной области специализации и грамматической структуры текста. Пособие написано с учетом новейших технологий компьютерной сферы на сегодняшний день. Тексты издания содержат полезную и интересную профессиональную информацию, а также знакомят с лексической, грамматической и стилистической структурой, типичными для текстов подобного рода. Книга снабжена англо-русским словарем.

Пособие написано для студентов (бакалавриат и магистратура), аспирантов и преподавателей вузов, специализирующихся в области компьютерных технологий и владеющих общей лексикой английского языка, также пособие будет полезно всем, кто работает в данной области и хочет расширить и актуализировать свои знания.

Содержание / Contents

Предисловие

Это интегрированный курс, который предназначен для студентов продвинутого уровня знаний в области языковой и коммуникативной компетенции, а также специализирующихся в области компьютерных технологий.

Целью курса является совершенствование этих знаний с акцентом на усвоение лексической базы данного подъязыка, развитие умений и навыков практического владения этой базой в реальных речевых ситуациях и расширение профессиональных знаний. Последнее обстоятельство привело к определенным затруднениям при создании этого курса. Стремительное развитие компьютерной техники и программного обеспечения вызывало необходимость отразить в учебном материале уровень новейших достижений сегодняшнего дня. Это стимулировало выбор содержания и структуры данного курса.

Курс состоит из 7 Units, Tests, Additional Information, Abbreviations & Acronyms, The Internet Chat World, Vocabulary.

Каждый Unit состоит из следующих разделов:

Information for Study, Exercises, Vocabulary Training, Test, A bit of Reading Practice, а также странички юмора (Relax, A bit of humor).

В нескольких Units введен дополнительный раздел Vocabulary Peculiarities.

Information for Study служит введением в тему каждого Unit в виде оригинального материала, который предоставляет студенту достаточно полезную и интересную профессиональную информацию, а также знакомит его с лексической, грамматической и стилистической структурой текста.

В разделе Exercises ставятся задачи выполнения языковых и речевых действий студента в широком спектре методических приемов и концепций. Речевые действия направлены на активные формы работы, например, упражнения 1, 2, 3, 13, а остальные на усвоение языкового материала. В результате тренируются навыки чтения, перевода, понимания текста и устной речи. Послед-

ним пунктом этого раздела является информация о лексическом или грамматическом явлении с иллюстрацией взаимосвязи их функционирования в речи и их семантической интерпретации.

Выделение раздела Vocabulary Training вызвано акцентированием внимания на усвоение студентом терминологического слоя данного подъязыка. В упражнениях приводятся термины, их семантическая значимость в виде дефиниций, смысловой идентификации и других приемов семантизации.

A bit of Reading Practice является заключительным звеном в практике чтения на базе усвоенного языкового материала по тематике данного Unit с выходом в языковую практику общения и обсуждения проблемных вопросов. Данный вид работы стимулирует творческую активность студента в его суждениях и мыслительной деятельности на профессиональном английском языке.

Цель раздела Relax – дать студенту, с одной стороны, разрядку от основного тематического стержня курса в виде шуток, загадок, комических ситуаций, а с другой сторо-ны – раскрыть элементы английского и американского юмора и его языковое наполнение.

Дополнительный материал Vocabulary Peculiarities в некоторых Units приводится с целью ознакомления студентов с богатством лексических единиц речи и раскрытия их структурных и семантических реалий.

Units завершаются итоговым тестом (Final Test), который состоит из 6 заданий. Объектом тестирования является знание лексических единиц всего курса как на уровне отдельных слов и выражений, так и в контексте. Методика тестирования – множественный выбор, close test, open test и др. Тест оценивается на уровне экзамена.

Раздел Abbreviations & Acronyms содержит нужную информацию, которая помогает студенту расшифровать многочисленные типичные сокращения, встречающиеся в текстах по данной тематике.

The Internet Chat World включает элементы языка Internet Chat. С одной стороны, этот раздел вводит обучаемого в

мир языковых средств общения через Internet, с другой – позволяет на основе анализа структуры этих элементов пополнять лексикон Internet Chat собственными выражениями.

Заключительная часть курса, Vocabulary, представляет собой англо-русский словарь, который включает наиболее часто встречающиеся лексические единицы и охватывает почти весь текстовый материал курса. Полнота словарного корпуса и его подача дает возможность студенту легко в нем ориентироваться и находить нужные русские эквиваленты с учетом контекста.

Структура курса, его содержание, разнообразие дифференцированных по трудности упражнений и текстового материала позволяет осуществить выборочный подход к усвоению учебного материала, а это, в свою очередь, ведет к расширению круга лиц, изучающих профессиональный английский язык данной области знаний и имеющих разный исходный уровень владения английским языком.

Авторы

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UNIT 1

1. Information for study

Taking computer for granted

If it keeps up, man atrophy all his limbs but the push-button finger.
F.L. Wright

> Sales clerk: This little computer will do half your job for you.
> Buyer (studying the machine): Fine, I'll take two.

How easy is to get cynical about computers. Almost every day comes news of an office network that fails and paralyzes the company, of software that is years late, millions over budget and still doesn't work, of a spell-checker program that «corrects» a right word into a wrong one.

At times we feel at the machines' mercy, propelled in directions we would rather not go. The technology keeps growing more complex, more demanding, more intimidating.

But every now and then it's worthwhile to think positive, to take stock of the computers that work, that we use daily without thinking, that have made a difference. And that would have most of us screaming if taken away.

Herewith is an unscientifically compiled list of areas that the machines have forever changed.

Banking. Have you ever been to a country where banking still runs on paper? You wait in line, deal with a teller, than take a number and sit down. If you're lucky, the clerk takes only 30 minutes to go to a back room and rummage through giant ledgers to see if you have money.

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Remember how ominous the term «banking hours» used to be? We had to build a trip to the bank into our weekly schedules. The price of missing that trip was cashless weekends or embarrassment of mooching from friends. Now we expect 24-hours access to our money at machines.

Time keeping. When I was a boy you had to spend hundreds of dollars to get truly accurate time on your wrist. It was common for watches (even those allegedly packed with tiny jewels) to lose or gain 10 minutes a day and break after a few months. You can still spend as much as you want on a watch, but $10 or $15 will buy you one that is off only by seconds a month and lasts for years. There's more: it will wake you with an alarm. Squeeze a button and it will turn into a stopwatch and tell you precisely how many seconds it takes from door to bus stop. As a boy I always wanted a stopwatch, but never had the money for one.

Telephone service. We used to think nothing of waiting hours for an overseas call to go through. We would tell an operator the number and hope for the best. Now we dial the digits and, in a few seconds, a telephone is ringing a continent away. Computers make that happen.

Calculating. People under 30 won't believe it, but there was a time when we balanced our check-books by hand. Or didn't balance them at all. Of course, there are plenty of people who still pursue that route. But the point is that if you want mathematical accuracy, you can get something that does the numbers as accurately as any child prodigy.

Medical research. The huge human genome project, which proposes to unlock the basic genetic code from which we are constructed and possibly tame AIDS, cancer and a host of other incurables, depends very heavily on computer-generated analyses of genetic structure.

Air traffic control. With computers' help, controllers can place many more planes close in the sky than they could using ghostly blips on a radar screen. When the computers fail, the controllers shift back to the blips and have to space planes farther apart. That means you sit fuming on a runway waiting for takeoff clearance.

Ticketing. Large electronic data-bases allow companies to instantly check ticket availability. That's why you can buy a ticket to a Rolling Stones concert in Washington from anywhere in the country. Or how the airline reservation agent knows whether there's space on the flight from Denver to Los Angeles.

Gasoline. You do not need to stand in line inside the service station to pay. You slip your card into a pump. A networked computer inside it validates the card in a few seconds. You pump your gas and hit the road. And cars go further these days because of «electronic engine management», a collection of chips in your car that control such crucial as spark plug timing and air flow.

Of course, each of these successes carries a potential cost. If kids can punch buttons to get a sum, they may not learn basic arithmetic. We may lose something in a world in which a watch is a throwaway commodity, not a possession to be saved for, lovingly chosen, than cared for through the years.

But it seems that most of these things, and plenty of others, have been for the better. We can never go back and, in most cases, wouldn't want to. Imagine the protests if somebody proposed removing computers from medical research labs, or that banks go back to paper ledgers.

One thing that stands out about the positives – they tend to be technologies that began 15, 20 or even 30 years ago. There's been plenty of time to rethink and refine, and turn them into things that really work.

Computer speech
When your work speaks for itself, don't interrupt.

Computer professional vocabulary is very developed and enormously rich. It concerns not only definitions, but also a great amount of different abbreviations.

Just an average user does not need to know all the computer terms since many of them are too specific and used only by specialists. But it's absolutely necessary to know an everyday computer language that is widely spread and common for, so to say,

a «computer man in the street». Pay attention to it and try to remember if you are willing to communicate with your colleagues.

ISP	means an Internet Service Provider, a company that provides internet support for other entities.
WWW	the World Wide Web refers to all the publically accessible documents on the Internet.
A Network	(as applied to computers) means a group of computers working together. It can also refer to the physical wire etc. connecting the computers.
NC	is abbreviation for network computers. It refers to any computer system that is designed to work as part of a network, rather than a stand-alone machine.
Platform	represents a computer's family. It is defined by both the processor type on the hardware side and the OS type on the software side.
File	is a collection of related data identified by a certain name. E.G. a document created and stored is referred to as a file. A file is also called a document. A blank document (new) may be named «Document 1» until you rename it.
Directory	is a part of a structure for organizing different files on a disc. Besides files a directory can contain other directories, which are called subdirectories.
Multimedia	originally indicated a capability to work with and integrate various types of things including audio, graphics, and especially video. Now it's more of marketing term and has little real meaning.

2. Exercises

1. *Read and translate the text.*
2. *Check up your understanding.*
    1. What news can you hear often?
    2. What happens with the company if a network fails?
    3. Is it worthwhile to take stock of the computers?
    4. What is the list of areas that the computers have changed? Is it completed or you can add something?
    5. Suppose you've been to a country where banking still runs on paper. What are your experiences?
    6. What can you tell about a modern watch?
    7. What can you tell about a computer and telephone service?
    8. What can you tell about a computer and calculating?
    9. Have you got a computer at home? Do you like it? When do you use it? What for?
    10. Is it effective to use computers in medical research?
    11. What is the advantage of using computers in air traffic control?
    12. What can you tell about computers and ticketing?
    13. Is computer useful at the gas service station?
    14. No doubt, you're a driver. What do you think about «electronic engine management»?
    15. Do you agree with such statement: «If kids can punch buttons to get a sum, they may not learn basic arithmetic»?
    16. Do you take computers for granted? If so, why?
    17. What's your opinion about the prospects of the computer technology?
    18. Can you submit your own nominees for future columns in the list of applications given above?
    19. Can you imagine what would happen if the computers were removed from our practical activity?

3. *Retell the text briefly using the following expressions:*

   News comes, a spell-checker program, «corrects» a right word into a wrong one, every now and then, it's worthwhile,

to take stock of the computers, wait in line, deal with a teller, accurate time, to lose or gain 10 minutes a day, hope for the best, by hand, to unlock the basic genetic code, to depend heavily on, with computers' help, apart, to slip one's card into, hit the road, electronic engine management, spark plug timing, a throwaway commodity.

4. What's missing? You can help yourself referring to the text.

1. This spell-checker program «corrects» a right word ..... a wrong one.
2. At times we feel ..... the machines' mercy.
3. I've never been ..... a country where banking still runs ..... paper.
4. The price of that was cashless weekends and the embarrassment ..... mooching ..... friends.
5. You can spend as much as you want ..... watch.
6. This watch will wake you ..... an alarm.
7. Squeeze a button and it will turn ..... a stopwatch.
8. We still hope ..... the best.
9. You dial the digits and, ... a few seconds, a telephone is ringing a continent ..... .
10. There was a time when we balanced our checkbooks ..... hand.
11. The huge human genome project depends very heavily ..... computer generated analyses ..... genetic structure.
12. When the computers fail, the controllers shift .... the blips and have to space planes farther ..... .
13. You can buy a ticket ..... Rolling Stones concert in Washington ..... anywhere ..... the country.
14. There's space ..... the flight ..... San Francisco ..... Hawaii.
15. You slip your card ..... the pump.
16. It validates the card ..... a few seconds.
17. It's not a possession to be saved ..... .
18. Most ..... these things have been ..... the better.
19. We can never go back and wouldn't want ..... .
20. These ideas will turn ..... things that work.

5. Rearrange the words and get the right sentences.

1. with / many / a host / of/ the help / tame / of computers / incurables / can / we / of many /.
2. bases / allow / data / to / electronic / large / companies / ticket / check / availability /.
3. need / line / stand / don't / in / you /.
4. a few / validates / the card / seconds / in/ a computer /.
5. your car / a collection / in / chips / of 7 controls / timing / plug / spark /.
6. complex / the technology / growing / more / keeps /.
7. then / now / positive / to think / every / worthwhile / of / is / it / the computers / and /.
8. for / always / as / I / a boy / a stopwatch / had / wanted / never / the money / one / but /.
9. into / a / a / a / wrong / spell-checker / right / program / word / corrects / one /.
10. into / turn / a button / squeeze / and / will / it/ a stopwatch /.

6. Put the letters in order to make words, then use the words to complete the sentences.

wyunra, llbaaaviiity, ppmu, einl, kcba, ssccea, inccayi, mrlaa, eellrt, smnooui

1. Large electronic data bases allow companies to check ticket ..... .
2. That means you sit fuming on a ..... waiting for takeoff clearance.
3. You slip your card into a ..... and a computer inside it validates the card in a few seconds.
4. You don't need to stay in ..... .
5. We can never go ..... .
6. Today it's impossible to get ..... about computers.
7. You have to wait in line, deal with a ..... and sit down.
8. The term «banking hours» used to be ..... .
9. Now we expect 24-hours ..... to our money at machines.
10. Your watch will wake you with an ..... .

7. *There are two words given in each item. You must explain how is «a» like «b» and how «a» differs from «b».*

1. (a) ledger, (b) book;
2. (a) work, (b) job;
3. (a) money, (b) cash;
4. (a) watch, (b) clock;
5. (a) runway, (b) way.

8. *Give the opposites of the following words.*

1. fail; 2. late; 3. right; 4. complex; 5. positive; 6. different; 7. unscientifically; 8. sit down; 9. lucky; 10. remember; 11. spend; 12. lose; 13. buy; 14. take; 15. believe; 16. unlock; 17. allow; 18. stand.

9. *Give the synonyms of the following words:*

1. right; 2. wrong; 3. lucky; 4. to change; 5. line; 6. trip; 7. price; 8. to spend; 9. common; 10. to tell; 11. to happen; 12. to buy; 13 project; 14. to go back.

10. *What verbs frequently precede these words?*

1. a computer; 2. work; 3. a program; 4. a question; 5. an answer; 6. a company; 7. money; 8. button; 9. news; 11. a number; 12. line.

11. *Supply the articles where necessary:*

1. ..... huge project proposes to unlock ..... genetic code.
2. ..... genome program makes possible to tame ..... host of ..... incurables.
3. You sit fuming on ..... runway waiting for .... takeoff clearance.
4. Due to ..... computers ..... reservation agent knows whether there's space on ..... flight from New York to San Francisco.
5. At ..... service station you slip ..... card into ..... pump and ..... networked computer validates ..... card in a few seconds; you pump ..... gas and hit ..... road.
6. With ..... computers help ..... controllers can place many planes close in ..... sky.

7. Yesterday ..... news came of ..... network that failed and paralyzed .... company.
8. Have you ever seen ..... spell-checker program that «corrects» ..... right word into ..... wrong one?
9. «I have ..... computer and like to use it», said ..... friend of mine, ... top-notch operator, «but sometimes I feel at..... machines mercy».
10. If you use ..... computer, you have to study since ..... technology keeps growing more complex.
11. In ..... country where ..... banking still runs on ..... paper you have to wait in ..... line, deal with ..... teller, then take ..... number and sit down, and if you are lucky .... clerk takes 30 minutes to see whether you have .... money.
12. How do you understand .... term «banking hours»?
13. Alex is going to buy .... new computer; .... one he saw yesterday at .... reasonable price stirred his imagination.
14. This watch will wake you with .... alarm.
15. .... price of missing that trip to .... bank is .... cashless weekends and .... embarrassment of .... mooching from friends.
16. Just tell .... operator .... phone number and hope for ... best.

12. *Translate into English:*

1. Доверьтесь компьютерам, и они вам помогут.
2. Почти каждый день поступают сообщения о сбоях в компьютерных сетях, которые парализуют работу компаний.
3. Ваше программное обеспечение устарело.
4. Временами мы ощущаем нашу зависимость от компьютеров, работа которых не всегда соответствует нашим желаниям.
5. Компьютерные технологии продолжают постоянно усложняться.
6. Если вам повезло, то клерку понадобится всего лишь 30 минут для того чтобы проверить, имеются ли на вашем счете деньги.
7. Мы набираем номер, и через несколько секунд телефон звонит на другом континенте. Компьютеры позволяют это сделать.

8. Одна из основных задач науки – расшифровка генетического кода.
9. С помощью компьютеров диспетчеры могут уплотнить расписание рейсов.
10. Вам не нужно стоять в очереди. Вы заправляетесь бензином и отправляетесь в путь.
11. Электронная компьютерная система помогает в управлении машиной.

13. *Are you up to giving a right explanation?*

It's a sort of a game, the game that develops student's abilities to express themselves. In some ways it helps students to plunge into English.

One of the students, a volunteer, is invited to take place at the teacher's table. He is facing the class and mustn't turn back and look at the blackboard. The other student with the rest of the company picks secretly out one of the statements given in this book and writes it on the blackboard.

Now the volunteer after getting some information from his colleagues tries to restore the statement.

The information concerns:

- the number of words;
- the main idea of the statement, if possible;
- the meaning of each word of the statement. It is strictly prohibited to use the words written on the blackboard, but it is quite well to use synonyms and antonyms.

It's extremely desirable that everybody takes part in this game.

Who can express the most precise meaning of the word?
Are you getting on well with your English?
Try to do your best!

Let's analyze an example. The statement is:

What an ugly beast is the ape, and how like us.

Cicero

Cicero was absolutely right,
but according to the
Theory of Relativity
all the apes think the same way

This statement consists of eleven words.

It says to what conclusion came Cicero when he compared people with certain kind of animals.

The first word is used to indicate something about which the question is being asked.

The second word is the indefinite article.

The third word is an adjective. We use it when we say about something that is unpleasant to look at. The antonym of the word «beautiful».

The next one is the synonym of the word «animal». Sometimes it is used to characterize a brutal disgusting person.

The fifth one is a verb with the help of which we form the present continuous tense.

The next word is the definite article.

The seventh word is the synonym of the word «monkey».

The eighth word is a conjunction.

The next one we use when we ask a seller about the price.

We use this word when we want to say «the same as or similar to something or somebody».

The last word is a pronoun. It is used when the speaker is referring to himself together with other people.

It's your turn now. You can find interesting statements somewhere or make them up on your own. It's up to you. At the moment we can offer you several proverbs that can be used in this game:

1. You can lead the horse to the water, but you cannot make him drink.

2. If a man deceives me once, shame on him, if he deceives me twice, shame on me.
3. If you do not make mistakes, you will never make anything.
4. God keep me from my friends, from my enemies I will keep myself.
5. Go slowly to the entertainments of your friends and quickly to their misfortunes.
6. A man who is proud of his money rarely has anything to be proud of.
7. Everything has been figured out except how to live.

14. FAIRLY and RATHER

You could notice in the main text two sentences which, at first glance, are similar:

«At times we feel at the machines' mercy, propelled in directions we would <u>rather</u> not go» and «Indeed, the computer is a <u>fairly</u> intelligent machine».

Here is another example. Suppose two representatives from a foreign company come to your office for an appointed meeting. After a few words of greetings you, of course, offer your guests some coffee. One of them sips a bit from his cup and says, «This coffee is <u>fairly</u> hot». The other one does the same but adds, «This coffee is <u>rather</u> hot». You are confused, you don't understand the sense of their remarks. Take it easy. We will help you look into the «mystery» of these words.

*Both **fairly** and **rather** can mean **moderately** or **to a modern degree**.*

Fairly is used when the speaker expresses some positive idea. Hence, it goes with «favorable» adjectives and adverbs, such as good, nice, clean, clear *etc. On the contrary, **rather** is chiefly used when the idea is negative, i.e. it goes with «unfavorable» adjectives and adverbs, e.g.* bad, stupid, difficult *etc. For example:*

This person is <u>fairly</u> clever, but that one is <u>rather</u> stupid.

Now the sense of all the previous examples is absolutely transparent. So we use rather in «... directions we would rather not go» because these directions are not desirable for us. On the other hand, the statement «the computer is fairly intelligent machine» reflects our positive attitude to it.

19

When a person mentions that «coffee is rather hot» it means he does not drink hot coffee. But when he uses in this case «fairly» instead of «rather» it means that he likes hot coffee.

If **rather** is used with positive ideas than it is an understatement for very:

This book is rather interesting.

I've got rather good news for you.

If **rather** is used before different, similar, alike, like etc. it means «slightly» or «a little». **Fairly** cannot be used in these ways as well as before the comparative and superlative degrees of adjectives.

Now have a bit of practice. Fill the gaps with **fairly** or **rather**.

1. –This computer program is .... simple.
    –No, I think it's .... difficult.
2. (At a shop) Buyer: This box is .... small. I like it.
    Seller: Take lap-top than.
    Buyer: I don't think I'll take it. It's .... expensive.
3. I won't be able to read this instruction today. It's .... long.
4. –What are you doing this evening?
    –I'm going to install a new program. It's .... interesting.
5. –I'll advise Tom to upgrade his computer.
    –I'm afraid he is .... ignorant and won't understand what you mean.
6. –What's up? You look .... upset.
7. –Your homework is .... good.
8. –I know him .... well. He is a .... dull person.
9. –I've .... good memory for numbers, but I'm rather bad on names.
10. –I can finish this exercise .... quickly if you keep quiet for a while.
11. –Your homework is done .... correct.
12. –Read this book. I think it's .... interesting.
13. –This computer program is .... more interesting.
14. –Our team is now .... stronger than before.

3. Vocabulary training

Who has words at the right moment?
Charlotte Bronte

1. Match the words given in the left column with their definitions in the right column, e.g. 1-21:

1. wrist	1. assert with a view to subsequent proof
2. ominous	2. the image of the object on the radar screen
3. stopwatch	3. without money
4. takeoff	4. a declaration of freedom from restrictions
5. squeeze	5. critical parameter
6. scream	6. a person who sees no good in anything and no belief in human goodness
7. intimidating	7. uncomfortable feeling
8. rummage	8. striking fear into
9. mercy	9. the principal book of accounts
10. crucial	10. a forgiving disposition
11. nominee	11. beg
12. clearance	12. one who is nominated by another
13. blip	13. of an evil, suggesting future trouble
14. embarrassment	14. a person who has unusual abilities
15. cashless	15. thorough search, turn things over in search
16. allege	16. a firm strip of ground for aircraft to take off from and land on
17. mooch	17. cry out in a loud voice
18. ledger	18. press
19. prodigy	19. watch with a hand that can be started and stopped when desired
20. cynic	20. leaving the ground for flight
21. runway	21. joint between the hand and the arm

2. Invent sentences using the expressions from the list below:

Expressions	Definitions
a throwaway commodity	smth that's good for nothing,
access to smbd's money at machines	money available because of the help of computer
depend very heavily on	depend very much on
electronic engine management	electronic control of the engine
every now and then	from time to time
feel at the machines mercy	be dependent on the computers
hit the road	go or drive away
pursue that route	work that way
run on paper	manage without the help of machines
shift back to smth	return to smth
take for granted	take as true without further proof, assume
take stock of	estimate
the point is	the chief idea is

3. Reading comprehension

Read the text, try to understand it and put the items in the right order. The first one is already in correct position.

1. Computer personnel – people who work with or are associated with computers. In a large computer department the staff may work under the direction of a data processing manager, who supervises and coordinates the work performed.

2. Personnel who run existing application programs: data control staff receive information from computer users (for instance, from the company's wages clerks), ensure that it is processed as required, and return it to them in the processed form.

3. Computer personnel can be broadly divide into two categories: those who run and maintain existing application programs (programs that perform a task for the benefit of user) and those who develop new applications.

4. Once the information has been typed it is placed directly onto a medium such as disc or tape. Computer operators work directly with computers, running the programs etc; computer engineers repair and maintain computer hardware; file librarians, or media librarians, store and issue the data files used by the department; an operations manager coordinates all the day-to-day activity of these staff.

5. Data preparation staff, or keyboard operators, prepare the information received by the data control staff so that it is ready for processing by computer.

4. Computer terms in use

Are you sure you really know widely spread computer terms? In the list below some of them are given together with their definitions. Find out Russian equivalents.

If it's beyond your reach, give Russian explanations at least.

RAM	The abbreviation of RANDOM ACCESS MEMORY, the immediate or «working» memory, that can be quickly accessed without requiring a search of storage areas. RAM is also referred to as a main memory, and holds whatever application program, and associated data, is currently being used.
ADD-IN	Components like increased memory, that can be added to a computer, generally onto an already installed printed circuit board.
SLAVE	A device such as printer, under the complete control of another device.
BACK UP	The process of making additional copies of data to protect them from unexpected disaster.
SCRATCH	To erase data.

4. A bit of reading practice

Read and try to understand this sort of advertisement.

Founded in 1998, and despite its recent start, CLR (name of the company) has achieved status within the international PC arena, marking us as one of the fastest growing, most dynamic computer companies in the world. With its headquarters in Miami, Florida the company spans a sales and service network across 20 nations, in which it has established a high level of credibility and recognition.

Our goal is to offer a range of explicit customer services and introduce an interesting combination of rather unique technologies to all of our customers based around the world. To date, we continue our tradition of product excellence and differentiation; the very same principles that placed us on the top list of quality PC, Monitor, and Notebook suppliers in the USA and parts of Europe. Through hard work and absolute dedication to our product development and customers, the international presence of CLR will surely create excitement for many regional players, redefining the market share charts! Our goal is to become a service effective, one-stop shopping center serving all your PC technology needs.

CLR products and procedures yield the most advanced and most comprehensive range of services for all PC users. As our new slogan, 'Technology Into the Future', reveals our true intentions towards the PC market of today and our ambitions for the future. Breaking many popular benchmark scores and lauded by the international press, our systems are made to exceed your expectations on what a PC can do for you. The distinct features surpass the PC of today and set the standards towards the technological powerhouse of tomorrow. Innovation, Quality and Aesthetic details are some of the factors focused on while designing the CLR product line, a truly technological triumph of today and a secure investment for the future.

Suppose you're going to establish your own computer company.
You know an old saying 'No publicity, no prosperity'.
Make up your own advertisement.

5. Let's discuss

1

At present even not very experienced people feel that the progress in computer area is advancing stunningly fast. Of course, it's almost impossible to foresee what will happen even in a year if things will go that way. Nevertheless stir up your imagination and explain what, according to your opinion, kind of hardware and software will be available, let's say, in ten years. Moot question, isn't it? But you have all the possibilities to check your prediction. Just wait.

2

If you paid your attention to the quotation at the beginning of this unit, you could not but remember the kernel of it: man's limbs will atrophy due to the computer progress.

What about human's brain?

The axiom asserts: computers do much mental work for people; as a consequence, people do not exercise mentally; hence, their brains are atrophying gradually. Is it so? What is your opinion?

It's a sort of a joke, but try to object. Be so kind as to give full answer.

6. Relax a bit

He who laughs last probably doesn't understand the joke.

Progress might have been all right once but it has gone on too long.

O. Nash

The cloning of humans is on the most of the lists of things to worry about from Science, along with behavior control, genetic engineering, transplanted heads, computer poetry and the unrestrained growth of plastic flowers.

L. Thomas

> *Better that girl has a beauty than brains because boys see better than they think.*
>
> *R. Byrne*

Friendship

As a show of love, business partners Tom and Jack decided that whoever died first, the other would put ten thousand bucks cash in his coffin. As it happened, when Tom died Jack was so distressed and absent-minded that he made a check out for fifteen thousand dollars.

Business

'I do not understand. If you are selling these computers way under cost, how is it you are showing a profit?' asked an accountant his new Boss. 'Simple', answered the Boss, 'we make our money fixing them'.

Wise Advice

'Always remember,' said the successful businessman to his young offspring, 'there are the only two things that will ensure your success in business.' 'What are they?' asked the son. 'Honesty and wisdom,' answered the father. 'Honesty?!' asked the son. 'Absolutely right. No matter how it may be to your detriment, no matter what your colleagues may say, always keep your word if you have given it,' answered his father. 'And what about wisdom?' asked the son. 'Don't be a blockhead and give it!' answered the father.

Cash transaction

The well-dressed businessman was walking down a dark street in New York when he was accosted by a mugger. Ordered to hand over all his money, the businessman did so, placing one hundred dollars in the mugger's hand. Than he took back two dollars and slipped them into his pocket. 'What the hell are you doing?' asked the robber. 'I always take a two percent discount for cash transactions,' answered the businessman.

Accost – approach and speak to; blockhead – a very stupid person; fix – repair; mugger – a person who attacks and robs someone in the street; offspring – someone's child.

Computers

A: Hello, tech support.
B: Hello, sir. I'm having trouble getting my computer to start.
A: Okay, sir. Do you know what may have caused the problem?
B: I installed a new program. And since then Windows won't come on.
A: Why don't we try booting into the safe mode. Do you know how to do that?
B: No.
A: Turn the computer on and as it is starting up hit F8. It should give you a menu of start up options.
B: Okay, ... no, I didn't get a menu.
A: Hmm ... shut the computer down and try it again.
B: Well, ... just a moment. ... No, that's not working; no matter how many times I press the keys.
A: Which keys? I said F8!
B: That's what I'm pressing – the letter F and the number 8.

Robbery

Judge (looking strictly at the robber): You admit breaking into the dress shop.
Robber: Yes, your honor.
Judge: Why was that?
Robber: Because my wife wanted a dress.
Judge: But you broke in four times in a row!
Robber: Yes, sir. She insisted on exchanging it three times.

The Skeptical Mark Twain
(From Pudd'n'head Wilson's Calendar)

Adam was but human – this explains it all. He didn't want the aple for the apple's sake, he wanted it only because it was forbidden. The mistake was in not forbidding the serpent; then he would have eaten the serpent.

27

Whoever has lived long enough to find out what life is, knows how deep a debt of gratitude we owe to Adam, the first great benefactor of our race. He brought death into the world.

The holy passion of Friendship is of so sweet and steady and loyal and enduring a nature that it will last through a whole lifetime, if not asked to lend money.

Why is it that we rejoice at a birth and grieve at a funeral? Is it because we are not the person involved?

All say, «How hard it is we have to die» – a strange complaint to come from the mouths of people who have had to live.

When I reflect upon the number of disagreeable people who I know have gone to a better world, I'am moved to lead a different life.

Nothing so needs reforming as other people's habits.

October. This is one of the peculiarly dangerous month to speculate in stocks in. The others are July, January, September, April, November, May, March, June, December, August, and February.

"Behold," the fool said, «Put all your eggs in the one basket» – which is but a manner of saying, «Scatter your money and your attention;» but the wise man said, «Put all your eggs in the one busket and – WATCH THAT BUSKET.»

Few things are harder to put up with than the annoyance of a good example.

UNIT 2

1. Information for study

Computer and its components

> *We live in a time when automation is ushering in a second industrial revolution.*
>
> *A. Stevenson*

Computer is a programmable electronic machine that processes data and performs calculations and other symbol-manipulation tasks. It can take information from a person through the keyboard or mouse, from a device like CD or floppy disc or from the network through a modem. There are three types of machines: the digital computer, which manipulates information coded as binary numbers; the analog computer, which works with continuously varying quantities; and the hybrid computer, which has characteristics of both analog and digital computers.

Digital computers are widely spread and corresponding to their size and intended use they could be divided into four types.

Microcomputers are the smallest used in small business, at home, and in schools. They are usually single-user machines.

Laptop is a transportable computer, the best partner of yours when going somewhere on business, particularly in conferences, meetings, talks etc.

Every dignified businessman uses such device.

Mainframes which can often service several hundred users simultaneously, are found in large organizations, such as national companies and government departments.

Supercomputers are mostly used for extremely complex scientific tasks, such as analyzing the results of nuclear physics experiments and weather forecasting. The mechanical, electrical, and electronic components of a computer system is called *hardware.*

29

A collection of programs and procedures for making a computer perform a specific task is called software. _Software_ is created by programmers and is either distributed on a suitable medium, such as a _floppy disc_, built into the computer in the form of firmware. Examples of software include operating system, compilers, and application programs. No computer can function without some form of software.

The main component of a computer, so to say, the very «brain» of it that executes individual program instructions and controls the operation of other parts is the central processing unit _(CPU)_. It includes the arithmetic and logic unit that carries out all calculations and logical operations, and control unit, which helps to run information around the system, since it decodes, synchronizes, and executes program instruction.

The next important component of a computer is called «random access memory» or _RAM_. The memory is considered «random access» because the memory locations can be accessed directly rather than requiring sequential access. It means that the data can be selected without having to skip over earlier data first. This is the way that, for example, a _CD_, _DVD_ will behave. The CPU must load application programs and the data they need into RAM before they can perform any processing. RAM is always supplemented by virtual memory, which increases the number of applications that can be run simultaneously.

Virtual memory-space on a hard disc used to temporarily store data and swap it in and out of RAM as needed.

RAM is the short-term memory of the computer. It is volatile, which means that any information stored in it will be lost if power goes out.

A permanent type of memory storage used by the computer for important data that does not change is called read-only memory _(ROM)_. It does not lose its components when power is removed. ROM contains programs that are critical to the operation of the computer, for example, the instructions necessary to boot the computer when it is turned on.

BIOS (basic input/output system) is a type of ROM that is used by the computer to establish basic communication when the computer is turned on.

Cash is a special memory subsystem within a computer that temporarily holds data or program instructions to improve overall computer performance. Most cashes copy data or from a standard computer memory (RAM) to a type of memory that allows faster data access by the CPU.

Hard disc (sometimes called *Winchester*) is large-capacity permanent storage used to hold information such as programs and documents. Needless to say, that memory is one of the most important components of every computer. The larger the memory is the more possibilities are available and can be realized. Memory capacity (computer memory size) is measured in bytes, kilobytes, megabytes, or gigabytes. *Byte* is the sufficient computer memory to store a single character of data in *bits* (binary digits, e.g. 1 or 0). A byte usually contains eight bits. It makes possible, for example, to store the capital letter F as the bit pattern 01000110. Thus a single byte can specify 256 values, such as decimal numbers from 0 up to 255. In the case of single byte *pixel* (picture element) can specify 256 different colors. One kilobyte is equal to 1.024 bytes; one megabyte is equal to 1.024 kilobytes; one gigabyte is equal to 1.024 megabytes.

No doubt, the computer is a very complicated compound device, which particularities and especially all the details of its «activities» are beyond the reach of just an average man in the street, but nevertheless each more or less experienced user who wants to acquire a computer is always interested (besides the volume and rate of its memories) in parameters of its components, such as *motherboard* and *video board* or *video adapter*. Of course these parameters must depend on the purposes which his computer will be targeted to.

Motherboard is the main circuit board of the computer that all of the others internal components connect to. Typically, the motherboard contains the CPU, BIOS, memory, mass storage interfaces, serial and parallel *ports expansion slots*, and all the *controllers* required to control standard peripheral devices, such as the *display screen, keyboard,* and *disc drive*. Other circuit boards are called add-ons or expansion boards.

Because the motherboard contains the CPU, all other chips attached to the motherboard can access the CPU directly without

going through the bus i.e. through the wires that provide the routes of transmitting data. Hence it is possible to improve the parameters of your computer if you change or add some new chips. E.g. to add memory to your system you may be able just only to insert additional chips onto the motherboard.

On most PCs, it is possible to replace the motherboard to upgrade to a faster microprocessor. Replacing the motherboard improves performance of all its components in addition to adding a faster CPU. Besides that, by replacing everything at once you can avoid possible compatibility problems.

Video board is located on an expansion board and inserted into a slot in the computer to provide it with the ability to display a video image. The parameters of this device are very important for the multimedia purposes.

Sound card is used by the computer to record and play audio by converting analog sound into digital information and vice versa.

Graphics card translates image data from the computer into a format that can be displayed by the monitor.

SCSI (pronounced «skuzzy»), acronym for small computer system interface. One type of standard interface used to connect computers to devices such as hard discs, printers, scanners, and CD-ROM drivers. SCSI interfaces provide for faster data transmission rates than standard serial and parallel ports.

There are several *peripheral devices* that can be attached to a computer: *VDT* (visual display terminal) or monitor, the primary device for displaying information from the computer; keyboard, the primary device for entering information into the computer; *mouse*, the primary device for navigating and interacting with the computer; *disc drive* units for mass memory storage (e.g. CDs, floppy, etc.), *scanners* for copying pictures and texts, *printers* for printed output, and *modem* (acronym for modulator-demodulator) for connecting to the *internet*.

Every of mentioned above peripheral devices connected to the computer needs a *driver program*, a program that controls it. The driver ensures that communication between the computer and the device is successful. For example, it is necessary for some pur-

poses to connect different types of printers, each with its own special operating codes, to the same type of computer. This is possible because driver programs are supplied to translate the computer's standard printing commands into the special commands needed for each printer.

As it was mentioned before, *immediate access memory* or *internal memory* describes the memory locations that can be addressed directly by the central processing unit. It is either read only or read / write. Read only memory stores information that must be constantly available and is unlikely to be changed. It is nonvolatile. Read / write memory is volatile – it stores programs and data only while the computer is switched on.

External memory (backing storage) is nonvolatile memory located outside the central processing unit, used to store programs and data that are not in current use. It is provided by such devices as magnetic discs – *floppy* and *hard discs* or optical discs – *CD ROM.*

Floppy disc is a storage device consisting of a light flexible disc enclosed in a plastic. It is placed in a disc drive, where it rotates at high speed. Data are recorded magnetically on one or both surfaces. Present day average floppy discs hold not more than several megabytes, depending on the disc size, recording method, and whether one or both sides are used.

CD ROM (compact disc read-only memory) is a storage device developed from the technology of the audio compact disc. It consists of a plastic coated metal disc, on which binary digital information is etched in the form of microscopic pits. This can then be read optically by passing a light beam over the disc. CD ROMs hold 500–700 megabytes and are used in distributing large amounts of texts and graphics. On *CD RWs* (read and write discs) it's possible to rewrite information many times. *DVD* can hold the amount of information up to several gigabytes.

At the end of this concise computer review it's necessary to touch the question of different kinds of connections.

Slot is a rectangular opening inside a computer into which can be inserted, for example, a printed circuit board.

Port (an external connection) – the socket that is used to connect the cable for a peripheral device to. The computer has different ports:

- *parallel* port is commonly used to connect a printer;
- *serial port* is typically used to connect an external modem; universal serial bus (USB) is an external connection. The buses connect the computer to all peripheral devices;
- *AGP* (accelerated graphics ports) is a very high-speed connection used by the graphics card to interface with the computer.

Computer speech

As a matter of fact every specific area of human activity is tightly connected not only with the development of a formal professional language but with the inevitable birth and simultaneous development of his colloquial stepbrother – colorful and often humorous slang. No doubt, good knowledge of the contemporary colloquial computer language will save you much trouble in your communication with foreign colleagues.

Now you have an opportunity to get in touch with it. Jump at the chance.

Antidote	a program used to protect a computer from computer viruses
Artware	advanced software and hardware that allows the user to generate art using a variety of elements (sound, color, etc)
Box (noun)	a computer
Bug (noun)	a software error or flaw
Chat	chatting is like e-mail, only it is done instantaneously and can directly involve multiple people at once
Confuser	slang for computer. Usually encountered in compounds such as 'confuser room', 'personal confuser', 'confuser guru'
DDT	a debugging program
Debug	to eliminate the error or flaw

| Gweep | a term used mostly by computer professionals to describe people who only know enough about computers to get by at their jobs |
| Hack | to work on a computer with great affinity and adeptness for work or fun |

2. Exercises

1. *Read and translate the text.*

2. *Are you an experienced person?*

1. What types of computers do you know?
2. What type of computer do you prefer to work on?
3. Have you got your own box at home? What type?
4. You know that computer technique is not «frozen». Almost every month you can find something new about it. Do you like to improve certain parameters of your own computer? If so, which ones? If not, why?
5. Which computer programs do you use?
6. Are you longing for brand new programs, or you're a conservative who prefers to use well-known, old, and reliable ones?
7. As you know hacker is a person who delights in the technical and creative aspect of using a computer. How do you classify yourself? Are you a hacker or a gweep?
8. Have you ever been confronted with bugs in your machine? If so, what did you do?
9. What is the difference between software and hardware?
10. What does the CPU mean?
11. What are the main components of a computer?
12. What do you know about computer memories?
13. What peripheral devices do you use?
14. What does it mean «memory capacity»?
15. What does it mean «nonvolatile memory»?
16. Why do we need to install drivers?
17. Can you tell the difference between a CD ROM, CD RW, DVD?

3. **Retell the text briefly using the following words and expressions:**

Hardware, software, central processing unit, box, immediate access memory, calculations and logical operations, visual display terminal, disc driver, printer, scanner, memory capacity, byte, pixel, floppy disc, hard disc, external memory, CD ROM, CD RW, DVD, RAM, ROM.

4. **What's missing? You can help yourself referring to the text.**

1. The hybrid computer has characteristics .... both analog and digital computers.
2. Microcomputers are used .... small businesses, ... home and .... schools.
3. Supercomputers are mostly used .... complex scientific tasks.
4. Software is created .... programmers.
5. Software is either distributed .... a suitable medium or built .... the computer.
6. CPU can carry .... all calculations and logical operations.
7. Peripheral devices are attached ... a computer.
8. Nonvolatile memory does not lose information even when computer is switched ..... .
9. Volatile memory stores programs and data only while the computer is switched ..... .
10. Today you can by a computer according .... your taste and needs.
11. Can you fix your computer just .... yourself?
12. Is this new program available .... a shop?
13. If you wish to install a new program put your compact disc .... the disc drive and then work in accordance .... the prescription.
14. How do we call a program used to protect a computer ... viruses?
15. Your knowledge .... contemporary colloquial computer terms will save you much trouble .... communications .... professionals.
16. Hardware .... software is good .... nothing.

17. Buyer: I'm not satisfied .... this computer. It's .... order. I'll choose another one.
18. Seller: Be so kind as to make .... your mind which one is the best .... you.
19. Every day you can hear something new .... computers.

5. *Rearrange the words and get the right sentences.*

1. several / users / can / mainframes / hundred / service /.
2. programs / includes / software / of / a collections /.
3. texts / are used / copying / and / scanners / pictures /.
4. memory / CPU / computer / a computer / be/ without / and / can't /.
5. usually / bits / contains / eight / a byte /.
6. attached /a computer / be / devices / to / can / that / peripheral / several /.
7. data / memory / switched on / while / volatile / stores / is / the computer /.

6. *Put the letters in order to make words, then use the words to complete the sentences.*

Rawotesf, sgipsorecn, speegw, rencnas, elipx, wadherra, gbu.

1. Hardware without .... is as useless as a market without goods.
2. On the other hand the same idea about .... is also true.
3. If you want to copy a text use a .... .
4. Single .... can specify more than two hundred colors.
5. Nonvolatile external memory is located outside the central .... unit.
6. A little .... but so much trouble!
7. Most of people are .... .

7. *There are two words given in each item. You must explain how is «a» like «b» and how «a» differs from «b».*

1. (a) computer, (b) laptop;
2. (a) floppy disc, (b) hard disc;
3. (a) scanner, (b) printer;
4. (a) hardware, (b) software;
5. (a) CD, (b) CD RW.

8. Give the opposites of the following words:

1. paralyze; 2. late; 3. complex; 4. positive; 5. run; 6. build; 7. spend; 8. cheap; 9. go back; 10. individual; 11. connect; 12. possible; 13. large; 14. volatile; 15. external memory; 16. flexible; 17. tight; 18. formal; 19. foreign; 20. lucky.

9. Give the synonyms of the following verbs:

1. switch on; 2. address; 3. execute; 4. support; 5. purpose; 6. control; 7. connect; 8. perform; 9. create; 10. contain; 11. locate; 12. rotate.

10. Fill the gaps using the following words: artware, gweeps, box, bug-free, hacker, DDT, antidote:

1. I bet you this is a .... program.
2. This system needs a big dose of .....
3. All the advertisements on TV are created with the help of the .... system.
4. Because of the bug scare Sam hurried to a software shop to get a .....
5. Tom is such a ....! He hacks all the nights through on his .....
6. Its lost time to discuss computer news with ..... I don't care for getting in touch with them.

11. Supply the articles where necessary:

1. ... digital computers are widely spread.
2. .... main component of .... computer is .... central processing unit.
3. ....CPU includes .... arithmetic and .... logic units.
4. .... control unit helps to run .... information around .... system.
5. Every of .... peripheral devices connected to .... computer needs .... driver program.
6. .... driver insures that .... communication between .... computer and .... peripheral device is successful.
7. .... memory is one of .... most important components of .... computer.

8. It's .... most important not to overload .... memory with information.
9. Tom bought .... new program.
10. It turned out that .... program was extremely interesting and useful for him.
11. Sam is .... hacker and knows all .... antidote programs; so he can give you .... advice about .... best.
12. As .... matter of fact all .... professionals have their own specific colloquial language.

12. Translate into English.

1. С моим компьютером что то произошло; такое впечатление, что он сломался.
2. Трудно представить современного специалиста без компьютера.
3. Память является очень важным элементом компьютера, но не менее важен процессор.
4. Компьютер без программного обеспечения является бесполезным металлом.
5. Для периферийных устройств необходимы соответствующие драйверы.
6. Сканеры необходимы в тех случаях, когда требуется копировать тексты или изображения.
7. Для длительного хранения информации ее переписывают на дискеты или жесткие диски.
8. Драйверы обеспечивают успешную связь компьютера с периферийными устройствами.
9. Для безопасности желательно (полезно) проинсталлировать хорошую антивирусную программу.
10. Вирус может погубить не только полезную информацию, но также и программы.

13. Are you up to giving a right explanation?

Pick out a statement from this book. There are a lot of them. By the way, you may put your own idea in an oral frame as well. It's not prohibited. Stir up your imagination.

14. NO and NOT

In the text above you've read the following sentence:
No computer can function without some form of software.
Let's compare it with another one:
Not many computers can be found in small towns and villages.
Both sentences are all right, but can you explain why in the first statement is used «no» and in the second «not». Do you feel that it is correct or do you understand that it is correct? Check yourself. Fill the gaps choosing between no and not.

1. I have .... friends in this town.
2. I have .... time to go to the party. I must hit the books.
3. Are you going to study English? .... right away.
4. I have .... memory for names.
5. I do .... have memory for names.
6. It is .... a Pentium.
7. It is .... Pentium 4; it's a Pentium 3.
8. I used to think that there was .... difference between NO and NOT.
9. I have .... answer to this question.
10. I have .... the slightest idea of that.
11. I'm .... the person you're looking for.
12. I have .... idea.
13. It's of .... interest to me.
14. You have .... chance to work with this company.
15. You have .... the slightest chance to work with this company.
16. There's .... a chance for you to work with this company.
17. There's .... pen on the table.
18. May I borrow your pen, please? Sorry, I have .... pen. It is .... a pen. It's a pencil.
19. There are .... people in the street at night.
20. There's .... a person in the street at night.
21. I do .... need your advice. I'll solve the problem on my own.
22. I said I need .... advice.
23. .... news is good news.
24. There is .... possibility that we'll get there in two hours.
25. It is .... possible that we'll get there in two hours.

3. Vocabulary training

Words are, of course, the most powerful drug used by mankind.
Rudyard Kipling

1. *Identification of words.*

Match the words from the list below with their definitions.
You may help yourself looking up the dictionary at the end
of this book.

1 Tightly	6 Execute	11 Inevitable	16 Etch	21 Vary
2Colloquial	7Simultane ous	12 Forecast	17 Available	22Corresp ond
3 Control	8 Flexible	13 Pit	18 Ensure	23 Task
4 Store	9 Drug	14 Flow	19 Perform	24 Attach
5 Affinity	10 Current	15 Extreme	20 Light	25 Step-brother

1. ………..   close likeness or agreement
2. ………...   join to
3. ………..   ready to be used
4. ………..   used in everyday speech but not in formal writing or speaking
5. ………...   to be similar (to), match
6. ………...   belonging to the present time
7. ………...   a substance used in medicine to treat illness
8. ………...   make sure
9. ………...   eat out by acid, light etc
10. ………..   carry out
11. ………..   far from the ordinary or usual, very great
12. ………..   fault, imperfection
13. ………..   easily bent
14. ………...   to predict
15. ………..   not able to be avoided
16. ………...   not heavy
17. ………...   to do, to act
18. ………...   a hole

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19. .... to regulate
20. .... happening at the same time
21. .... child of an earlier marriage of one's father or mother
22. .... put aside for future
23. .... a set piece of work to be done
24. .... closely
25. .... make, be, or become different

2. Useful expressions

> **Words are loaded pistols.**
> **Jean-Paul Sartre**

Make up sentences using the italicized expressions from the list below:

to be distributed on a medium	to be written on a certain substance
to be in current use	to be used at present time
to be widely spread	to become widely known, distributed
to carry out	to perform
needles to say	it's not necessary to say
present day	now
to run information	to control information
to switch off	to turn off
to switch on	to turn on

3. Reading comprehension

Read the text, try to understand the topic and put the items in the right order. Take it into account that the first one is in the right position.

1. A virus is a program that will seek to duplicate itself in memory and on discs, but in a subtle way that will not immediately be noticed.

2. Note also that different platforms have different general levels of resistance, Unix machines are almost immune, Win '95/'98/Me is quite vulnerable, and most others lie somewhere in between.

3. Therefore a computer on the same network as an infected computer or that uses an infected disc (floppy or CD) or that downloads and runs an infected program can itself become infected.
4. For example, on a network consisting of a WinTel box, a Mac, and a Linux box, if one machine acquires a virus the other two will probably still be safe.
5. A virus can only spread to computers of the same platform.

4. *Computer terms in use*

A. *Match the terms in the left-hand column with their definitions in the right-hand column. E.G. 1-3.*

1. digital computer	1. a device that executes individual program instructions and controls the operations of other parts of the computer
2. software	2. a hard disc on which data are stored in the form of etched pits
3. hardware	3. a program that controls a peripheral device
4. scanner	4. a device, which manipulates information coded as binary numbers
5. driver program	5. visual display terminal
6. CPU	6. computer
7. VDT	7. the mechanical, electrical and electronic components of a computer system
8. floppy disc	8. a device for copying texts and pictures
9. CD ROM	9. a flexible disc, a storage device on which data are recorded magnetically
10. DDT	10. a software error or flaw
11. bug	11. debugging program
12. RAM	12. a permanent type of memory storage for important data that does not change
13. ROM	13. short-term memory
14. confuser	14. a collection of programs

B. Find out Russian equivalents of the computer terms given below. If it is beyond your grasp, give at least Russian explanation.

Compilation
is a process in which the program code developed by programmers – the source code – is «translated» into code that the computer can actually understand the object code. This is accomplished by a program called a compiler. For example, program code such as that developed under languages like COBOL must go through a compiler to be understood by the computer.

Computer-bound
is a software program that has been limited in speed or functionality due to the size of computers central processing unit.

Compatible software
is a software designed to allow for the exchange of data with other software.

Compression
is a the process of packing data into lesser amounts of **storage space**. Compression is achieved either within the software program or through special programs that perform this function.

Clipboard
is an area of memory for storing text that is in the process of being moved from one location to another. For example, if a paragraph is being moved to another place in a document, it is held in the clip-board while the user locates the spot where it is being moved.

Circuit board
is a thin board for mounting microchips and other electronic components, installed inside a computer functionality. The basic CPU of the computer is contained on a circuit board, called the motherboard. Circuit boards provide additional functions, such as graphics capabilities. The boards are often printed with a pattern to indicate

	how the circuit should flow. Circuit card is another term for circuit board.
Utility program	is a program that performs a specific function at the system level, such as managing the use of magnetic storage tapes for system backup.
Plug-in	is a piece of software designed not to run on its own but rather work in cooperation with a separate application to increase that application abilities.

4. Additional information

Bill Gates about his start

The story of Microsoft really began one day in 1975, when my friend Paul Allen and I saw an article in Popular Electronics describing a new «personal computer» called the MITS ALTAIR 8800. The Altair was very different from the mainframe computers that we were used to back then. It was a build-it-yourself kit for hobbyists – what arrived in the mail wasn't fully assembled computer, just some bags of parts and a set of photocopied instructions. After a few days (or weeks) of soldering, you ended up with a computer roughly the size of a bread box, with rows of switches and blinking lights.

It wasn't much to look at, and it was pretty much impossible to make it do anything useful, but right away we thought the Altair was the start of a revolution that would change the world. The «brain» of the Altair – the inexpensive Intel 8080 microprocessor – made possible a truly human-scale computer that could fit on a desk. In those days, when computers usually lived in air-conditioned glass rooms surrounded by trained technicians, that was an amazing achievement.

To transform that achievement into a breakthrough, the Altair needed software that could make it perform useful computing tasks. That set Paul and me on the path to forming our own software company. We knew that microprocessors would become more powerful and less expensive, so the cost of computers would come down.

We figured that would bring them within reach of far more people, from entrepreneurs to students to home users. And we concluded that this would create a huge demand for software. We formed a little partnership called Microsoft so we could be a part of this transformation.

Over the years, the PC has grown from a hobbyist's toy into an indispensable tool that continuous to change the world. Its revolutionized how we deal with information, how we communicate, and how we work, learn, and play. And the little company Paul and I dreamed up sitting around my college dorm room is now the world's biggest software company, employing almost 40,000 people in more than 50 countries. From our roots in programming languages and operating systems, we've ventured into just about every kind of software you can imagine, from industrial-strength servers to games.

We started with a vision of «a computer on every desk and in every home». We turned that vision – which many critics saw as nothing but a fantasy – into reality. Hundreds of current and former Microsoft employees were interviewed about our first 25 years – the successes and failures, the personal and professional challenges, and their dreams for the future. Those stories chronicle our growth from scrappy start-up to industry leader. They tell of the risks we've taken, the intense competition we've weathered, and the new trails we've blazed. They explain the complex process that takes us from good ideas to great products. They reveal what we're thinking about how technology can improve society and change the world. In 25 years we've accomplished so many things that people said were impossible, and we've shattered every myth about what the PC can't do. As ambitious as we were at the outset, we had no idea that we would become such a large and influential company, or that we would lead an industry that's come to play such an important role in the global economy.

Looking back at what we've achieved in 25 years, I feel certain that we'll have even more impressive things to remember in our 50th year. Every day, we're finding new ways for technology to enhance and enrich people's lives. We're really just getting started.

1. *Read and try to understand the given above text.*
2. *No doubt, a person who is willing to establish a new business must have certain skills, such as:*

UNIT 2

Communication skills.	Organizational skills.
Decision-making skills.	Planning skills.
Problem solving skills.	Creative skills.
Critical thinking skills.	Financial management skills.
Team building skills.	Scientific & investigative skills.

Besides that he or she must have administrative and leadership skills and, of course, be educated and experienced in the area of his activity and objectives.

He or she must be able to cope with stress and be prepared to take a risk preferably calculated one.

We give you free hand to add some more important skills that aren't listed above.

Now the questions are:

1. Why do you think Bill Gates is a success in his business? Prove your point of view.
2. Is it possible today to establish a new company either in the field of hardware or software that will be able in the future to compete with, for example, Microsoft, IBM or Intel. If «yes», what kind of a company it should be? If «not» – why «not»?
3. Do you feel yourself capable to be a head of a large hardware or software company? Give full answer, please.
4. Why the American Government wanted to divide Microsoft into two or maybe more independent companies?

5. Vocabulary peculiarities

Read, translate, remember.

This small piece of text represents you several examples of everyday speech in which phrasal verbs and idioms are used very often. Pay attention to them. Otherwise your spoken language will be stale and awkward. The attached vocabulary will alleviate your work.

Tom's trouble

Tom is a freshman. To buy a modern computer is his sweetest dream, but he cannot afford it because of the <u>lack of money</u>. If only he had a computer! Unfortunately, all his efforts to persuade his father to <u>help him over</u> that problem fail.

«This box with its dull useless games will take too much of your time», always grumbles his father. «You had better <u>brush away</u> this idea and <u>hit the books</u>». «<u>Back numbers</u> can never <u>keep up with</u> the times», murmurs Tom, «but I won't <u>throw in the towel</u>. It's not in my habit to <u>give in</u>. Sooner or later I'll <u>bring you round</u> to my way of thinking».

Yesterday on the way to the University Tom <u>ran into</u> his old friend, a first-class hacker, Jack.

Tom: Hi, Jack.

Jack: Hi, man. You look so downcast, Your <u>face is as long as a fiddle</u>. What's up?

Tom: My Dad <u>is against</u> buying me a new computer. He thinks I'll <u>be keen on</u> games. Then, as a result, I'll miss my classes and fail my exams. Yesterday he added that if it happened, everybody would say that he had caused it by letting me <u>have my own way</u>. <u>Sheer nonsense</u>!

Jack: We should do something about it…. Well, maybe you'll try to <u>butter him up</u>.

Tom: I wish I knew how to do that …. I even don't know how to go about it. You see, as a matter of fact, I've always been a hard working student, never missed my classes, and now <u>I'm getting along</u> quite well in the University as you know. I thought Dad would <u>take it into account</u>, but, <u>on the con-</u>

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trary, in this case he considers a computer as a wasting-time commodity. I think I'm fighting a losing battle.

Jack: Keep your chin up, Tom. Follow me now and you will win! Pull yourself together and tell your Dad that you would study much more better if you had at hand all the necessary internet information.

Tom: You're great, Jack! Your idea is excellent. It carried me away. I'll look in on my way home. Bye-bye.

Jack: Drop in whenever you like. I'll be in at night. Good luck.

Make up sentences using these phrasal verbs and expressions.

Useful vocabulary

A. Phrasal verbs

(A special group of words which consists of two or three words: a verb followed by an adverb, a verb followed by a preposition, or a verb followed by an adverb and a preposition)

be against	be opposed to (often used with gerund)
be in	be at home / in this building
bring round	persuade someone to accept a previously opposed suggestion (object usually before round)
brush away	treat as neither important nor desirable
butter up	flatter
carry away	transport, enchant
drop in	visit casually
get along (on)	make progress, be successful
give in	cease to resist
help over	to help (someone) to deal with (a difficulty)
keep up (with)	remain abreast of someone who is advancing
look in	pay a short visit
run into	meet accidentally

B. Expressions and idioms

face is as long as a fiddle	look very depressed
back number	old fashioned person

be keen on	be eager, enthusiastic
fight a loosing battle	try without success to achieve or prevent something
have at hand	be nearby
have one's own way	do what somebody wants
hit the books	study hard
keep one's chin up	stay cheerful in difficult circumstances
lack of money	short of money
on the contrary	just the opposite
pull oneself together	control oneself
sheer nonsense	absolute absurd
take into account	consider, remember
throw in the towel	surrender, give up

6. Just for fun

When a man points a finger at someone else, he should remember that three of his fingers are pointing at himself.

An expert is one who knows more and more about less and less until he knows everything about nothing.

Law of the office: Vital papers always move from where you left them to where you can't find them.

All things are possible except skiing through a revolving door.

Experience is the name everyone gives to his mistakes.
Oscar Wild

1

Clerk: Can I interest you in a nice pocket calculator?
Customer: No thanks, I know exactly how many pockets I have.
2

Customer (annoyed): You said this computer was foolproof, but I can't figure out how to use it.
Salesgirl (smiling):   There you are.

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Customer:	What do you mean?
Salesgirl:	Like I said, it's proof that you're a fool.

3

Tom, Bill and Dull were washed ashore on an island. Their only food and drink came from coconuts, and after a week they began to despair.

One morning a lantern was washed ashore and Tom picked it up. More despairing than hopeful, he rubbed it ...Out came a genie, who promised to grant each of the men one wish.

His eyes wide with thanksgiving, Tom asked to bring him back home. The genie snapped his fingers, and Tom was gone.

The same happened with Bill.

Looking around Dull began to weep. «I'm so lonely ... I wish the other two guys were back».

The genie snapped his fingers ...

4

«Oh, God,» sighed the wife one morning, «I'm convinced my mind is almost completely gone»! «I'm not surprised», answered her husband looking up from the newspaper, «you've been giving me a piece of it every day for twenty years».

Optimistic statements or Murphy's laws:
Murphy's first law:
Nothing is as easy as it looks.
Murphy's second law:
Everything takes longer than you think.
Murphy's third law:
Anything that can go wrong will go wrong and at the worst possible time.
Murphy's fourth law:
If there is a possibility of several things going wrong, the one that will cause the most damage will be the one to go wrong.
Murphy's fifth law:
If anything just cannot go wrong, it will anyway.
Murphy's sixth law:
Left to themselves, things tend to go from bad to worse.
Murphy's seventh law:

If everything seems to go well, you have obviously overlooked something.

Some useful advice:

1. *Do not believe in miracles – rely on them.*
2. *When working toward the solution of a problem, it always helps if you know the answer.*
3. *If your idea works – something has gone wrong.*
4. *Never underestimate the power of human stupidity.*
5. *Smile! Things can only get worse.*

UNIT 3

1. Information for study

Brief history of computer technology

*To err is human, but to really foul
things up requires a computer.*

Unknown

The evolution of digital computing is often divided into generations. Each generation is characterized by dramatic improvements over the previous generation in the technology used to build computers, the international organization of computer systems, and programming languages.

The mechanical era (1623–1945)

The idea of using machines to solve mathematical problems can be traced at least as far as the early 17th century, when mathematicians designed and implemented calculators that were capable of addition, subtraction, multiplication, and division.

The first multi-purpose, i.e. programmable, computing device was begun in 1823 but never completed. A more ambitious machine was the Analytical Engine. It was designed in 1842, but unfortunately it also was only partially completed, but nevertheless it was the first one to be used in computational science. By 1853 engineers had constructed a machine that won a gold medal at the Exhibition in Paris, and later it was used to calculate the orbit of Mars.

First generation electronic computers (1937–1953)

Three machines have been promoted at various times as the first electronic computers. These machines used electronic

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switches, in the form of vacuum tubes, instead of electromechanical relays. In principal the electronic switches would be more reliable, since they would have no moving parts, that would wear out, but the technology was still new at that time and the tubes were comparable to relays in reliability. Electronic components had one major benefit, however: they could «open» and «close» about 1000 time faster than mechanical switches.

The earliest attempt to build an electronic computer was realized in 1937, when a machine was created that could solve systems of partial differential equations. Later, by 1941, the scientists succeeded in building a machine that could solve 29 simultaneous equations with 29 unknowns. However, the machine was not programmable, and was more of an electronic calculator.

A second early electronic machine was Colossus, designed for the British military in 1943. This machine played an important role in breaking codes used by the German army in World War II.

Turing's main contribution to the field of computer science was the idea of the Turing machine, a mathematical formalism widely used in the study of computable functions.

The first general purpose programmable electronic computer was the Electronic Numerical Integrator and Computer (ENIAC) built at the University of Pennsylvania. Work began in 1943, founded by the Army Ordnance Department, which needed a way to compute ballistics during World War II.

The machine wasn't completed until 1945, but then it was used extensively for calculations during the design of the hydrogen bomb. By the time it was decommissioned in 1955 and used for solving different civil tasks including weather prediction a group of scientists began work on a new machine. The main contribution of their new project, was the notion of stored program. There is some controversy over who deserves the credit for this idea, but none over how important the idea was to the future of general purpose computers. Through the use of a memory that was large enough to hold both instructions and data, and using the program stored in memory to control the order of arithmetic operations, this machine was able to run orders of magnitude faster

than it was done before. By storing instructions in the same medium as data, designers could concentrate on improving the internal structure of the computer without worrying about matching it to the speed of an external control.

By recognizing that functions, in the form of a sequence of instructions for a computer, can be encoded as numbers, the scientists realized the instructions could be stored in the computer's memory along with numerical data.

Software technology during this period was very primitive. The first programs were written out in the machine code, i.e. programmers directly wrote down the numbers that corresponded to the instructions they wanted to store in memory. By the 1950s programmers were using a symbolic notation, known as assembly language, than hand-translating the symbolic notation into machine code. Later programs known as assemblers performed the translation task.

As primitive as they were, these first electronic machines were quite useful in applied science and engineering. One of the scientists estimated that it would take eight hours to solve a set of equations with eight unknowns using a previous calculator, and 381 hours to solve 29 equations for 29 unknowns. The up to time computer was able to complete the task in under an hour. The first problem run on it, a numerical simulation used in the design of the hydrogen bomb, required 20 seconds, as opposed to forty hours using mechanical calculators. Later the first commercially successful computer was developed. In 1952, 45 minutes after the polls closed and with 7% of the vote counted, it predicted Eisenhower would defeat Stevenson with 438 electoral votes (he ended up with 442).

Second generation (1954-1962)

The second generation saw several important developments at all levels of computer system design, from the technology used to build the basic circuits to the programming languages used to write scientific applications.

Electronic switches in this era were based on discrete diode and transistor technology with a switching time of approximately 0.3 microseconds. The first machines were built with this technology at Bell- and Lincoln Laboratories. Memory technology was based on magnetic cores which could be accessed in random order as opposed to the previous devices.

During this second generation many high level programming languages were introduced, including FORTRAN (1956), ALGOL (1958), and COBOL (1959). Important commercial machines of this era include the IBM 704 and its successors, the 709 and 70094.

The second generation also saw the first supercomputers designed specifically for numeric processing in scientific application. The term «supercomputer» is generally reserved for a machine that is an order of magnitude more powerful than other machines of this era.

Third generation (1963-1972)

The third generation brought huge gains in computational power. Innovations in this era include the use of integrated circuits, or ICs (semiconductor devices with several transistors built into one physical component), semiconductor memories starting to be used instead of magnetic cores, microprogramming as a technique for efficiently designing complex processors, the coming age of parallel processing, and the introduction of operating system.

The first ICs were based on small-scale integration (SSI) circuits, which had around 10 devices per circuit (or «chip»), and evolved to the use of circuits, which had up to 100 devices per chip. Multilayered printed circuits were developed and core memory was replaced by faster, solid state memory. Computer designers began to take advantage of parallelism by using multiple function units. In 1964, Seymour Cray developed the CDC 6600, which was able to attain a computation rate of 1 million floating point operations per second (1 Mflops). Five years later the CDC 7600 was capable of executing at 10 Mflops. At the same time IBM and other companies released computers of about the same rate of operations.

During this period Cambridge and the University of London cooperated in the development of CPL (Combined Programming Language, 1963). CPL was an attempt to simplify the complicated and sophisticated ALGOL, but this program was still hard to learn; therefore it was followed by BCPL (Basic Computer Programming Language, 1967). Later (1970) in Bell Labs another simplification of CPL was developed and called «B».

The incredibly fast progress in hardware, software and its technologies has begun.

Computer speech

Think twice before you speak to a friend in need.

A. Bierce

Compression	It is often possible to remove redundant information or to process it in lesser amount of storage space. Usually when a file has been compressed, it cannot be used until it is uncompressed.
Embedded	An embedded system is a computer that is inside another device and acts as a component of that device. E.g. cars have an embedded computer that helps regulate their day to day operations.
Extension	Filename extensions allow a rough grouping of different file types by putting a tag at the end of the name.
Partition	Sometimes due to hardware limitations, discs have to be divided into smaller pieces. These pieces are called partitions.
Protocol	is a means of communication used between computers. If both computers recognize the same protocol, they can communicate over the same network or even via a simple direct modem connection regardless whether or not they are themselves of the same type.

| UPS | Abbreviation for an uninterrupted power supply. It includes heavy duty batteries to help smooth out its input power source. |

2. Exercises

1. *Read and translate the text.*
2. *Check up your understanding. Give full answers:*

1. Looking back, when do you think the history of computers began?
2. How do you understand the term «computer generation»?
3. What do you know about the first programmable computing device?
4. Who constructed the first machine?
5. What was it used for?
6. Why the first period of the computer history is called «The mechanical era»?
7. What do you know about the first generation of electronic computers?
8. What do you know about the first electronic computer?
9. What was Colossus? What task it performed?
10. What do you think of software technology developed for the first generation electronic computers?
11. Were the computers of the first generation useful? Why?
12. How long lasted the period of the first computer generation? What was the first and the last event?
13. Why do you think computers were invented? What was the purpose?

3. Retell the text briefly using the following expressions and terms:

Can be traced, as far as, programmable computing device, electronic calculator, break codes, through the use of, hold instruc-

tions and data, assembly language (assembler), to run orders of magnitude, arithmetic operations, machine code, up to time computer, weather prediction, computer design, scientific applications, high level programming languages, memory technology, computational power, IC, CPL.

4. *What's missing? If you are in doubt refer to the text.*

1. During the early days of electronic computing devices, there was much discussions .... the relative merits of analog versus digital computers.
2. .... the end digital computing devices proved to have many advantages.
3. Now digital computers dominate the computing world .... all areas.
4. The 1st and the 2nd units are limited .... the area .... digital, electronic computers.
5. Each generation is characterized .... improvements .... the previous generation .... technology.
6. Their machine won a gold medal .... the exhibition .... France .... 1855.
7. Later this machine was sold .... one .... the of observatories .... the US.
8. The first electronic computers had no moving parts that would wear .... .
9. Colossus played an important role .... breaking codes used .... the German army .... the World War II.
10. Turing machine was used .... the study .... computable functions.
11. The credit due .... Turing and his colleagues .... designing one of the first computers was slaw .... coming.
12. There is some controversy .... who deserves the credit .... the idea .... a stored program.
13. Computers are very useful ... applied science.
14. Computer technology .... the first generation period was primitive.

5. Rearrange the words and get the right sentences:

1. was never / multi-purpose / device / the first / completed / computing/.
2. was / calculator / of / an /electronic / the machine / more /.
3. this idea / knows / who / the credit / for / nobody / deserves /.
4. are stored / as / the same / the instructions / medium / in/ data /.
5. generation / saw / the first / the second / super computers/.
6. enough / to hold / was / the instructions / and / large / data / the memory /.
7. in / were / useful / machines / applied / the first / electronic / science /.
8. the machine / were written / in / the first / code / out / programs /.
9. primitive / the beginning / very / technology / was in / software /.
10. as / performed / known / programs / the / translation / assemblers / task /.

6. _Put the letters in order to make words, then use the words to complete the sentences:_

guicopmtn, raalcccluto, somcprute, getchnoloy, ncbtontriuio, amgtdniue, mmdeiu, owls

1. Digital computers now dominate the .... world in all areas ranging from the hand .... to the supercomputer.
2. The mechanical era of .... lasted from 1623 up to 1945.
3. The main reason Babbage was not able to complete his projects was the fact that the .... of the day was not reliable.
4. Turing's main .... to the field of computer science was the idea of the Turing machine.
5. Through the use of a memory EDVAC was able to run orders of .... faster than ENIAC.
6. The designers stored instructions and data in the same ..... .
7. The first computers were extremely ..... .

7. *There are two words in each item. You must explain how is «a» like «b» and how «a» differs from «b»:*

1. (a) work, (b) job;
2. (a) difference, (b) likeness;
3. (a) competitor (b) opponent;
4. (a) mechanical computer, (b) electronic computer;
5. (a) gold, (b) silver;
6. (a) construct, (b) design;
7. (a) computer, (b) calculator;
8. (a) purpose (b) goal;
9. (a) fast (b) slow;
10. (a) complex (b) primitive.

8. *Give the opposites of the following words:*

1. lead; 2. digital; 3. arise; 4. supercomputer; 5. evolution; 6. science; 7. wide; 8. be capable; 9. reliable; 10. merge; 11. complete; 12. win; 13. open; 14.finish; 15. external; 16. faster; 17. large; 18. modern; 19. be able; 20. powerful.

9. *Give the synonyms of the following words:*

1. evolution; 2. machine; 3. construct; 4. major; 5. need; 6. general; 7. found; 8. complete; 9. improve; 10. concentrate; 11. match.

10. *What verbs precede these words?*

1. improvement; 2. a machine; 3. technology; 4. a calculator; 5. benefit; 6. a role; 7. codes; 8. a task; 9. a problem; 10. a circuit.

11. *Supply the articles where necessary:*

1. .... first programmable computing device was begun in 1823.
2. .... evolution of computers technique is divided into generations.
3. Their machine won .... gold medal at .... Exhibition in Paris, and later it was used to calculate .... orbit of Mars.
4. .... engineers began to work on .... smaller version.
5. One of .... first commercial uses of mechanical computers was by .... US Census Bureau.

6. .... technology was still new at that time and .... tubes were comparable to relays in reliability.
7. .... earliest attempt to build an electronic computer was realized in 1937.
8. .... second early electronic machine was Colossus, designed for the British military in 1943.
9. ....Turing's main contribution to .... field of computer science was .... idea of .... Turing machine, ... mathematical formalism widely used in .... study of computable functions.
10. .... main contribution of their new project, was .... notion of stored program.

12. Translate into English:

1. Спор о преимуществах цифровых компьютеров по сравнению с аналоговыми продолжался длительное время до 1960 года.
2. Все цифровые компьютеры в зависимости от их возможностей и конструкции разделяют на несколько поколений.
3. Каждое поколение превосходит по своим характеристикам предыдущее.
4. Поэтому, фактически, история развития компьютеров является историей развития их поколений.
5. Самая первая компьютерная эра, которая была самой длительной, связана с развитием механических компьютеров.
6. Первый компьютер, получивший золотую медаль на выставке в Париже, был разработан в 1893 году.
7. Первая компьютерная корпорация была создана в 1911 году, когда слились две конкурирующие компьютерные компании.
8. Самая первая попытка построить электронный компьютер была предпринята в 1941 году.
9. Этот компьютер сыграл важную роль во время второй мировой войны, так как был использован для дешифровки немецких секретных кодов.
10. Создание памяти было важным шагом в истории развития современных компьютеров.

11. В современных компьютерах память можно наращивать (увеличивать).

13. *Are you up to giving a right explanation?*

Look for a statement in this book or put your own idea in an oral frame and use it.

DO and MAKE

Many times you have come across these two verbs.
Maybe you even know that they are not interchangeable. If so, check yourself.
Complete the following sentences with do or make.

1. You must .... your duty.
2. Do not .... fun of me. I don't like it.
3. A glass of whisky will .... you good.
4. Do not try to .... me out a liar.
5. Thank you, you have .... a lot of business with us.
6. You .... a big mistake getting in touch with this company.
7. She'll .... him a good wife.
8. I'm .... a speech tomorrow.
9. After hot discussions they .... peace at last.
10. I .... my homework yesterday.
11. It won't .... you any harm to .... this exercise again.

If you're in doubt we can help you.
DO and MAKE have different meanings. Do means to perform routine work.
Make means to create. Hence, we say, for example, «I did my home-work yesterday». Here you use «do» because you had been taught how to fulfill this work. But you say «I made mistake» because it's your own fancy.
DO is used in many wide spread expressions, such as:
He did his best and won the prize.
The accident isn't his fault; it has nothing to do with him.
How do you do.
Tell the truth and have done with it!
You must do without much drink.

This is all I have, will it do?
It won't do you any harm ....
This is the best I can do for you.
If DO precedes another verb, it emphasizes it and
is often used when you invite smb to do smth:
Do come to tea; do sit down; do take off your coat.
Sometimes it's used to stress your absolute persuasion:
I do know it! I do love you! I do understand it!
If MAKE precedes another verb it has a shade of
compulsion:
I'll make you do this work from the very beginning up to the end!
Pay attention to the bare infinitive in this case.

3. Vocabulary training

1. Identification of words

Match the words in the left-hand column with their defini-tionsin the right-hand column, e.g. 1-9.

1. design	1. gradual development
2. division	2. people born at about the same time
3. evolution	3. discover the answer to
4. generation	4. follow the tracks or course
5. multiplication	5. a result of taking away one number from another
6. previous	6. a result of increasing a number by adding it to itself a certain number of times
7. promote	7. a result of finding out how many times one number contains another
8. release	8. advertise
9. sequence	9. a plan of
10. solve	10. allow to be made public
11. subtraction	11. going before in time

12. trace	12. a number of things following in order
13. poll	13. give your support to a particular candidate
14. vote	14. place for an election

2. Useful expressions

Invent sentences using the expressions from the left column:

Expression	Definition
«open» and «close»	turn on and turn off
a sequence of instructions	an order of commands
ambitious machine	(here) computer that meets up to date requirements
be capable of executing	be able to carry out
break codes	solve a task concerning a system of signals used for secrecy
bring huge gains in computational power	enlarge very much computational possibilities
deserve the credit for the idea	deserve acknowledgement of merit of being the first who proposed the idea
divide into	separate into parts
dramatic improvements	impressive improvements
in principle	chiefly
in under an hour	in less than an hour
the second generation saw	the second generation included
up-to time	modern
wear out	become damaged by prolonged use

3. Reading comprehension

Read the text, try to understand the topic, look for the logical sequence of the items and put them in the proper order. The first item is in the right position.

1. On May, 22, 1990, the critically accepted Windows 3.0 was released. Windows 3.0 had an improved program manager and icon system, a new file manager, support for sixteen colors, and improved speed and reliability.

2. Windows 2000 was based on Microsoft's NT technology, and Microsoft offered automatic software updates over the Internet. We can expect to see a greater user of speech and facial recognition in future versions of Windows. Computer users will soon control their computers without even touching a keyboard or mouse.

3. On August 24, 1995, Windows 95 was released in a buying fever so great that even consumers without home computers bought copies of the program. Windows 95 was considered very user-friendly. It was the first version of Windows that did not require MS-DOS to be installed beforehand.

4. Most important, Windows 3.0 gained widespread third-party support. Programmers started writing Windows-compatible software, giving users a reason to buy Windows 3.0. Three million copies were sold the first year, and Windows finally came of age.

5. On June 25, 1998, Microsoft released Windows 98. It was the last version of Windows based on the MS-DOS kernel. Windows 98 has Microsoft's Internet browser «Internet Explorer 4» built in and supports the new input devices like USB.

6. On April 6, 1992, Windows 3.1 was released. Three million copies were sold in the first two months. True Type scalable font support was added, along with multimedia capability etc.

4. Computer terms in use

A. Match the terms in the left-hand column with their definitions in the right-hand column, e.g. 5-7.

1. basic circuits	1. a machine that that can be used for different purposes
2. compression	2. a series of actions that computer performs accepting data from users and producing a respond
3. extension	3. a list of instructions written in a computer language
4. general purpose computer	4. electronic devices
5. high level language	5. a programming language that communicates directly with the hardware
6. low level language	6. a means of communication used between computers
7. parallel processing	7. a programming language that must be processed through a compiler before they can be put to use
8. process	8. a rough grouping of different file types by putting a tag at the end of the name
9. program	9. processing data through the use of two or more CPUs
10. protocol	10. the process of packing data into lesser amount of storage space

B. *Find out Russian equivalents of the computer terms given below. If it is beyond your grasp give at least Russian explanation:*

OS. The software program, that controls the operating of a computer. It acts as an interface between the machine and the software applications. OS creates and organizes files and directories. It also controls the operation of peripheral devices. «OS» is an abbreviation. What does it mean?

Boot. Starting up an OS is booting it. If the computer is already running, it is more often called **rebooting.**

Address. A location of data, which is usually in main memory or on a disc. You can think of computer memory as an array of storage boxes, each of which is one bite in length. Each box has an

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address (a unique number) assigned to it. By specifying a memory address, programmers can access a particular byte of data.

Discs are divided into tracks and sectors, each of which has a unique address.

Format a disc. To prepare a storage medium, usually a disc, for reading and writing. When you format a disc, the operating system erases all bookkeeping information on the disc, tests the disc to make sure all sectors are reliable, marks bad sectors (those that are scratched) and creates internal address tables that it later uses to locate information.

Capture. A term for saving data in a computer.

Buffer. A temporary holding place reserved in memory.

Browse. To look through files, directories etc on a computer system.

4. A bit of reading practice

Norbert Wiener (1894-1960)

Mathematician Norbert Wiener's work in the area of communication theory led to the development of cybernetics, or the study of control and communication in animals and machines. His work also formed the basis for the branch of artificial intelligence research based on the processes of the human mind.

The son of a somewhat eccentric professor of Slavic languages and literature American mathematician Norbert Wiener's inherent brilliance set him on intellectual path at an early age. Although his upbringing backfired to a certain degree, leaving him always somewhat skeptical of his abilities, Wiener's work in mathematical theories would lead him to the founding of a new discipline – cybernetics, or the study of control and communication in animals and machines.

Wieners intellectual gifts exhibited themselves at an early age. Born in the college town of Columbia, Missouri, he was quickly recognized as a child prodigy and was reading fluently by age of three. He entered high school at nine, completing the four-year course in just two years, and went on to complete his undergraduate degree at Tufts University at age of 14. The following year, Wiener began postgraduates studies at Harvard University, earning his master's degree in 1912 and his Ph.D. in mathematical logic one year later at the age of

19. He then traveled to England and attended Cambridge University, where he studied logic. Following his studies at Cambridge, Wiener attended the University of Gottingen in Germany.

On his return to the U.S., Wiener taught at Colombia, Harvard and Main Universities. Finding it difficult to focus entirely on academics, he also worked for a year as a stuff writer for *Encyclopedia America*, and for another year as a journalist for the *Boston Herald*. Although an ardent pacifist, Wiener also worked as a mathematician at the U.S. Army's Ballistic Research Laboratory in Aberdeen, Maryland, where he helped formulate mathematical tables that were used to determine where guns should be aimed before firing. He was appointed professor of mathematics at the Massachusetts Institute of Technology in 1919, and remained on faculty there until 1960.

His scientific work at MIT sparked his interest in how information was transmitted and processed, both in humans and machines. As Wiener saw it, pure communication process involves similar, definable elements, whether they are conducted by machines or man. If those elements, or messages, once they were defined, could be rigorously controlled, then they could also be used to control both machines and human beings. And, by being able to modify behavior learning from these processes, both man and machine could evolve to higher levels functioning.

As Wiener continued his research, he coined the term *cybernetics* (from the Greek kybernetes for steersman).

Wiener's work before and during World War II led to the publishing of *Cybernetics, or control and communication in the animal and machine* in 1948. In it he described a new way of looking at how the world functioned, based on his research on the way in which information is transmitted and processed. He saw a world that focused on information, not energy; and on digital or numeric processes. His theories not only laid the foundation for this new field of study, they also largely predicted the future development of computers. The book had an immediate impact; terms such as *input, feedback* and output, in common use today, were first introduced in *Cybernetics*. In subsequent books, he would theorize about a world where machines triumphed over their creators.

Wiener remained an active mathematician throughout his life. Although he is most noted as «the father of cybernetics», he also made many contributions to the fields of pure and applied mathematics, theoretical physics and theoretical engineering. Wiener's work also formed the basis of another new scientific field – artificial intelligence – which amplified many of his theories on the relationship between man and machine in its search to develop a machine that could think.

Read and try to understand the given above text. Answer the questions:

1. What do you think about the artificial intelligence. Is it possible to create something like that? In case of your positive or negative answer prove your point of view.
2. Don't you think that our modern computers symbolize movement towards the artificial intelligence? How can you prove your point of view?
3. Suppose, let's say, in ten or twenty years the computer market will offer you instead of a computer an artificial intelligence. What would be your attitude to it?
4. No doubt, an artificial intelligence will essentially change people's life. Can you predict in what way? You have a free hand to stir up your unrestricted fantasy.

5. Vocabulary peculiarities

Read, translate, remember.

A sharp turn

We left our friend Tom in a black mood because his sweetest «computer dream» didn't come true. The main stumbling block, his Dad, was absolutely convinced that «this box would induce Tom to take to computer games and miss his classes; then he would fail his exams and would have to repeat the year». Tom knew that if his Dad had made up his mind everyone might have just as well give in without any fuss because his opinion was set in stone. It was a blind alley and there was no way out of it.

On a sudden ... a lucky event turned the «routine course» of Tom's life to a new favorable direction. Now it looks like things will <u>pan out</u> for him well. You'll <u>find out</u> what happened while <u>looking over</u> the phone conversation between the two old friends, Tom and Jack.

Jack: Hallo, Jack speaking.

Tom: Hi, buddy! Big news! <u>The tide has turned for me</u>!

Jack: Congratulations. ... Have you won a prize in a lottery?

Tom: No, but, you see, Dad is <u>put out</u> 'cause he has realized eventually that the absence of a modern computer at home <u>is keeping him back</u>.

Jack: I still can't <u>make out</u> what's up. ... <u>Calm down</u>, Tom. ... Don't <u>beat about the bush</u>, ... <u>say to the subject</u>.

Tom: Well, as you know Dad is in advertising. Yesterday he came back from his office and was very excited. I overheard accidentally when he said to Mum that he <u>was in charge</u> of a large TV advertisement project and that «from now on the whole thing <u>turns on</u> him. Consequently», he <u>went on</u>, «I have to <u>slave away</u> on the evenings and weekends at home». Later in the evening Dad entered my room. «<u>Have a word with you</u>, Tom», said he, «what about our computer? Can you install modern graphic and multimedia programs?» Boy, it <u>dawned on</u> me that it was a lucky chance and I <u>jumped at</u> it instantly. «No, Daddy», I answered, «our box <u>is absolutely out of date</u>. <u>It's good for nothing</u> except for a dump». Dad stared at me, «What makes you think that?» «My common sense and experience», I answered. For a while Dad <u>was buried in</u> reflection. «Well, isn't it possible to upgrade it?» asked he. «I can't say for certain <u>on the spur of the moment</u>, but I think <u>it won't do any good</u>», was my reply. Our conversation <u>was kept on</u> over the supper table. <u>In the end</u> dad said, «Well, I'll buy a new one. ... I'm driven by circumstances». «I <u>fall in with</u> your plan and <u>take you at your word</u>», sighed I with relief. «<u>You bet</u>», answered Dad. Things <u>are looking up</u> now!

Jack: I <u>got the picture</u>, man. As my Dad says, no one knows
          what the future has in store for us. Eventually, you
          <u>lucked out</u> and <u>that's it for you</u>! Congratulations!
Tom: Thank you, boy. May I ask you for some help and advice?
Jack: Be sure, I'll <u>stand by</u>. By the way, <u>you're in for</u> a slight
          shock as I suspect your new box must be the last word in
          computer technology. Hence, your Dad will <u>shell out</u>
          a lot to get it, but I <u>am up to</u> <u>cutting down</u> your expenses
          essentially.
Tom: What's the big idea?
Jack: Well, I can't make up my mind <u>straight away</u>, but
          I'll <u>think over</u> one idea, <u>buck it up</u> and <u>come round</u> to let
          you know my decision. What about tomorrow, let's say,
          at 9 p.m.?
Tom: Oh, that's OK. We usually <u>turn in</u> at about 11.00. I guess
          we must <u>talk</u> this matter <u>over</u> with Dad. I think he'll <u>take
          up with</u> you. Thank you for <u>backing me up</u>, boy. Bye!
          I'm looking forward to seeing you tomorrow!
Jack: <u>So long</u>!

Make up sentences using these phrasal verbs and expressions.

Useful vocabulary

A. *Phrasal verbs*

back (somebody) up	support morally or verbally
be in for	be about to encounter something (often bad)
be put out	be upset
be up to	be able
buck up	pay attention to improving smth
calm down	become calm, quiet
come true	end by being real (of wish, fear, or plan for the future)
come round	pay a visit
cut down	reduce

give in	surrender
fall in with	accept, agree with
find out	discover
go on	continue
jump at	accept with enthusiasm
keep back	prevent the development of
keep on	continue
look over	examine carefully
look up	improve
luck out	be lucky, have good luck
make out	understand
pan out	turn out, develop
shell out	pay out too much (usually unwillingly)
slave away	work very hard and unwillingly for a long time
stand by	be ready for action
take to	adopt as a hobby
take up with	become friends with
talk over	discuss in detail
think over	consider carefully
turn in	go to bed
turn on	depend on

B. Expressions and idioms

be buried in reflection	think deeply
be driven by the circumstances	be urged to do smth under certain circumstances
be good for nothing	be useless
be in a black mood	be sad
be in charge of	having control of
be out of date	be not modern
be set in stone	be constant
beat about the bush	avoid or not to be able saying smth directly

blind alley	anything which leads nowhere; a street open only at one end
get the picture	understand
have a word with you	want to speak to you
in the end	at last
it won't do any good	it will not bring satisfactory results
make up one's mind	come to a decision
on the spur of the moment	do something without preparation
repeat the year	go over the same courses
say to the subject	be concise and concrete
so long	good bye
straight away	immediately
stumbling block	handicap, obstacle
take you at your word	act according to the exact meaning of what is said
that's it for you	have possession of an object, beyond which more of the same is unnecessary
tide has turned for me	better days are ahead
what's up	what happened
you bet	certainly, of course

6. A bit of humor

DVD for dummies

- Hello, tech support.
- Hi. I bought one of those new computers from you and it is not working the way it's supposed to.
- What seems to be the problem, sir?
- Your sales guy told me it has this DVD in it that plays movies.
- And it is not working?
- Nope. I click on the thing on the screen that says DVD and don't get a thing.

– The movies should actually start automatically when you insert a DVD disc.

– Well, I didn't try that. You have to insert some kind of disc?

Build a system that even a fool can use and only a fool will want to use it.

Banking

After reading the extremely complicated instruction for the automatic teller, the confused customer asked a bank officer:

– Excuse me, be so kind as to help me out.

Officer:

– Certainly, go out through this door.

The phrasal verb «to help out» has two meanings:

- *to help to get out of something,*
- *to help someone with a need or difficulty.*

Hence, you see that the kernel of this anecdote is based on a pun. Many American and English anecdotes are made up the same way.

Here is another one of this kind. Try to understand it. You can check the result of your efforts looking up the dictionary of expressions at the end of this book.Go ahead!

Good news and bad news

The accountant said to his client: There is good news, and there is bad news.

Client: Give me the bad news first.

Accountant: Your business is flat on its back.

Client (hopefully): And what is the good news?

Accountant: It's looking up!

Diving

Longing to learn to scuba dive, Mr. Cousteau spent a vast amount of dollars for lessons, then for suit, tanks, mask and so on.

Buying a boat and sailing to the Bahamas, he was full of pride as he went down for the first time.

Photographing the coral and fish, and using his waterproof pen and notebook to make notes, he was extremely astonished to find a man swimming below him without a scrap of equipment. Tapping the man on the shoulder, he wrote, «I spent a lot of money to learn to scuba dive, and you are here in just a bathing suit. How did you come to it?» Grasping the notebook and the pencil the stranger wrote hurriedly, «You, blockhead, I'm drowning».

Clothes and clothing

Watching her mother as she tried on her new fur coat young Becky said unhappily, «Mom, do you realize some poor defenseless dumb beast suffered so you could have that». Mother shot her daughter an angry look, «Becky, how dare you talk about your father that way»?!

Those who make their dress a principal part
of themselves, will, in general, become of no
more value than their dress.
                                             W. Hazlit

What a man enjoys about a woman's
clothes are his fantasies of how she would
look without them.
                                             B. Francis

Wife (coming home from the store with a new dress):
                    Do you like it, darling?
Husband: But, honey, it's made from plastic and is absolutely
                    transparent. People will see right through it.
Wife: No, they won't, darling. I'll be inside of it.

It is not only fine feathers that make fine birds.
                                             Aesop

In every hierarchy, each employee tends to rise to his level of incompetence; every post tends to be filled by an employee incompetent to execute its duties.

Incompetence knows no barriers of time or place.

When working toward the solution of a problem, it always helps if you know the answer.

Life's laws:
1. *If you explain so clearly that no one can misunderstand, somebody will.*
2. *If you do something which you are sure will meet with everyone's approval, somebody won't like it.*

A plucked goose does not lay golden eggs.

Trite proverbs	**and**	**their modern versions**
Better late than never.		Better late than before anybody has invited you.
He laughs best who laughs last.		He laughs best who laughs least.
Of two evils choose the least.		Of two evils choose to be the least.
Example is better than precept.		Example is better than following him.
Whatever is worth doing, is worth doing well.		What is worth doing is worth the trouble of asking somebody to do it.
A bad workman quarrels with his tools.		A bad workman quarrels with the man who calls him that.
Where there is a will there is a way.		Where there is a will there is a won't.

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UNIT 4

....

1. Information for study

Brief history of computer technology (2)

> *History, an account mostly false, of events mostly unimportant.*
>
> *Ambrose Bierce*

History books, which contain no lies, are extremely dull.

Fifth generation (1984-1990)

The development of the next generation of computer systems is characterized mainly by the acceptance of parallel processing. The fifth generation saw the introduction of machines with hundreds of processors that could all be working on different parts of single program. The scale of integration in semiconductors continued at an incredible pace – by 1990 it was possible to build chips with a million components – and semiconductor memories became standard on all computers.

Other new developments were widespread use of computer networks and the increasing use of single-user workstations. Prior to 1985 large scale parallel processing was viewed as a research goal. For example, a machine was designed in which 20 processors were connected up to a single memory module. Each processor had its own local *cache* memory, a special memory subsystem that temporarily holds data or program instructions to improve overall computer performance. Most caches copy data from a standard computer memory, RAM, to a type of memory that allows faster data access by the CPU.

Disk Caches are designed to compensate for the speed discrepancy between the very fast CPU and the much slower disc

drives. *Internal* and *external memory caches* are designed to compensate for the discrepancy between the CPU and the slower RAM chips. All *Caching Systems* are designed to prevent main memory, RAM, from being an information bottleneck between the CPU and the much slower hard disc drives.

On the other hand, Intel instead of using one memory module connected each processor to its own memory and used a *network interface* to connect processors. This distributed memory architecture meant that large systems, using more processors, could be built. The largest machine had 128 processors.

Toward the end of this period a third type of parallel processor was introduced to the market. In this style of machine, known as data-parallel or *SIMD*, there were several thousand very simple processors. All processors worked under the direction of a single control unit.

Scientific computing in this period was still dominated by *vector processing*. The term «vector» has two common meanings. The first is in the geometric sense: a vector defines a direction and magnitude. The second concerns the formatting of fonts. If a font is a vector font, it is defined as a line of relative size and direction rather than as a collection of pixels. This makes it easier to change the size of the font, but puts a bigger load on the device that has to display the fonts.

Most manufacturers of vector processors introduced parallel models, but there were very few processors in these parallel machines.

In the area of computer networking, both wide area network (*WAN*) and local area network (*LAN*) technology developed at a rapid pace, stimulating a transition from the traditional mainframe computing environment toward a distributed computing environment in which each user has his own workstation for relatively simple task (editing and compiling programs, reading mail) but sharing large, expensive resources such as file servers and supercomputers. *RISC* technology (a style of internal organization of the CPU) and plummeting costs for RAM brought tremendous gain in computational power of relatively low cost workstations and servers. This period also saw a marked increase in both the quality and quantity of scientific visualization.

Sixth generation (1990 – ...)

Transitions between generations in computer technology are hard to define, especially as they are taking place. Some changes, such as the switch from vacuum tubes to transistors, are immediately apparent as fundamental changes, but others are clearly only in retrospect. Many of the developments in computer systems since 1990 reflect gradual improvements over established systems, and thus it is hard to claim they represent a transition to a new «generation», but other developments will prove to be significant changes.

This generation is beginning in parallel computing, both in the hardware area and in improved understanding of how to develop algorithms to exploit diverse, massively parallel architectures. Parallel systems now compete with vector processors in terms of total computing power and most expect parallel systems to dominate the future.

Combinations of parallel / vector architectures are well established, and one corporation (Fujitsu) has announced plans to build a system with over two hundred of vector processors. Manufacturers have set themselves the goal of achieving teraflops (1012 arithmetic operations per second) performance by the middle of the decade, and it's clear only a system with a thousand processors or more will obtain this. Workstation technology has continued to improve, with processors designs now using a combination of RISC, pipelining, and parallel processing. This development has sparked an interest in heterogeneous computing: a program started on one workstation can find idle workstations elsewhere in the local network to run parallel subtasks.

One of the most dramatic changes in the sixth generation will be the explosive growth of wide area networking. Network bandwidth has expanded tremendously in the last few years and will continue to improve for the next several years. Network technology is becoming more widespread than its original strong base in universities and government laboratories as it is rapidly finding application in education, community networks and private industry.

Swiftly changing situation in computer progress is tightly connected with the impressive permanent improvement of

microprocessors, which are known as central processing units (CPUs). A microprocessor, which includes a huge amount of transistors, is fabricated on a surface of a thin silicon layer with the help of a very complicated and precise semiconductor technology. Such electronic elements are usually called integrated circuits or chips. Engineers' striving for a multifunctional processor with high speed of operations performance forces them to increase the number of transistors and, as a consequence, to lessen their size. This dynamic of the INTEL CPU development is shown in the table below:

Name of processor	Date of introduction	Number of transistors	Size of transistors, microns	Speed, MIPS
8080	1974	6,000	6	0,64
8088	1979	29,000	3	0,33
80286	1982	134,000	1,5	1
80386	1985	275,000	1,5	5
80486	1989	1,200,000	1	20
Pentium	1993	3,100,000	0,8	100
Pentium II	1997	7,500,000	0,35	300
Pentium III	1999	9,500,000	0,25	510
Pentium 4	2000	42,000,000	0,18	1,700

MIPS stands for million instructions per second.

What to expect?

My interest is in the future because I am going to spend the rest of my time there.

Unknown

As you can see, the number of transistors and the speed of performance in the period of 1979-2000 were steadily increasing simultaneously with the decreasing of transistor size – from 6 down to 0,18 microns. For comparison, the thickness of a human hair is about 100 microns. It's worth to stress that the illustrated above tendency is still keeping on.

In 1965, three years before Intel was founded, Gordon Moore noticed that microchip capacity* seemed to double every 18 to 24 months. This rate of increase later became known as Moore's Law. We gathered up a list of every major Intel processor family and got the corresponding number of transistors per chip. The result, a graphical representation, demonstrates that Moore's Law is alive and well. What is the future of Moore's Law?

Andy Groove, former Intel CEO**, predicted that Intel would ship a processor with one billion*** transistors in 2011 which is in line with Moore's Law. Other industry experts see silicon technology reaching its physical limits**** at around 2017. The implications of the continued viability of Moore's Law are profound. In addition to the fact that our increasingly computerized economy will become even more productive, other technologies such as voice recognition, virtual reality, and artificial intelligence begin to appear possible. And speaking of profound, if Moore's Law were to somehow survive on into 2030, the processor would than surpass the computational power of the human brain.

Gordon Moore was one of the Intel founders

* number of transistors on a chip
** Chief Executive Officer
*** a thousand millions – 1 000 000 000 (US, now often in Britain)
**** amount of transistors per one unit of a chip surface area

It would be possible to finish on this optimistic prediction the brief, though far from being complete, history of computers. But still the question concerning even the nearest future of these machines has not been exhausted yet since in scientific literature you can find «slightly» different opinions. We can't help sharing the extracts of them with you:

For more than forty years manufacturers have crammed more and more devices, particularly transistors, into microprocessors. The current technological process to pack them is a photography-like technique called DUVL (Deep-Ultraviolet Lithography). Every technology has its limits. According to estimations

DUVL will reach them around 2005. So at this time the Moore's Law won't work and engineers will have to look for other technologies to enhance the density of devices onto the chip. There are several possible ways to achieve it.

The first one, traditional, implies to improve the DUVL towards the higher resolution. It would be possible provided a new high resolution equipment were designed. The question is – what are the prospects and how long it'll work? In other words, is the game worth the candle? Some scientists who are in doubt about this way of technological progress are looking for possible alternatives as, for example, biological or DNA and quantum computers. DNA is an abbreviation for Deoxyribonucleic Acid, the main part of every cellular organism that preserves the basic genetic code. DNA computers will have many advantages in comparison with to-days ones:

- they will be much more smaller;
- they will store much more information;
- they will perform calculations simultaneously; it'll allow to solve complex mathematical problems in hours – problems that might take contemporary computers hundreds of years to complete. «The tear-drop sized DNA computer will be more powerful than the world's most powerful supercomputer».

Our computers work by manipulating «0» or «1». Quantum computers will be able to encode information the same way or in between «0» or «1». In this case atoms are working together to serve as computer memory and microprocessor. Such computers will be millions of times more powerful than to-days most powerful supercomputers! What's more, if it happened, people would be wearing them like a watch. Wearable computers will be built into people's clothing or jewelry. Voice and handwriting recognition software will provide the possibility to interface with such computers without the help of keyboard or mouse. It is quite interesting, isn't it?

Computer speech

Density	Indicates how tightly information is packed together on a storage medium (tape or disc). A higher density means that data are closer together, so the medium can hold more information.
Disc drive	It's a machine that reads data from and writes data onto a disc. It has one or more heads that read and write data. There are different types of disc drives for different types of discs. E.g., a hard disc drive (HDD) reads and writes hard discs, and floppy drive (FDD) reads and writes floppy discs. A magnetic disc drive reads magnetic discs, and an optical drive reads optical discs.
Driver	It is a piece of software that lets a PC talk to peripherals and other hardware. It interprets standard operating system commands to the specific, quirky needs of the hardware. There are drivers built into the operating system to control memory, cash, and other basics of a PC; the system BIOS chip holds drivers for such essential components as the keyboard and floppy drive. Driver software is written for each piece of hardware.
Adapter	It is a device that permits to connect a peripheral unit (e.g. monitor) to a computer.
Operating System (OS)	The «master control software» of a PC hat allows the computer itself to operate. It is the first program to load into memory when the computer is started, and remains in memory as long as the computer is running. The operating system controls the computers use and allocation of system resources, such as processing time, memory, disc space and so on. All applications must interact with the operating system to gain access to system re-

Path
sources, and all applications are limited by the operating system for which they are designed. The location of a file or directory. The path describes the location in relation to either the root directory, or the current directory. E.g.: C: \ Windows \ System.

Plug and Play
An industry standard that allows computer peripherals to be automatically configured by the OS.

2. Exercises

1. *Read and translate the text.*

2. *Check up your understanding. Give full answers:*
1. What are the main features of the fifth computer generation?
2. What were the Caching Systems designed for?
3. What can you tell about the fifth generation chips?
4. What does it mean CPU?
5. Can you tell the difference between WAN and LAN?
6. Can you define a sharp threshold between the fifth and the sixth generations of computers?
7. What are the main features of the sixth generation?
8. Why are engineers striving for the improvement of CPUs?
9. What forces engineers to increase the number of transistors in microprocessors?
10. Why do we need high speed of operation performance?
11. What are the main functions of an operating system?
12. Which operating systems do you know and which one do you use?
13. What is your opinion? Is it necessary to invent new computer technologies? Why?
14. Which are possible new ways of technological computer progress?
15. What computer do you dream of?

3. Retell the text briefly using the following expressions and terms:

Fifth generation, sixth generation, parallel processing, semiconductor memory, chips, widespread use of, cache, RAM, CPU, transistor, gradual improvement of, explosive growth of, computer progress, be tightly connected with, high speed of operations, Moor's Law, microprocessor.

4. What's missing? If you are in doubt, refer to the text. Take it into account that in each item the first letter of the missed word is used:

1. Caches are designed to compensate for the speed d.... between CPU and RAM.
2. Widespread use of computer n.... is one of the features of the fifth generation.
3. Intel instead of using one memory module connected each p.... to its own m......
4. A new type of parallel processor was introduced to the m......
5. Scientific computing was still dominated by v.... p......
6. The switch from vacuum tubes to t.... is apparent as fundamental change.
7. N.... technology is rapidly finding application in education.
8. Swiftly changing situation in c.... progress is tightly connected with the improvement of m......
9. A microprocessor includes a huge amount of t......
10. Gordon Moore noticed that m.... c.... seemed to double every 18 to 24 months.
11. The processor will be able to surpass the c.... p.... of the human brain.
12. For forty years manufacturers have c.... many devices into CPU.
13. The tear-drop sized DNA c.... will be very powerful.
14. Voice and handwriting recognition s.... will provide the possibility to i.... with computers.

5. **Rearrange the words and get the right sentences:**

1. processors / largest / 128 / machine / had / the /.
2. processor / had / cash / its / local / memory / own / each /.
3. between / to / define / in / computer / transitions / technology / are / enerations / hard /.
4. is / very / technology / becoming / widespread / network /.
5. a layer / is / on / a thin / of a / silicon / fabricated / microprocessor / surface /.
6. for / scientists / are / possible / looking / some / alternatives /.
7. to serve / working / are / together / as / computer / atoms / memory /.

6. **Supply the preposition if one is missing:**

1. A new type of CPU was introduced .... the market.
2. Disc caches are designed to compensate .... the speed discrepancy between the very fast CPU and the much slower disc drives.
3. .... the other hand, Intel instead of using one memory module connected each processor .... its own memory.
4. Transitions between generations .... computer technology is hard to define.
5. Network will continue to improve .... the next several years.
6. A microprocessor is fabricated .... the surface of a thin semiconductor layer.
7. The transistor size decreased .... 6 down .... 0,18 microns.
8. The illustrated above tendency is keeping ..... .
9. The quantity of transistors in a microprocessor is .... line with Moore's law.
10. Some scientists are looking .... possible alternatives.
11. Wearable computers will be built .... people's clothing and jewelry.

7. **There are two words in each item. You must explain how is «a» like «b» and how «a» differs from «b»:**

1. (a) cash, (b) RAM;
2. (a) machine, (b) computer;
3. (a) discrepancy, (b) harmony;

4. (a) interface, (b) adapter;
5. (a) quality, (b) quantity;
6. (a) generation, (b) people;
7. (a) advancement, (b) improvement;
8. (a) transistor, (b) integrated circuit;
9. (a) tendency, (b) intention;
10. (a) CPU, (b) artificial intelligence.

8. *Give the opposites of the following nouns:*

1. rapid; 2. simple; 3. end; 4. gain; 5. change; 6. progress; 7. increase; 8. future; 9. harmony; 10. reality; 11. connection.

9. *Give the synonyms of the following words:*

1. chip; 2. goal; 3. program; 4. single; 5. end; 6. build; 7. obtain; 8. perform; 9. wide; 10. become; 11. clear.

10. *What verbs precede these words?*

1. data; 2. memory; 3. program; 4. market; 5. processor; 6. technology; 7. goal; 8. quality; 9. quantity; 10. speed; 11. size.

11. *Supply the articles where necessary and explain your choice:*

1. .... scale of integration in .... semiconductors continued at .... incredible pace.
2. .... Disc Caches are designed to compensate for .... speed discrepancy between .... very fast CPU and .... much slower disc drives.
3. .... largest computer had 128 processors.
4. .... term «vector» has .... two common meanings.
5. On .... other hand, Intel connected each processor to its own memory.
6. .... transitions between .... generations in .... computer technology is hard to define.
7. This development has sparked .... interest in heterogeneous computing.
8. .... microprocessor is fabricated on .... surface of .... thin silicon layer.
9. Such .... electronic elements are usually called .... chips.

10. .... number of transistors and .... speed of performance in this period were steadily increasing with .... decreasing of transistor size.

12. *Translate into English:*

1. К концу этого периода на рынке появился третий тип процессоров.
2. Одним из наиболее существенных изменений в шестом поколении компьютеров является взрывной рост компьютерных сетей.
3. Сетевая технология находит все более широкое применение в образовании.
4. Быстро изменяющаяся ситуация в развитии компьютерной техники связана с непрерывным усовершенствованием (улучшением) микропроцессоров.
5. Инженеры стремятся к созданию многофункциональных микропроцессоров с большой производительностью.
6. Это обстоятельство вынуждает их увеличивать число транзисторов и, следовательно, уменьшать их размеры.
7. Вопрос, касающийся даже ближайшего будущего компьютеров, еще не исчерпан.
8. Некоторые ученые ищут возможные альтернативы, такие как ДНК- или квантовые компьютеры.
9. ДНК-компьютеры будут иметь много преимуществ по сравнению с современными компьютерами.
10. Они будут намного меньше и будут хранить значительно больше информации.

13. *Are you up to giving a right explanation? Look for a statement in this book or put your own idea in an oral frame and use it.*

Confusing adverb QUITE. Don't neglect!

This is a very wide spread but confusing adverb because it has several different meanings:

1. The first rather puzzling one in a colloquial English is expression of <u>agreement</u>, e.g.:

A: You should have done this work.

B: Quite.

In this case instead of «quite» you could use, for example, «indeed».

2. Used with a noun preceded by the indefinite article this adverb traditionally meant «completely» or «entirely»:

> «You are a humorist. ...Quite a humorist».
>
> J. Austen

Informal constructions of such type often imply emphasis or irony:

> «Well now, that's quite something. Thank you».
>
> N. Blake

> «It had been quite a week and I wanted a day of relaxation».
>
> R. Crossman

3. When «quite» is used with a word or phrase which can express the idea of completeness (all right, certain, empty, full, ready, sure, determined, wrong, excellent, different, enough, impossible etc) it means «completely», «totally»:

   - It would be quite impossible for someone to know all the computer programs.
   - You are quite right.

4. The above rule is not set in stone. There are many examples that do not clearly accord with it. In the written language the context will help to understand the meaning of «quite». In the spoken language the intonation will do that:

   Quite 'good _(week, lowing tone «quite», strong, rising tone «good») means «very little less than good». In this case «quite» has almost the same meaning as «fairly»._

   'Quite 'good _(equal stress) means «moderately good»._

   'Quite good _(strong, rising tone «quite», week, lowing tone «good») means «much less than good»._

   When «quite» is used with such adjectives or adverbs the less «quite» is stressed the stronger the following adjective (adverb) becomes and vice versa. Hence, you must listen to your partner very attentively!

Now, two examples of imaginary conversations:

a   Prof. hands you in your test and says, «This time you are 'quite good». You take gratefully your test and answer, «Oh, professor, thank you, I'm lucky to hear it»!

b   You meet your girlfriend. «Hi, Jane, haven't seen you for ages! How are you?» «Hi, Tom, 'quite well, thanks» says Jane. «That's fine!» answer you happily.

Analyze these examples. Are your answers right? If you think they are right, explain why, if not, give the proper versions.

5.   In constructions like

don't or can't + quite + infinitive
«quite» is normally a «downtoner»:

Many people don't quite know what to do when somebody faints. I can't quite understand.

6.   Almost every student knows that «a few» means a small number, but «quite» placed before «a few» increases the number considerably and means «quite a lot».

The difficulties lying behind the correct use of QUITE are plain to see, but, paradoxically, most educated people seem to have no particular problem in using or understanding the word in its various constructions and meanings.

3. Vocabulary training

1.   *Identification of words*

   Match the words in the left-hand column with their explanations in the right-hand column, e.g. 1-7.

1. apparent	1. make known to other people
2. contemporary	2. impossible to believe
3. cram	3. distributed over a wide area
4. discrepancy	4. lasting only for a limited time
5. estimation	5. a difference or disagreement between two things

6. expand	6. stop or hinder, make impossible
7. exploit	7. easily seen, evident
8. incredible	8. make good use of
9. introduce	9. very great or strong, immense
10. permanent	10. grow wider or bigger
11. prevent	11. lasting indefinitely
12. temporary	12. fill full, stuff, force into a space
13. tremendous	13. judgment of thing's approximate value
14. widespread	14. modern

2. *Useful expressions*

Try to understand and translate the following expressions, using the explanation of the words. Then invent sentences using these expressions.

1. Plummeting costs; plummet – weight of lead hung on a line, for taking depths at sea.
2. To spark an interest in; spark – a small red-hot part thrown off from something burning, fiery particle.
3. Speaking of profound; profound – showing great knowledge or understanding.
4. Is the game worth the candle? (Proverb) Worth – value, price; candle – a stick of wax enclosing a wick, which is burnt to give light.
5. The tear-drop sized computer; tear – a drop of liquid from the eye; drop – a small rounded mass of liquid.
6. To have advantages in comparison with; advantage – superiority, gain or benefit.
7. On the other hand.

3. *Reading comprehension*

Read the text, try to understand the topic, look for the logical sequence of the items and put them in the proper order. The first item is in the right position.

1. You turn the computer on and it loads data from ROM and performs a power-on self test (POST) to make sure all the components are functioning properly.

2. When you open an application, it is loaded into RAM. To conserve RAM usage, many applications load only the essential parts of the program initially and then load other pieces as needed.
3. The computer loads the basic input / output system (BIOS) from ROM. The BIOS provides the most basic information about storage devices, boot sequence, Plug and Play (auto device recognition) capability and other items.
4. After an application is loaded, any files that are opened for use in that application are loaded into RAM.
5. The computer loads the OS from the hard drive into the system's RAM. Generally, the critical parts of the OS are maintained in RAM as long as the computer is on. This allows the CPU to have immediate access to the operating system.
6. When you save a file and close the application, the file is written to the specified storage device, and than it and the applications are purged from RAM.

4. Computer terms in use

Match the terms in the left-hand column with their definitions in the right-hand column.

1. adapter	1. a memory subsystem that provides faster access to data by serving as a storage area between RAM and CPU
2. algorithm	2. an information system based on two ore more computers
3. architecture	3. a computer designed to provide various services for an entire network
4. cache	4. specific rules or steps prescribed for solving a problem
5. driver	5. the design of software, hardware or a complete computer system
6. integrated circuit	6. the ability to simultaneously process more than one element of data
7. microchip capacity	7. CPU

8. microprocessor	8. an electronic circuit on a silicon chip
9. network	9. a number of transistors on a chip
10. parallel processing	10. a piece of software that translates requests from one form into another; it lets a PC talk to peripherals
11. path	11. a device that makes it possible to connect a specific peripheral unit device (e.g. monitor) to a computer
12. plug and play	12. the location of a file or directory, e.g. C: \ Windows \ System
13. server	13. an industry standard that allows computer peripherals to be automatically configured by the OS

B. Find out Russian equivalents of the computer terms given below.

If it is beyond your grasp, give at least Russian explanation.

Disk drive   It is a machine that reads data from and writes data onto a disk. A disk drive rotates the disk very fast. It has one or more heads that read and write data. There are different types of disk drives for different types of discs. A hard disk drive (HDD) reads and writes hard disks, and a floppy drive (FDD) reads and writes floppy disks.

Disk cashing   It is a method to improve the performance of the file system. A section of memory is used as a temporary holding place for frequently accessed file data.

Mass storage   It refers to various techniques and devices for storing large amount of data. Mass storage devices retain data even when the computer is turned off. Usually refers to a hard disk, although it could refer to a floppy disk, CD-ROM disk or DVD disk.

Keyboard	A keyboard on a computer is almost identical to a keyboard on a typewriter. Computer keyboards will typically have extra keys, however. Some of these keys are meant to be used in conjunction with other keys just like shift on a regular typewriter. Other keys (Insert, Delete, Home, End, function keys etc) are meant to be used independently and often perform editing tasks. Keyboards on different platforms will often look slightly different and have somewhat different collections of keys. Smaller keyboards with only math-related keys are typically called *Keypads*.
Function keys	On a computer keyboard, the keys that start with an «F» and are usually (but not always) found on the top row. They are meant to perform user-defined tasks.

4. Vocabulary peculiarities

Read and translate the text.

The ball is rolling

Next evening. The Smiths are in the sitting room. Tom's father, John, is sipping coffee and reading a paper. Tom's mother, Jane, is watching a musical on TV. Tom is anxious, he is waiting for Jack. At 9 pm the phone is ringing.

Tom: Tom speaking.

Jack: Hi, how are things?

Tom: Hi, nothing new. <u>Drop in</u>. Daddy is waiting for you. He is eager to discuss the matter over with you.

Jack: Well, it'll take me about 20 minutes <u>to come round</u>. I hope I'll help your Dad to make a right choice. But don't <u>let me down</u>. ... Not a word about computer games. At least, try to pretend you are not interested in. <u>If</u> <u>it comes to that</u>, <u>put on an air of indifference</u>. Other-

wise your Dad will <u>fly off the handle</u> and our business won't <u>pan out</u> well. As a matter of fact, I guess that from now on you'll be under his observation. So, in the beginning you must do without all this computer games.

Tom: Take it easy. I <u>gave Daddy my personal word</u> and am not going <u>to get out of</u> my promise.

Jack: That's OK. In this case your Dad will <u>fall in with</u> our plans, ... but <u>hold on</u> for a moment. I' v got very useful information for him. Here it is. I'll <u>bring it round</u>. Bye.

Tom: Bye, Jack, we're waiting for you.

20 minutes later. The doorbell is ringing.

Father: The bell is ringing. Answer it, Tom. If it's Jack <u>show him in</u>.

Tom: Oh, man, come in. We're waiting for you.

Jack: How do you do.

Father: How do you do, Jack.

Mother: Glad to see you, Jack. Won't you sit down?

Jack: Thanks, Mrs. Smith.

Mother: It's nice of you <u>to come over</u>. Do you <u>care for</u> a cup of coffee or tea? Maybe some snack?

Jack: No, thanks Mrs. Smith. I prefer tea, please.

Mother   (pouring tea in a cup): Here you are, Jack. Now do take some sugar and cakes.

Jack: Thank you, Mrs. Smith.

Mother: You're welcome, Jack.

Father: Are you really a first-class hacker, Jack? Tom told me you <u>know computers from A to Z</u>.

Jack: I wouldn't say so. Tom is exaggerating. But what can I do for you, Mr. Smith? I'm glad to be at your service.

Father: You see, I'm going to buy ... Well, the problem is I need a modern computer. Maybe it would be possible to upgrade our old box. Can you <u>help me out of trouble</u>?

Jack: With great pleasure, Mr. Smith but I think the game isn't worth the candle'. Tom told me about your multimedia problem. I thought it over and see no way out than to buy a new computer. It would be much better than to upgrade your old box. Besides, it'll save you much trouble in future. By the way, I've found an article concerning the basics of buying a personal computer system. It might be of some interest to you; it's quick-reading and time saving summary.

Father: Oh, thanks so much. You know, of the thousands of books published annually, only a handful are really worth reading. No doubt, this one will come in handy. I'll go through it from cover to cover to make up for my ignorance. Then I'll ask you for some help in purchasing the machine.

Jack: You're not the least bit worried about your new computer. You can rely on me and we will fix it up.

Needless to say, in several days a «supercomputer» was bought and all the necessary programs were installed. Jack did his best. As to Tom, he went ape and shouted out, «This is it!» His father was also satisfied with a new computer.

Useful vocabulary

A. *Phrasal verbs*

bring round	bring to your home
care for	like
come over	visit
come round	come to my house
drop in	pay a short visit (unannounced)
fall in with	accept someone plans and agree to co-operate

' The origin of this expression refers to playing cards by candlelight; if the money being gambled was less than the cost of the candles, it was not worth playing the game.

fix up	arrange
get out of	free oneself from an obligation
go through	examine carefully
hold on	wait (on telephone)
let down	disappoint someone by failing to act well as expected
make up for	compensate for
pan out	turn out, develop
show in	conduct

B. Expressions and idioms

come in handy	be useful
do one's best	try as hard as one can
do without smth	live in spite of lacking smth
do you care for	would you like
fly off the handle	be excessively angry
from now on	from this moment and further
go ape	become highly excited or behave in a crazy way
help out of trouble	help someone to get out of difficulty
if it comes to that	used when you are going to add smth to what has just been said
put on the air of in-difference	pretend that you are absolutely not interested in smth
save much trouble	rescue from difficulties
take it easy	don't worry
the ball is rolling	continue an activity
the game isn't worth the candle	smth is not worth the effort needed
this is it	have possession of an object, beyond which more of the same is unnecessary
to give personal word	promise
to know smth from A to Z	know smth perfectly well

Verb study practice

1. *In the story about two friends Tom and Jack you came across new phrasal verbs, e.g.: butter up, give in, run into, find out, help over, back up, be in for, be up to, come round, come true, cut down.*

   Now replace the words in italics by one of the phrasal verbs given above.

   1. Tom's father *supported* him to buy a computer.
   2. I'll give him this book if he *visits me*.
   3. He tried to gain the boss' favor by *flattering*.
   4. Tom *met accidentally* his friend Jack in the street.
   5. If you think this problem will be easy to solve you *are about to encounter* a shock.
   6. I hope your dream of modern computer will *end by being real*.
   7. He *is able to reduce* your expenses.
   8. I kept inviting my friend to stay for dinner and finally he *ceased to resist*.
   9. Thank you for *helping me to deal with* this difficult matter.
   10. He *discovered* a lot of interesting information in the last number of «Upgrade».

2. *Fill the gaps using against, in, round, up, along, over, into, down, true, out, on, by, to, through, off, at*

   1. Tom is getting .... well at the computer classes. He is studying hard.
   2. The TV picture began to jump and it went .... like that for a long time, so we turned it ....
   3. After Sam proved that he could work on computer, his father gave .... To him and bought him one.
   4. He wrote to find .... about the job in a company.
   5. It was a dream come .... when he became a real hacker.
   6. John had to work hard to keep .... with other students.
   7. Calm .... and don't worry about your exam.
   8. On his way downtown Jack looked .... on his old friend Tom.
   9. Mary refused to go to the party and kept .... studying.

10. I ran .... Jane yesterday in the street.
11. Ann talked her plan .... with her father before she bought a computer.
12. He took .... working on computer in his spare time.
13. The first year was tough, but business looked .... after that.
14. Be sure to turn .... the computer.
15. I'm going to upgrade my computer. Stand .....
16. There are good machines on sale. Jump .... the chance!
17. Every time a new CPU is launched its price is skyrocketing; I'm waiting till they will cut it .....
18. Sam wanted to sell his car, but Mary was .... it.
19. Show the visitor ..... Will you please?
20. I will tell him what to do when he comes .....
21. Why don't you come .... and see us one evening?
22. We must go .... this instructions together. I don't understand them.

Expression study practice

Choose one of the given below expressions and fill the gap.

Then make up your own sentences using these expressions: the game is (not) worth the candle; do ones best; to know smth from A to Z; take it easy to help out of trouble; drop in; shell out; be in for; come true; give in.

1. This program is not very good. If you install it you are .... a lot of trouble.
2. Let your dreams about a new computer .....
3. You don't need to .... much money for this CPU. It is not much better than yours.
4. Tom .... trying to find out what was wrong with his computer. Then he .... and called a professional.
5. Don't worry about this bug, ...; I'll come and .....
6. Sam can upgrade computer without any efforts. He ....!
7. Your box is quite good. I don't think you need to upgrade it; .....
8. May I .... to consult you?

Let's have a chat about your computer experience

What was in your opinion:

- The most interesting event? Why?
- The most dangerous event? Why?
- The most nice event? Why?

Please, give full answer. Your interesting story is also acceptable.

5. Some useful information

The basics of buying a personal computer system

(This article was thoroughly studied by Tom's father)

Introduction

There are many different kinds of computers to choose from and finding the one that is right for you and fits your budget can be difficult. The purpose of this text is to describe the parts of the computer and the benefits and pitfalls of these parts so that you can make an educated decision on your computer purchase.

PC versus Macintosh

The two major types of computer systems are PC's and Macintosh. There are advantages and disadvantages of both. The Macintosh is generally more user friendly than the PC and many schools are using the Macintosh. Macintosh is also popular in the advertising and graphic arts market. Many advertising agencies and graphic artists use the Macintosh because of the easy operating system and graphics software available for Macintosh.

The PC is more widely used in the home and business, and there is much more software available for the PC compared to the Macintosh.

Where to buy your PC

Computers are available from the variety of sources. In the USA the first place you would think to look are the big retailers, such as Best Buy, Circuit City, CompUSA, or others. The big retailers offer a variety of different computer choices and can be easy to shop at. You pick the computer you want, pay for it and walk out the door. Another reason to shop at a big retailer is convenience, especially if you have a problem and you need to return or exchange your computer. You can find good deals and sales at the big retailers.

Another way to buy a computer is through a mail or order company or directly from the manufacturer. With a mail order company you may have to wait a little longer to get your computer, but this is not always bad. When you order a computer you can get the exact computer that you are looking for. You can make up your order so that you get all the things you need in the computer. One down side to ordering a computer through the mail is if you have a problem, you may have to send it back, and wait for a replacement.

Two things to check for with any purchase, that many people overlook are:

1. Does the manufacturer have a toll free technical support phone number?
2. Does the company charge a fee for using the technical support?

Components of a computer

A computer is a complex machine that contains of many different components. When buying a computer, you should know what these parts are and what they do. This will help you to know what to look for in a quality computer (Fig. 1).

CPU

The CPU, or central processing unit, is the brain of the computer. The CPU controls all the action that occurs inside the computer. In detail, the processor consists of the following items:

- The *control unit (CU)* which coordinates the processing steps.

- The *arithmetic / logic unit (ALU)* which performs calculations and make decisions. The *registers* which represents a small but very fast auxiliary memory within the processor.
- The *cache* which is a fast buffer memory between the processor and the actual main memory.

Fig. 1 Basic Computer Architecture
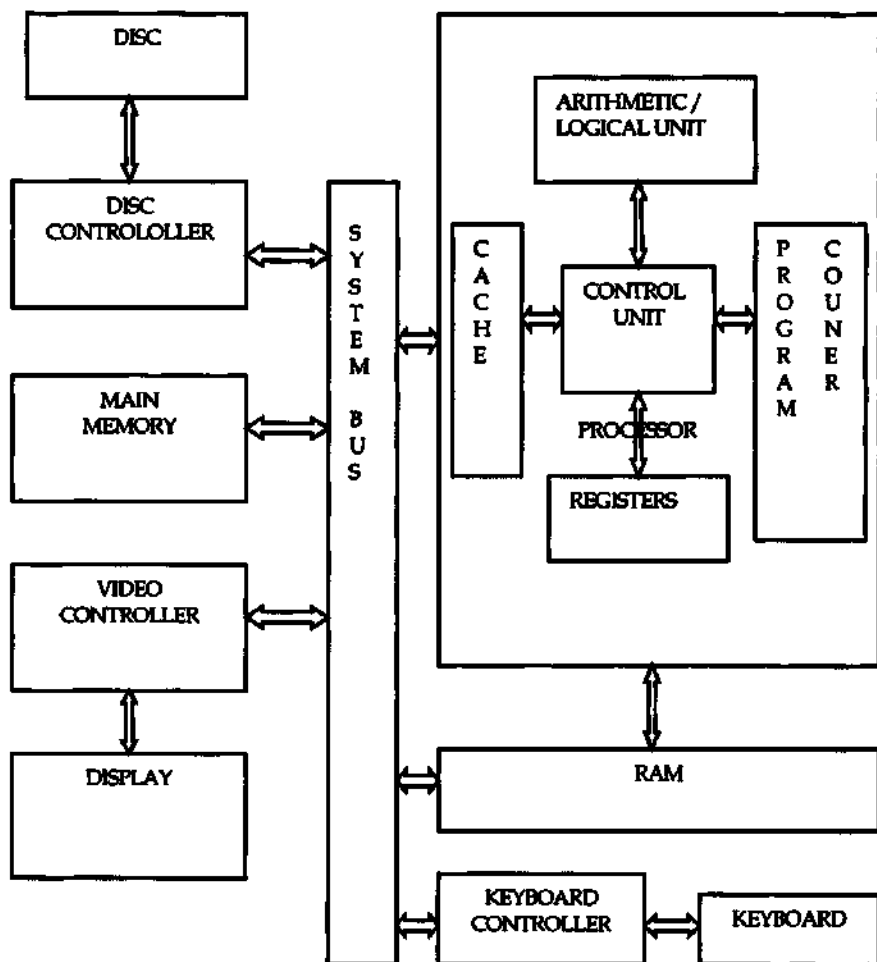
The operation of processor is driven by high-frequency system clock. In a 933 MHz (MHz = million Hertz) Pentium III processor, the clock beats 933 million times per second and the processor can perform mostly 933 million instruction per second. Different instructions take a different amount of clock cycles. Some instructions may be performed in one cycle, others in many more cycles.

Moor's law

For thirty years, the speed of processor clocks have approximately doubled every 18 month and we can expect this trend to continue for the next decade until physical limits are reached.

Processors have registers. Each of them may hold a computer word. The registers operate at the speed of the processor. It means that in each clock cycle a register may be read or written. However the processor operates much faster than the main memory. In order to prevent the processor being slowed down by reading or writing from the main memory, the cache is inserted between main memory and processor. Whenever the processor issues a request for a memory location, the cache loads a sequence of words containing this location from the main memory and holds it locally for further use. The cache operates at processor speed. When the cache becomes full, it writes words (line), which have not been used for a long time back into main memory.

Cache and main memory are coupled by the system bus, a communication unit which combines multiple system devices.

The program executed by the processor is stored in the main memory. It consists of a sequence of machine instructions each of which is encoded in a computer word.

The program counter is a special processor register, which holds the address of the next instruction to be executed.

The operation of the processor is a continuous cycle of the following steps coordinated by the control unit:

- fetch the instruction referenced by the program counter from the main memory;

- decode the instruction and increment the program counter to reference the next instruction in sequence;
- execute the instruction.

This operation principle is called the von Neumann architecture after John von Neumann who invented the concept in 1945.

CPUs come in different types and speeds. Intel, Cyrix, and AMD are the three main manufacturers of CPUs. Intel is the market leader, and will probably stay that way for quite some time. The Cyrix and AMD offerings are usually comparable to the latest Intel CPUs, however, performance is usually slightly below that of Intel. It is recommended buying one step behind the latest technology. It is here that you find the best value for your money. The newest technology is always the most expensive, and when a new chip comes out, the previous model always drops in price. It's advisable not to buy anything more than two steps behind the latest technology. Technology changes quickly, and you don't want to buy a computer that will become outdated too quickly.

CPU types

It is absolutely beyond one's reach to give specific information regarding CPUs because this information has a tendency to get outdated within a few months. It means that if we give you an appropriate advice now, when making this book, it might have been «old fashioned» by the time the book will be issued. Hence, the general advice given above is more timeless.

Processor speed is indicated after the brand of the chip. For example a Pentium II 400 runs at 400 MHz. MHz stands for Megahertz, which put simply, is how fast the computer runs. The higher the MHz, the faster the computer. There are many speeds available: Pentium III, Pentium IV and so on.

New, faster processors are always in development, and as faster processors become available many of the slower processors are phased out.

Which processor is best

A basic rule of thumb is to buy as good processor as you can afford. If you can afford a CPU with the newest technology, then by all means, buy that. The processor is the hardest and most expensive part of a computer to upgrade. Most of the other components can be easily upgraded. This means that the most important decision in buying a computer is choosing the processor. Of course, you may not need the fastest processor available. If the only thing you are using your computer for is typing school papers, then even the simplest processor will do just fine. If you are going to use it for playing multimedia games, designing graphics, or running multiple applications, then you should get at least Pentium IV. As stated previously, the best value is usually one level behind the newest technology.

RAM (Memory)

RAM, Random Access Memory, is commonly referred to as memory. Memory is measured in Megabytes, abbreviated MB. This is the second most important decision for your PC purchase. RAM is used by the computer as a temporary storage area for the things it is using. Any data that you are using or inputting is temporarily stored in the RAM, where it can be manipulated and used by the computer. The more RAM you have, the faster the computer can perform tasks. RAM is easily upgradeable.

Bus speed

It's worth to remember the faster the bus, the faster the CPU can communicate with other parts of the computer.

Cache

Cache is another type of memory, which is similar to RAM. Cache is used by the computer to move data between the RAM and the CPU faster. Hence, the faster the cache, the better.

Motherboard

The motherboard is the circuit board which everything in the computer plugs into. The CPU, RAM chips, and cache all plug into the motherboard. Three main considerations in a mother board are – bus type, number of expansion slots, and number of RAM slots. Expansion slots are used for holding cards, such as video cards or sound cards. RAM slots are where the RAM chips plug into. With both types of slots more is better. The more slots you have, the more room you have for expansion.

Case

One of the smaller and easier choices in your computer system is the type of case to get. The two types of cases available are the tower and the desktop. A desktop case fits nicely underneath the monitor. The tower case can be put on the floor to clear up some room on your desk. Tower cases usually have an extra disk drive bay, but unless you are planning on adding several more drives, this is not a big concern. Basically, it is just a matter of preference.

Disc drives

Hard drive

The hard drive is where the most of programs are stored. The hard drive is inside the computer. Hard drives come in many different sizes, up to 60 gigabytes and more. The more programs you have, the more disc space you need. It's especially essential for multimedia programs. Once again, more is better.

Floppy disc drive

It's a standard device and every computer comes with a floppy disc drive. They are the usual way of putting information on to the hard drive. They also allow you to save information on a disc, which is an easy way to transport files and data between different computers. A 3.5″ disc can hold 1.44 megabytes of data.

CD ROM drive

Most computers now come standard with a CD ROM drive. All the programs come on CD because they can hold over

500 megabytes of data on a single disk. A CD ROM drive reads data from a CD. The CD ROM drives come in several different speeds. If the speed is low the video and sound are more likely to be a bit jumpy. The faster a CD ROM can read a CD the smoother the video and sound becomes. Hence, faster is better. CD writers are also available now. CD writers allow you to write information to a CD. Once written, these CDs can be read by any CD ROM drive.

Another very important product to note is a CD rewritable (CD RW). It is a CD drive that can read and write to a CD. It can be used as a floppy disc but its memory is much more larger, up to 700 megabytes.

DVD drive

The latest in mass storage is the DVD drive. DVD stands for digital video disk. A dual layer, dual sided version of this disk can hold up to 17 gigabytes. Since this technology is relatively new these devices are quite expensive. Nevertheless DVD will soon replace the CD.

There are several types of high capacity devices which are not very wide spread, e.g.:

Tape Backup drive is mainly used for backing up all of the files on your hard drive. They can hold a lot of information, but they are not much good for anything except backing up files. The reason for this is that it is slow to access data from a tape. It is very useful if you have important files that need to be saved in case your computer crashes. Most computer systems do not come with tape drives because most people don't have a large amount of data that needs to be backed up.

Zip Drive is removable storage similar to a floppy drive. A Zip disk can hold about 100 and much more megabytes of data. It is faster than the ordinary floppy drive but slower than a hard drive. This is a good alternative to the tape backup if you do not have a lot of files to back up. A zip disk can hold an entire program, yet it is not much bigger than a floppy disk.

Input devices

Input devices are parts of the computer that let you input information and data into the computer. The keyboard, mouse, joys-

tick, scanner, and camera are examples of input devices. Disc drives and modem can also be used as input devices.

Keyboard

Using the keyboard is the primary way of inputting data into many of computer programs. Keyboards are usually described by the number of keys they have. Picking a keyboard is just a matter of preference.

Mouse

A mouse can have two or three buttons. A two-button mouse is usually a standard. It can accomplish any task. It's possible to get three-button mouse. The software that comes with it allows to program the middle button to do certain tasks e.g. to use it as a double click. Pushing the middle button once is more convenient than to double click another button.

Alternative to this mouse is a mouse without ball and cable, the optical radio wireless mouse. As it has no ball there is no need to clean it. The absence of mechanical parts means longer life span of the mouse. It has 5 programmable buttons; it makes navigation on the Internet easier. Of course, it's up to you, which mouse to buy.

Joystick

The joystick is essential for all the computer games.

Scanner is useful for copying written page or picture directly into the computer. Scanner is more useful for business. It comes in black and white or color. There are three types of scanners: hand scanners, page scanners and flatbed scanners. A hand scanner is dragged across the page being scanned. A page scanner feeds paper through it similar to a printer, but instead of printing, it scans in whatever is on the paper. A flatbed scanner looks and works like a copy machine. It is more common and wide spread.

Output devices

Output devices are the parts of computer that let you see what you are doing. The main types of output devices are monitor, video card, printer, sound card and modem.

Monitor

Several sizes of monitor are available; more common are 17-19 inch monitors. Which size to choose depends on your own preference. Be sure your monitor displays not less than 256 colors. One other thing to look for is the dot pitch. Basically the dot pitch describes how sharp the picture will be. The lower the number of the dot pitch, the sharper the image will be.

Liquid crystal displays (LCD) of different size are also available but they are more expensive.

Video card is the part of the computer that sends the images to the monitor. Video cards usually contain their own memory chips. This memory helps the computer to load images fast. Hence, the more memory contains video card the better.

Printer allows to make hard copies of documents. There are basically three different kinds of printers available: dot matrix, ink jet or bubble jet, and laser printer.

The dot matrix printer consists of a head with a row of pins that strikes the ribbon as it moves across the page. A dot matrix printer cannot give you the same high quality as that of an ink jet or a laser printer, but they are still popular because of their low cost.

Ink jet printers are the next step up. They squirt little droplets of ink onto the paper. The ink dries almost instantly and the quality is almost as good as a laser printer. Ink jet printers are the most feasible for printing in color.

Laser printers produce the best quality print. These printers are the most expensive, but since they offer very good quality they are usually the top choice of business.

Sound card allows computer to reproduce music, sound, and voice. This is a definite necessity if you work on multimedia subjects. If you are using your computer for business, then you may not need a sound card.

Modem is used to send faxes or get on the Internet. It also allows the computer to communicate with other computers through

the telephone lines. Modems are available in different speeds. The more speed the better.

With all the money you invest into your computer system, it would be destroyed by a power spike. It is a UPS that will help you. UPS stands for uninterrupted power supply. It protects against surges and power outages. It contains a battery backup, which will keep your computer running for a short time after the power goes out. If the power goes off you will have enough time to save the file and turn off the computer before the battery runs out.

1

No doubt, you read this text attentively and remember every detail.

If so, be ready to speak about the main points of it.

2

Be so kind as to give full answer:

1. Are you satisfied with your computer?
2. Every day there's something new about computers; hence, modern computer today is a «back number» tomorrow. Are you keeping up with the progress?
3. If you are going to upgrade your computer what would you do and how would you do it?
4. Is it possible to compare computer with human brain taking into account its chess fights against the best world masters?
5. Have you ever had any difficulties when working on your computer?
6. Have you achieved, according to your opinion, any outstanding results?
7. Suppose you are a teacher. Suppose your course is «Computer as it is». Make up a plan of this course.
8. Suppose you are a head of a company and you want to buy computers for yourself, your secretary, and your accountant. You, of course, do not like to fling your money about. What kind of computers are you going to purchase?
9. Make up a plan of your dazzling report «Computers, Mankind, and Future».
10. In this unit you came across the Moor's law:

For thirty years, the speed of processor clocks have approximately doubled every 18 month and we can expect this trend to continue for the next decade until physical limits are reached.

How do you understand it, especially the underlined phrase?

6. A bit of reading practice

Computer and spoken word

Current computers insist that you do things their way. Using a computer device requires that you accommodate yourself to how the computer works and constantly monitor the input process. This is quite unnatural and, for most people and applications, requires too much effort.

Useful voice technology is available now, if you are willing to compromise on certain capabilities. When considering products, however, you should remember that almost every desirable capability (e.g., speaker independence, continuous speech, and rejection) also degrades the accuracy of the system. You might want to think twice about whether your application needs all those fancy capabilities.

Most major computer manufacturers recognize that accessible voice input is the next frontier in interface technology.

The trend in voice interfacing is toward systems that possess more and more of the characteristics of a human listener. These systems will let you realize the full potential of voice-based communication with your computer.

Voice technology is used in microcomputers for purpose other than speech recognition or understanding. Its most prevalent use is for vice annotations and voice mail, as well as for synthesized speech output.

Some systems let you record a spoken message in digitized form on the machine. You can then send a message as E-mail to someone else who has a workstation with playback capability. In that respect, voice mail can function much like an answering machine.

Another use of voice-interface technology currently gaining popularity is voice annotation for documents. This can take the form of spoken comment inserted into the document at text locations you specify.

Voice interfaces are not limited to character-based computers. One interesting application area involves the integration of voice technology with telephones, visual interfaces, fax machines, and voice mail.

Mobile phones can also contain voice-dialing capabilities (such product, for example, is sold by Motorola). In general, these systems are not as sophisticated as some of the workstation-based technologies, but they are perfectly adequate. They let you store a spoken list of names in the phone, each with associated telephone number. Then, using voice commands, the phone will dial the appropriate number based on the spoken name.

Another successful application of voice interfacing is in controlling robotic systems. In hospitals, voice commands can control the position of patient beds.

In laboratories, voice commands can control the magnification and position of large microscopes, scanners, or other optical equipment. In such «eyes busy» situations, voice technology provides a significant edge.

In typical «eyes busy» or «hand busy» situations, voice technology can successfully save labor.

Another area where small time savings translate into large dollar amounts is in the medical field. Several intensive efforts are under way to use voice interfaces to aid doctors and nurses. In this case medical reporting follows a highly standardized format, in which a limited vocabulary is sufficient to account for almost all situations.

It's almost impossible to exhaust the question about all the possibilities of voice technology applications. Maybe you'll help us. Stir up your imagination!

1. Read and try to understand the given above text.
2. What do you think of voice technology? Is the game worth the candle?
3. Do you know any examples of voice technology applications?

Thanks so much for your hard work! Now loose up!

7. Relax a bit

Scrapheap

A

If you make people think they're thinking, they'll love you; but if you really make them think they'll hate you.

Let's just be friends and make no special effort to ever see each other again.

He was so narrow-minded he could see through a keyhole with both eyes.

Often statistics is used as a drunken man uses lamppost for support rather than illumination.

Help a man when he is in trouble and he will remember you when he is in trouble again.

Nothing is impossible for the man who doesn't have to do it himself.
A man with a watch knows what time it is. A man with two watches is never sure.

People will believe anything if you whisper it.

I don't jog. I don't wont to die being healthy.

If you can keep your head when all about you are losing theirs, maybe you just don't understand the situation.

Blessed are the young, for they shall inherit the national debt.

People with narrow minds usually have broad tongues.

He who laughs last is probably your boss.

If you have nothing to do, don't do it here!

B
Life experience

Experience is a school where a man learns what a big fool he has been.
Life is one long process of getting tired.

Professionalism

– What do you do for your living?
– Just nothing.
– You are a professional!

Family

A wife came to the police department. «I'm worried», she said, «my husband disappeared and I can't find him». The policeman gave her a pen and a sheet of paper and asked her to put down everything about her hubby. She finished and gave him the description. The policeman read it aloud:

«My husband is a short man, bold, small eyes and short-sighted. He wears thick glasses. He bets all his money at races. He snores like a hell and he squints». The policeman finished to read and asked, «Is it all?» Looking down the woman answered, «I've changed my mind, sir; on second thought, just skip the thing and don't bother looking for him».

Cafe

Waiter: Tea or coffee, sir?
Customer: Coffee without cream.
Waiter: You'll have to drink it without milk, sir, since we are out of cream today.

Confusion

At a party when one of the women was singing one of the guests turns to his neighbour.
–Gee, what a terrible voice! Do you know who is she?

 −Yes, she is my wife.
 −I'm sorry, sir. She has a wonderful voice. That's that awfully bad music that spoils everything. Do you know who wrote it?
 −I did.

Sincerity

Wife: Do you remember the Smiths that we met in San Francisco and invited them to come and stay with us for a couple of weeks?
Husband: Yeah.
Wife: These idiots are actually coming!

Unity

Husband: No dinner?! I'm going to a restaurant!
Wife: Be so kind as to wait a minute.
Husband: Will it be ready then?
Wife: Of course not, but I'll be ready to go with you.

Hospitality

 – I do hope my visit doesn't bother your family.
 – Oh, no. However depressed they are when you come, they're always happy when you go.

Trade

 – How much is this computer?
 – $ 1000, sir.
 – In the next door store it costs $ 750!
 – Why don't you buy it there?
 – They just don't have any left.
 – Believe me, sir, when I don't have any left, I'll sell it for $ 100.

Mutual understanding

Tom: My wife absolutely does not understand me; does yours?
Sam: I don't think so; I've never heard mention your name.

Phone call

There was a long line at the public phone. The man who was making a phone call held the receiver, but his lips were not moving. One of the impatient persons asked loudly, «Is he speaking to anybody?!» «Yes», was the answer, «to his wife».

Advice is like castor oil, easy enough to give but dreadfully uneasy to take.

Alimony is a system by which, when two people make a mistake, one of them continuous to pay for it.

For every human problem, there is a neat, simple solution; and it is always wrong.

What's worth doing is worth doing for money.

Three can keep a secret if two are dead.

Sex is hereditary because if your parents never had it, chances you are will not either.

It works better if you plug it in!

UNIT 5

1. Information for study

I. Pioneers

John V. Atanasoff was an early pioneer of automatic computing; he formulated the idea of using the binary number system to simplify the construction of an electronic calculator. In 1939, being Iowa State physics professor, he was looking for someone to help him design and build a computing machine. His colleague recommended him a graduating electrical engineering student, Clifford Berry.

«Berry is a brilliant student who has a tremendous grasp of mechanical construction, and is well-grounded in electronics», the electrical engineering professor said of the young man who planned to begin a graduate school that fall. After a few meetings with the new graduate student, Atanasoff came to a conclusion that «he had vision and inventive skills».

In the fall of 1939 Atanasoff and Berry began building the prototype of the first computing machine by using and vacuum tubes, binary numbers, capacitors in a rotating drum for memory elements, and logic system for computing. A working model by the end of the year demonstrated the validity of their concepts and won them a grant of $850 to build a full-scale computer.

Berry and Atanasoff worked together in their laboratory over the next two years. The result was the first electronic digital computer.

II. Supercomputer

The Free On-line Dictionary of Computing has the following definition:

A broad term for one of the fastest computers currently available. Such computers are typically used for number crunching including scientific simulations, (animated) graphics, analyses of geological data, physics, chemistry, electronic design, nuclear energy research and meteorology.

The speed of most computers measured by how many millions of instructions per second (*MIPS*) they could execute. Since supercomputers have always been number-crunchers, their speed is measured in *floating point operations per second (FLOPS)*, in units of megaflops (MFLOPS), gigaflops (GFLOPS), and teraflops (TFLOPS) which refer to millions, billions, and trillions of FLOPS, respectively.

Much of the early history of the supercomputer is the history of the father of the supercomputer, Seymour Cray (1925-1996), and the various companies he founded; in particular, Cray Research, which was the US leader in building the fastest supercomputers for many years. Cray's mission throughout his life was to build the fastest computer in the world; a goal he first realized in developing the first fully transistorized supercomputer, the CDC 1604, in 1958 Control Data Corporation, a company he found in 1957. He went on to design the CDC 6600, which was forty times faster than its predecessor, followed by the CDC 7600 system. These machines would give Control Data the clout to push the mighty IBM out of the scientific field for a time.

Cray left Control Data in 1972 to found Cray Research, then CEO, who had put a new computer on hold. Always a private man, Cray was never interested in company management. He relinquished control of the company after five years and worked out a deal that allowed him to do research and development at a lab away from company headquarters.

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After designing the 100 megaflops CRAY-1 computer in 1976 and the 1-2 gigaflops CRAY-2 computer system in 1985, both of which were the fastest supercomputers in the world he again parted way with his company after top management elected not to go ahead with his new project, the Cray-3.

Founding Cray Computer Corporation in 1989, he again built what would be the fastest supercomputer in the world at around 4-5 gigaflops, the Cray 3, which is based on superfast 1 GHz gallium arsenide processor in comparison with conventional silicon processors, which were, and still are, topping out at 400-500 MHz. He followed it with the Cray 4, also based on gallium arsenide, which is twice as fast.

Various events, including the end of the Cold War, which shrank the size of the supercomputing industry's market; the advent of competition from Japanese companies such as Fujitsu Ltd., Hitachi Ltd., and NEC Corp.; and the rise in popularity of distributed computing based on large numbers of smaller microcomputers working together in a limited way all served to shrink the U.S. supercomputer industry, causing Cray Computer to file for bankruptcy in 1995. Only a few Cray 3, and even fewer Cray 4, systems had been sold. Undaunted, Cray began work on a new computer and started a new company, SRC Computer Labs, to build it. Tragically, he died on October 5th, 1996, at the age of 71, as a result of injuries sustained in an automobile accident.

For many years, Seymour Cray and his companies dominated supercomputing. Eventually, other companies began finally to compete directly. Thinking Machines Corporation, for example, is another company that was famous in the field of supercomputing.

On July 28, 1995, two of Tokyo University researchers broke the 1 teraflops barrier with their 1,692-processor Grape-4, special purpose supercomputer costing less than 2 million US dollars. The Grape-4 and its processors are specialized for performing astrophysical simulations. It was the fastest computer in the world at that time, reaching the peak speed of 1.08 teraflops.

According to a November 11, 1996 announcement by Cray Research, a 2,048-processor CRAY T3E-900 broke the world record for general purpose supercomputer with an incredible 1.8 teraflops peak performance. This system, according to Cray Research is the first supercomputer able to sustain greater than 1 teraflops performance over long periods of time.

According to a December 16, 1996 announcement made by Intel Corporation their «ultra» computer, developed in a partnership with the US Department of Energy, breaks the 1 teraflop barrier. Hence, it is clear that the current state of supercomputing art is teraflop level performance.

There are three primary limits to performance at the supercomputer level: individual processor speed, the overhead involved in making large numbers of processors work together on a single task, and the input / output speed between processors and memory. Input / output speed between the data storage medium and memory is also a problem, but no more than in any kind of computer. Besides that supercomputer has extremely high RAM capacity.

The speed of individual processors is increasing all the time. Its cost in research and development is also increasing, and the reality is that the parameters of silicon based processors are close to their limits. Seymour Cray showed that gallium arsenide technology could help, but it is very difficult to work with. Cray Computer was forced to acquire their own foundry and do this work themselves.

The solution the industry has been turning to is to add larger numbers of processors to their systems, enhancing the speed through parallel processing. However it brings the problem of writing programs that can utilize multiple processors (hundreds and thousands) at once in an efficient manner. Supercomputers were designed and built to work on extremely large jobs that could be handled by no other type of computer systems (the more processors are in a machine the more jobs it can perform).

A press release by Intel indicated that the completed «ultra» computer, also known as ASCI Option Red would incorporate over 9000 Pentium Pro processors and reach speeds of 1.8 teraflops. It costs $55 million. There is a program to develop three supercomputers that will reach speeds of 10, 30 and 100 teraflops.

When Seymour Cray was once asked about the next qualitative step in supercomputing he said, «I think it will be biological computing – using DNA and proteins as the computing elements just as Nature does ... I don't think I will live to see that day ...».

III. Meta PAD

IBM is developing a device that is slightly larger than a typical handheld computer but has the power of a standard laptop. It has 128 MB of RAM, an 800 MHz processor, a 10 GB hard drive and runs Windows XP. It weighs nine ounces (255.15 g).

The device also has a 4-inch LCD (Liquid Crystals Display) and the company is considering to add wireless capabilities.

The company said that it built the device as part of its research into the development of future mobile devices and that it has no plans to sell the device in the immediate future.

«This device is a radical experiment in form factor and is furthering our understanding of how humans can better interact with their information», said lead engineer of the project Ken Ocheltree. «The 'Meta Pad' project is part of our overall strategy in the pervasive space building the technology inside computing devices, and building and managing the infrastructure that will simplify the unthinkable task of connecting billions of devices to billions of things», he added.

The company said it took items such as the power supply, display and I / O (Input-Output) connectors out of the core of the device, making them available as accessories to be used as needed. That enables the device to be used on a mobile basis or as a desktop or laptop computer. Hence, the individual users decide how they want to use their portable device. For example, they could:

- Attach it to a small touch screen and carry it like a handheld personal digital assistant, but with all the power and functionality of a desktop.
- Place it into a cradle, which is attached to a keyboard and display at home, work or in a hotel.
- Place it into a laptop-like shell.
- Place it into a connector in an airplane seat that is linked to a touch screen display.
- Attach it to a wearable harness with a small head-mounted display for use in certain work environments that require hands-free computing.

IBM has also incorporated its advanced speech technologies software to further improve the interface to the Meta PAD.

Another potential application of Meta PAD is in the super dense server space, offering an alternate way to build servers. By plugging many of these small devices into a rack system, you can get a high-performance in a very small form factor, making it easier and more affordable for individuals to have their own personal server.

2. Exercises

1. *Read and translate the texts.*

2. *Check up your understanding. Give full answers:*

1. What are the main trends of computer development?
2. Who were the first pioneers in computer business? What did they do?
3. Why do we need a supercomputer? Is the game worth the candle?
4. What are the three primary limits to performance at the supercomputer level?
5. Can you tell the difference between the latest model of a PC and supercomputer?

6. Why do we need to increase the speed of CPU?
7. Meta PAD, what does it mean?
8. If you were offered Laptop or Meta PAD, what would be your choice? Why?
9. Here is a sequence of different kinds of computers:
10. Meta PAD, Laptop, Desktop, Mainframe, Supercomputer.
11. Can you characterize each item?
12. Why is Meta PAD considered as a future mobile device?
13. Why is the speed of supercomputers incredibly high?

3. *Retell the texts briefly using the following expressions and terms:*

Formulate the idea, look for someone to help, have tremendous grasp of, be well-grounded, come to conclusion, have vision and inventive skills, win a grant, demonstrate the validity of the concepts.

Supercomputer, MIPS, FLOPS, be leader in, found a company, be forty times faster, private man, relinquish control of the company, work out a deal, CRAY-1, CRAY-2, CRAY-3, dominate supercomputing, be based on, shrink the supercomputer industry, file for bankruptcy, break the world record, break the world barrier, the parameters are close to their limits, bring the problem of, parallel processing, perform jobs.

Meta PAD, develop a device, handheld computer, have the power of, wireless capabilities, the immediate future, overall strategy, be used on a mobile basis, touch screen, speech technologies, an alternate way, get high performance in a small form-factor, personal server.

4. *What's missing? If you are in doubt refer to the text.*
Take it into account that in each item the first letter of the missed word is used.

1. The idea of the binary number system was used to s.... the construction of an electronic calculator.
2. The p.... of the first computing machine was built in 1939.
3. They scientists worked in their laboratory o.... two years.

4. You can find this definition in the F... O....– L.... Dictionary.
5. The speed of computers is measured by the number of i.... per second.
6. The history of the s.... is tightly connected with Seymour Cray and the various companies he f.... .
7. To build the fastest computer in the world was the g.... of his life.
8. It was the fastest computer at that time, reaching the p.... speed of more than 1 teraflop.
9. There are p.... limits to performance at the supercomputer level.
10. The next q.... step in supercomputing will be biological computing.
11. IBM developed the device that was s.... lager than a hand-held computer.
12. This device is a r.... experiment in form factor.
13. It is f.... our understanding of how people can i.... with their information.
14. The individual users decide how they want to use their p.... device.

5. *Rearrange the words and get the right sentences:*

1. the young / school / planned / to / man / begin / a graduate /.
2. term / for / supercomputer / the fastest / computers / is / a broad /.
3. shrank / the / events / supercomputer / various / market /.
4. in / as / interested / company / Cray / management/never /.
5. the / computer / n / it / the / fastest / world / was /.
6. increasing / processors / is/the speed / of / all / the time /.
7. the device / plans / in / the company / has / to sell / no / the immediate future /.
8. large / jobs / were / supercomputers / and / built / to / work / designed / on / very /.

6. *Supply the prepositions if one is missing:*

1. This person is well-grounded .... electronics.

2. The speed of computers is measured .... the number of instructions per second.
3. His goal was realized .... building the first supercomputer.
4. Cray was never interested .... company management.
5. The Cray 3 is based .... superfast processor.
6. He began to work .... a new computer and started a new company.
7. Thinking Machines Corporation was famous .... the field of supercomputing.
8. Cray Research broke the world record .... general purpose supercomputer.
9. According .... announcement made .... Intel Corporation their supercomputer broke the 1 teraflop barrier.
10. The solution the industry has been turning .... is enhancing the speed through parallel processing.
11. Supercomputers were built to work .... extremely large jobs that could not be handled .... other types of computer.
12. The company said that they took several items .... the core .... the device.
13. Place the device .... a cradle which is attached .... a keyboard.
14. Attach the device .... a wearable harness with a small head-mounted display and you get hands-free computing.

7. *There are two words in each item. You must explain how is «a» like «b» and how «a» differs from «b»:*

1. (a) supercomputer, (b) PC;
2. (a) prototype, (b) type;
3. (a) grant, (b) investment;
4. (a) laptop, (b) Meta Pad;
5. (a) Cray-1, (b) Cray-3.

8. *Give the opposites of the following words:*

1. reach; 2. include; 3. push; 4. break; 5. use; 6. simplify; 7. new; 8. various; 9. establish; 10. increase; 11. leave; 12. much.

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9. Give the synonyms of the following words:

1. look for; 2. say; 3. partner; 4. rotate; 5. demonstrate; 6. can; 7. execute; 8. way; 9. announce; 10. increase.

10. What verbs precede these words?

1. idea; 2. computing machine; 3. laboratory; 4. result; 5. history; 6. company; 7. goal; 8. way; 9. announcement; 10. problem.

11. Supply the articles where necessary and explain your choice:

1. After a few meetings with .... graduate student .... electrical engineering professor came to .... conclusion that he was .... talented person.
2. .... early history of .... supercomputers is .... history of .... father of .... supercomputer.
3. His main goal was to build .... fastest computer in .... world.
4. He was always .... private man, and was never interested in .... company management.
5. This company is famous in .... field of supercomputing.
6. .... speed of individual processors is increasing all .... time.
7. .... solution brought .... problem of writing programs that could utilize multiple processors at once in .... efficient manner.
8. IBM developed .... device that is a bit larger than .... typical handheld computer but has .... power of .... standard laptop.
9. .... idea of using .... binary number system to simplify .... construction of .... electronic calculator was progressive.
10. .... result of their work was .... first digital computer.

12. Translate into English:

1. Осенью 1939 года ученые начали строить первый компьютер, а через два года они его закончили.
2. Этот прекрасный студент обладает основательными знаниями в электронике.
3. Работающая модель показала жизнеспособность их концепции.

4. Значительная часть истории суперкомпьютеров связана с именем С. Крея.
5. Суперкомпьютерами называют самые быстродействующие компьютеры в мире.
6. Быстродействие (скорость) этих компьютеров невероятно велика и составляет триллионы операций в секунду.
7. В состав суперкомпьютеров входят тысячи процессоров, которые работают параллельно.
8. Многие годы компании С. Крея доминировали в области суперкомпьютеров.
9. Быстродействие современных процессоров непрерывно растет и по параметрам приближается к своему пределу.
10. Новый качественный шаг в суперкомпьютерной технике будет связан с переходом к другим принципам, например, биологическим.

13. Are you up to giving a right explanation?
Look for a proper statement in this book or put your own idea in an oral frame and use it.

Something useful

To be or not to be ...

It is well known when and how the verb to be is used e.g. as an auxiliary (I am doing smth) or as a link verb (He is a student). Nevertheless it's worth while to mention several particularities, which might have slipped students attention.

Be + infinitive

This construction can be used in the following ways:

1. To convey orders.

«You are to do this exercise, Sam» means that the speaker is conveying to Sam somebody's instruction, but «Do this exercise,

Sam» means that speaker is ordering. This construction is useful way to express orders in indirect speech especially if the verb in the main clause is in the present simple tense:

Direct speech – He says, «Stay here till 1 p.m.»

Indirect speech (possible version) – He says that I'm to stay here till 1 p.m.

2. To convey plans:

He is to join our club next week.
The President is to make a speech tomorrow morning.
This construction is often used in newspapers. In headline it would look like:
President to make speech tomorrow morning.
Here the, a, is are omitted to save space.
Sometimes when in past (was, were + infinitive) this expression can have a shade of destiny:
He separated with his girlfriend hardly suspecting that she was to get in a horrible accident.

Be about + infinitive

This expression is widely used when somebody says about the nearest, immediate future:
I am about to do this work = I am just going to do this work.

I was just about to through myself on the grass when I saw a snake.
In the last example just makes the future more immediate.

Be on the point of + gerund has the same meaning:

I'm on the point of leaving this district.
Compare with present continuous when it is used for planned future (not necessarily immediate) actions: I am going to the theater today.
It's possible to use continuous form of be with the following adjectives:

annoying; bad; cautious; clever; difficult; economical; extravagant; foolish; formal; funny; generous; good; helpful; irritating;

mean; mysterious; noisy; optimistic; pessimistic; polite; quiet; rash; selfish; stupid; unhelpful; unselfish; wise.

Some of them (bad / good, foolish / wise, noisy / quiet) are used with the continuous form of be to express that the person is showing this quality only at this time, not always. For example Sam is being wise *means that Sam is acting wise now. On the other hand* Sam is wise *means that he acts always wise.*

With some of these adjectives (difficult, funny, polite, stupid etc) continuous form might be used to show that the person is acting in certain way deliberately, e.g.: Sam is being stupid *may mean that he is not trying to understand;* Sam is being difficult *means that he is raising unnecessary objections;* Sam is being funny *means that he is joking and do not believe him;* Sam is being polite *means that he is pretending to be polite and his kind words are false.*

3. Vocabulary training

1. Identification of words

Match the words in the left-hand column with their equivalents in the right-hand column, e.g. 3-5:

1. advent	1. ability to do something well
2. conventional	2. ability to see; foresight
3. crunch	3. above the level
4. found	4. acceptability
5. foundry	5. an arrangement of straps etc attaching something to the body
6. goal	6. ancestor
7. grasp	7. chief office
8. harness	8. coming, arrival
9. headquarter	9. crush noisily with the teeth
10. incredible	10. done by habit or custom

11. interact	11. establish
12. overhead	12. have an effect upon each other
13. predecessor	13. impossible to believe
14. shrink	14. make easy to do or understand
15. simplify	15. make or become smaller
16. skill	16. not much
17. slight	17. object
18. tremendous	18. understand
19. validity	19. very great or strong
20. vision	20. workshop

2. *Useful expressions*

Try to understand, give an English explanation, if possible, and translate the following expressions, using the given meanings of the words. Then invent sentences using these expressions.

1. Be well-grounded in; ground – give basic training in.
2. Have tremendous grasp in; tremendous – (colloq.) excellent, grasp – understand.
3. Be private man; private – not open to the public, secluded.
4. Part way; part – separate, divide.
5. File for bankruptcy; file – start action in law towards smth.
6. Break barrier; the context will help you to understand.
7. In particular; particular – relating only to one person or thing.
8. Such computers are used for number crunching; crunch – consult the previous exercise.
9. His mission throughout his life; mission – task assigned to a person, throughout – from start to finish.
10. Use on the mobile basis; not fixed, changing quickly, portable, not relying on fixed cables etc; basis – foundation.

3. Reading comprehension

Read the text, try to understand the topic, look for the logical sequence of the items and put them in the proper order. The first item is in the right position.

How to begin memory upgrade

1. Turn the computer off. Disconnect all of the cables and other connections into the computer, including the telephone line connection for the modem, the printer connection, the monitor connection, and everything else.

2. Each connection should only connect one way, so there is no need to remember how the connection was oriented before it was disconnected. But chances are you've got a nice little collection of connections into your computer, so you don't want to be looking at a confused pile of disconnected wires when you're installing the memory.

3. It's not uncommon for a computer to draw a little bit of electrical current while it is plugged in, even when it has been powered off, so that's why it is important to unplug the power connector, too.

4. Set the computer in a nice comfortable work space and remove the computer case cover.

5. Also unplug the power connector from PC. It's important that nothing external to the computer be connected before you start the upgrade so that nothing outside of the computer can provide any kind of electrical current to the computer while you are working on it.

6. If you are not used to disconnecting everything then you will want to at least carefully note where each connection was attached. In this case a short strip of masking tape is used to scribble a little note for each connection and then it must be wrapped around the cord before it is disconnected.

4. Computer terms in use

Match the terms in the left-hand column with their definitions in the right-hand column.

1. free-hand computing	1. wireless control
2. head-mounted display	2. a display screen on which the user can make selections by touching the screen
3. touch-screen	3. a display that is attached to a hat or helmet etc
4. parallel processing	4. characteristics and possibilities
5. portable device (computer)	5. computing without using a keyboard
6. power and functionality	6. device (computer) that is able to be lifted and carried
7. wireless capabilities	7. a computer that fits in one's hand
8. handheld computer	8. processing data through the use of many CPUs; each of them may be used for processing one part of a program, which provides much more faster processing

4. A bit of reading practice

The IBM PC

In July of 1980, IBM (International Business Machines) representatives met for the first time with Microsoft's Bill Gates to talk about writing an operating system for IBM's new hush-hush «personal» computer. IBM had been observing the growing personal computer market for some time. They had already made one dismal attempt to crack the market with their IBM 5100. At one point, IBM considered buying the fledgling game company Atari to

commandeer Atari's early line of personal computers. However, IBM decided to stick with making their own personal computer line and developed a brand new operating system to go with. The secret plans were referred to as «Project Chess». The code name for the new computer was «Acorn». On August 12, 1981, IBM released their new computer, re-named the IBM PC. The «PC» stood for «personal computer» making IBM responsible for popularizing the term «PC».

The first IBM PC ran on at 4.77 MHz Intel 8088 microprocessor. The PC came equipped with 16 kilobytes of memory, expandable to 256 k. The PC came with one or two floppy disc drives and an optional color monitor. The price tag started at $1,565, which would be nearly $4000 today. What really made the IBM PC different from the previous IBM computers was that it was the first one built from off the shelf parts (called open architecture) and marketed by outside distributors. The Intel chip was chosen because IBM had already obtained the rights to manufacture the Intel chips.

Less than four months after IBM introduced the PC, *Time Magazine* named the computer «man of the year».

From HP to Agilent Technology & HP

Following graduation from Stanford University in 1934, electrical engineers *Dave Packard* and *Bill Hewlett* went on a two-week camping and fishing trip in the Colorado mountains. On this trip, they discovered strong similarities in their attitudes toward many things and became close friends. After graduation, Bill continued graduate studies at Stanford and MIT (Massachusetts Institute of Technology) while Dave took a job with General Electric in New York state. Within a few years, and with the encouragement of one of Stanford professors, the two decided to start a business «and make a run for it».

In 1938 Dave Packard moved back to California, Palo Alto. Bill Hewlett rented the cottage behind the Dave's house and they

began part-time work in the garage with $538 in working capital. Their first product was an electronic instrument used to test sound equipment.

On the 1st of January, 1939 they formed partnership. Coin toss decided company name – HP (Hewlett-Packard).

In the 40s test and measurement products of HP won widespread acceptance among engineers and scientists. The start of World War II turned a trickle of US government orders for electronic instruments into a stream and then a flood. New products were added and HP built its first corporate headquarters, manufacturing plants and research-and-development facilities. Production moved from garage to rented building in Palo Alto. The company gave its first bonus to employees, a $5 Christmas bonus. This later became a production bonus and – later still – company-wide profit-sharing plan. Net Revenue: $34,000; employees: 3; products: 8.

As a result – in 1942 – construction of the first company-owned building, a 10,000-square foot of office / laboratory / factory premise. Bill and Dave designed it as an open system – without interior walls – the space could be flexible.

In the 50s Bill and Dave, with the help of their management team, developed the company's corporate objectives – the basis of its special management philosophy – and the company embarked upon a path toward globalization.

1957-1959. First public stock offering. Net Revenue: $30 million; employees: 1,778; products: 373. Following the signing of the Treaty of Rome, the company established its presence outside of California with European Marketing Organization in Geneva (Switzerland) and first manufacturing plant in Boeblingen (Germany).

In 60s test and measurement field continued its steady growth. Company branched out into related fields such as medical electronics and analytical instrumentation and began to be noticed as a progressive, well-managed company and a great place to work.

These years the following events happened:

- HP's first listing on *Fortune* magazine's list of the top 500 US companies.
- First joint venture was formed with Yokogawa Electric Works in Tokyo (Japan).
- Company celebrated its 25 anniversary. Dave Packard elected chairman; Bill Hewlett elected president.
- The company's first computer was designed.
- Net Revenue: $165 million; employees: 9000.

In the 80's the massive impact of computer technology on all product lines resulted not only in products with higher performance at lower cost, but also in radical changes in processes and the organization as a whole.

The stunning development of HP is illustrated by the data given below:

Year	Net revenue $	Employees
1940	34,000	3
1951	5,5 million	215
1965	165 million	9,000
1970	365 million	16,000
1980	3 billion	57,000
1985	6,5 billion	85,000
1990	13,2 billion	91,500
1997	42,9 billion	121,900

These data are in sharp contrast to the $538 in working capital that founders Bill Hewlett and Dave Packard began with in 1938.

David Packard died on March 26, 1996; Bill Hewlett died on January 12, 2001.

Initial public stock offering raised on Nov.18, 1999 up to $2,1 billion and broke records at the largest IPO (Initial Public Offering) in Silicon Valley history. In this year HP announced strategic realignment to create an independent measurement

company composed of test and measurement components, chemical analysis and medical businesses (the name of it is Agilent Technologies), and a computing and imaging company that includes all of HP's computing, printing and imaging businesses (named HP).

Let's discuss

Be so kind as to answer the following questions.

1. Why do you think the project of IBM PC was «hush-hush» and why the company decided to make its own computer line?
2. What made the IBM PC different from the previous computers?
3. Can you characterize Bill Hewlett and Dave Packard?
4. How were they acquainted and what were their first steps?
5. What event stimulated almost from the very beginning fast development of the HP?
6. What was the main tradition of the HP. Why?
7. How can you explain the successful and extremely fast development of the HP?
8. Why did the HP announce in 1999 strategic realignment to create an independent company?

5. Relax a bit

A

Do you know where to put quotation marks?

1

Teacher: A preposition is not a good word to end a sentence with.

Student: You have just ended the sentence with with!

Teacher: But do you know what did I end the sentence with with for?
Student: No, and I also do not know what you ended that one with with with for for!

2

The teacher said that that that that that was written on the blackboard was written wrong.

**Life is what happens when you are making other plans.**
<div align="right">_J. Lennon_</div>

**Happiness is the only thing we can give without having.**
**Experience is the name everyone gives to his mistakes.**
<div align="right">_Oscar Wild._</div>

**Experience is not what happens to you; it is what you do with what happens to you.**
<div align="right">_Huxley_</div>

A

Dummies

Customer: My computer won't work. You, guys, must have broken it when you installed the modem.
Tech. Support: What happens when you turn it on?
Customer: It won't turn on anymore!
Tech. Support: So, you don't see any lights or hear any noise?
Customer: I'm telling you it won't turn on.
Tech. Support: Is it plugged in?
Customer: Of course, it's plugged in, you moron!
Tech. Support: When you push the power button it turns on.
Customer: Power button? This computer doesn't have a power button.
Tech. Support: Sir, all computers have power buttons. Look at the front of the case, find the word «power», and push the button.
Customer: YOU FIXED IT! Thanks!!!

Tech. Support: What happens when you turn the computer on?
Customer: The screen just stays black.
Tech. Support: Is the computer plugged in?
Customer: I took it to a repair shop last week, and they apparently fixed it, so it doesn't need a power cord anymore.
Tech. Support: Is the computer a laptop computer?
Customer: No, but they never gave me back the power cord, so they must have fixed it, so it didn't need it.
Tech. Support: Go back to the repair store and get your power cord back. They just forgot to give it to you.

Tech. Support: Ok sir, let's press the ctrl and esc keys at the same time. That brings up a task list in the middle of the screen. Now type the letter 'P' to bring up the 'Program Manager'.
Customer: I don't have a 'P'.
Tech. Support: On your keyboard, sir.
Customer: What do you mean?
Tech. Support: 'P' on your keyboard, sir.
Customer: I'm not going to do that!!!
Tech. Support: You need to pick a password. It should contain a combination of numbers, symbols, and upper and lowercase letters.
Customer: Upper and lowercase? I don't understand.
Tech. Support: You know, big letters and little letters.
Customer: Oh, of course! But I have to say, you must avoid that technical language with me!

B

Life experience

Inflation

Inflation has caused stores to adapt as well as consumers. Signs that used to read «Watch Your Children» now read «Watch Your Language».

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Cooking

Ann confessed to her friend: My cooking left my husband cold.
- He divorced you?
- No, he died.

Dreams

1

Two friends were sitting in a bar and recounting their dreams. «I dreamed I was with my fishing road ... beautiful lake, lush scenery ...».

«I had a great dream too», said the other. «I dreamed I was with two beautiful women and had the time of my life».

His friend looked at him and asked indignantly, «You dreamed you had two pretty girls and you didn't call me?!» «Oh, I did, «answered the other», but your wife said you had gone fishing».

2

Wife: Oh, my angel, I dreamed that you bought me a
                   nice fur coat.

Husband
(feeling a trap): In your next dream wear it in good health.

3

«Doc», said the young man, «you have got to help me! Every night I have the same terrible dream. I'm lying in bed when the door opens and three beauties come in and start tearing off my blanket».

– And what do you do?
– I'm pushing them away.
– How can I help you?
– Break my arms!!!

Infidelity

Two business colleagues were walking down the street when one of them turned to the other, looking very distressed. «Gee», he said, «here comes my wife and my mistress together». «Ohmigod», said the other, «mine too».

Quotation marks, answers

1

Teacher:	A preposition is not a good word to end a sentence with.
Student:	You have jast ended the sentence with «with».
Teacher:	But do you know what you ended that one with «with with for» for.

2

The teacher said that that «that» that was written on the blackboard was written wrong.

Unit 6

1. Information for study

Software development

If builders built buildings the way the programmers wrote programs, the first woodpecker to come along would destroy civilization.

In the beginning, computers used numbers as the primary form of input data. Later with the development of hardware and software the definition of data was expanded. Now users can input not only numerical but also textual (letters and special characters), audiovisual (music, video, voice, pictures), and physical (light, sound, temperature, pressure) data.

Although a modern computer is capable of accepting many types of input, it can only operate on digitally formatted data, just as original computers did. Hence software must be created to interface the computer with the various types of input data. Because a computer runs on electricity, data must be stored as a series of on and off patterns.

Computer circuits can be in only one of two states: either on (represented by 1) or off (represented by 0). Each numeric value is known as a binary digit (bit) and unique combinations of those two bits, are what binary code, or machine language, is called. Different patterns in binary code could then be used to represent various input characters. Once data has been converted to binary form, computers would then apply a software program (applications or apps) to the digital input data, sequentially execute the instructions, and successfully process it into information.

Engineers quickly realized that writing in binary code (machine language) was extremely difficult and time consuming.

Writing software programs in numerical (or digital) format was an immense task for anyone. Therefore, it was necessary to develop software into a more user-friendly format.

As programmers developed existing code, new computer capabilities were noticed and the demand for even more advanced software increased. It inspired programmers to develop more software.

The early days of computing were restricted to scientific and engineering applications, but after the once-imagined possibilities became realities, the general public's appetite for computer accessibility and capability began to skyrocket. Thousands of new programs were being written as swiftly as possible and yet the demand continued to increase. Of the thousands of programs available, software types typically fall into 2 categories: *system software* and *application software.*

System software controls various internal computer activities. Any software that controls such activities will fall into one of three categories: *programming language, operating system,* and *utility software.*

Programming languages are the various methods of writing computer instructions. The instructions adhere to a particular set of protocols for each language. Through the years, more than 200 languages have been developed, some of which are quite specialized. Some of the most popular languages include BASIC, COBOL, Pascal, C, C++, Visual Basic, and FORTRAN. But regardless of which language a program was written in, a computer can only process binary code. Therefore, each language must eventually be converted back to binary code before any instructions can be followed.

The first generation of computer languages was machine language. Machine language was difficult to use It was time consuming and filled with errors.

The second generation of computer language, assembly language, was developed in the 1950s and reduced the complexity of program-authoring by using symbols instead of 0's and 1's. How-

ever, each computer or family of computers had its own assembly language which prevented the software of one computer model from being used on a different computer model. Although programming became easier to write, it remained idiosyncratic with its lack of portability.

Third generation languages, called high-level languages, were developed for two reasons: one- so programmers could work on different computers without having to learn a new assembly language each time, and software written on one computer could be used on another. A *compiler* (program translator) was used to help solve these problems by translating a program into machine language and checking the program for syntax errors (spelling or grammar mistakes unique to a specific language). The advent of the compiler greatly reduced the programmer's burden of memorizing specific code for each machine.

Fourth generation languages, called very high-level languages, use a similar language translator (called interpreters) but require fewer lines of code because they rely on objects of code that are reusable. These predefined objects have numerous strengths such as portability, easy structuring, and simplified development but also make the languages less flexible.

Until 1970, IBM bundled its software with its computers, selling the hardware along with the software needed to run it. In 1970, IBM began charging a separate fee for its software, thus opening a market for independent software developers to write programs that would run on IBM machines. By the time the first personal computer (PC), called the Altair, hit the market in the 1975, there were many well-developed computer languages and competent programmers available to write software for the new industry. Micro Instrumentation and Telemetry Systems, Inc., the manufacturers of the Altair, introduced an operating system that was a version of Beginner's All-Purpose Symbolic Instruction Code (*BASIC*), written by Bill Gates and Paul Allen, and enabled Altair owners to write their own programs.

The *operating system* (OS) is a group of system programs that help in the operation of a computer by telling the computer how to interpret commands, process the inputs and outputs, and manage data. The OS is automatically loaded when the PC is started and can activate other programs.

By far the most common OS for PC's is the Disk Operating System (DOS). Windows 98, Me, NT, 2000 etc and AT&T's UNIX are other examples of popular operating systems.

Operating systems have become larger and more sophisticated in response to the capabilities of new hardware and other software. But in the early 1980s, just before IBM introduced its first PC, the dominant OS was the Control Program for Microprocessors (CP / M), developed by Gary Kildall in 1973 for Intel Corporation . In 1974, Kildall founded Digital Research, Inc. and sold CP / M by mail order. CP / M was the first OS that would run on PCs made by different manufacturers, and it had the largest number of programs for data and word processing and calculations. But IBM chose DOS as its operating system, and when its open-architecture PC hit the market, programmers jumped at the chance to write application software for it. Although it was a powerful operating system, in 1983 CP / M was on only four percent of the PCs and few software developers supported it, preferring to write for the growing DOS-based market.

Utility software expands the performance of the operating system by adding functions that are not part of the original OS. Utilities perform troubleshooting jobs, inspecting diskettes for damage, file conversion, defragmenting, data compression, and file spooling. Some utility programs, such as Symantec's Norton Utilities, even retrieve data from damaged disks. Utilities can also be used to customize the OS environment.

Application software (*apps*) is used to perform specialized functions or specific jobs. Specific jobs might be to create a family tree, learn basic math or quantum physics, create a plot for a novel, do payroll and accounting, draw flowcharts etc. Regardless of type of task, users can choose from thousands of apps to facilitate the job. To help sort out the thousands of apps, the software publish-

ing industry tracks more than 35 categories. Four of the major categories that represent the progress of application software, made since the late 1970s, are: *spreadsheet, database management, word processing* and *entertainment.*

The first successful spreadsheet program was VisiCalc, written for the Apple II. Introduced by Dan Bricklin and Bob Frankston in 1979, VisiCalc gave PC users the ability to prepare detailed budgets and financial analyses. Its popularity soared because it enabled PC users to do something that a mainframe could not – enter numerical or financial data and immediately see its affect on other numbers. At a time when the PC was struggling to be taken seriously, VisiCalc changed its perception from a toy to a legitimate business tool.

Following the success of VisiCalc, in 1982 Lotus 1-2-3 was introduced and quickly became the number one spreadsheet software. One reason for its success was that it integrated three applications: spreadsheet, graph generation, and database management. Many other spreadsheet programs followed, including Microsoft Excel (1987), and Wind Z for the Apple Mac (1988).

Database Management. One of the applications that initially seemed to be limited to mainframes and minicomputers was the management of large databases. When Ashton-Tate introduced dBase II for CP / M, it was the first serious database manager for PCs. Developed as a program called Vulcan by Wayne Ratliff to manage a company football pool, dBase went on to be a powerful business tool for DOS machines. Like Lotus 1-2-3, dBase II was also an integrated software, combining database management, spreadsheet, graph generation, and word processing in one software program.

Finally such database managers as Microsoft Access and Visual FoxPro ultimately overtook others.

Word Processing. A major problem for word processing software was the perception that computers calculated and generated reports full of numbers – not words.

The first word processing program that truly established the category was WordStar, introduced in 1979. Throughout the 1980s, different word processors leap forged into prominence with each new release. Magic Wand (1979), Corel's WordPerfect (1984), Microsoft Multi-

Tool Word (1983), and Apple's Write captured market share as they expanded the uses for word processing programs.

Although each release of word processing programs expanded the capability of this software category, users still remained frustrated when they printed their documents. What they saw on the screen was not what they saw come out of the printer. In 1985, Adobe Systems, Inc. introduced PostScript page description language (PDL), and along with Apple's

LaserWriter printer created an entire industry and software category called *desktop publishing*. Together, the PDL and the printer enabled PC users to format a document on the screen exactly as it would appear when printed and introduced a new word – WYSIWYG – What You See Is What You Get. Being able to view a document before printing augmented the creativity of many users.

Before long, word processing programs were capable of more than just manipulating words; the ability to insert pictures, clip-art, and graphs was introduced. But even as programmers continued to respond to the public's software requests, their insatiable appetite for innovation grew. The popularity of word processing software continued to escalate and more tools were continuously added. Unique tools such as spell-checker, thesaurus, font menus, grammar check, and templates eventually became commonplace. Often times users would find a needed tool in one of their programs but not another, so programmers created suites. Suites typically integrate a word processor with a database manager and a spreadsheet application, so that each program would have the ability to share data with any other program in the package.

Games and Entertainment. Even the first mainframes were used to play games, albeit they were more likely to be thought-provoking chess rather than blood-and-guts Mortal Combat. The first games were text only programs called Star Trek and Colossal Cave. These were followed by Space War, the first arcade-style game originally played on a mainframe computer at the Massachusetts Institute of Technology.

Early PC games were mostly educational in purpose and less than appealing for people who had grown accustomed to the visu-

al excitement of the dedicated game devices. Gaming on PCs became popular when hardware was able to display high-resolution color, microprocessors could handle the high speed bit rates necessary for the action, and a variety of controllers (joysticks, steering wheels, etc.) were available for PCs.

PC game software falls into several categories. In addition to interactive novels and simulations there are skill and action games and strategy / cognitive games.

The _Internet_ has made a significant impression on computer software's marketability and capability. A consumer no longer has to go to a store, sift through hundreds of software titles, read descriptions of each to make a purchasing decision, go home and figure out how to install and register the software, and then learn how to use the software before realizing that they may be unsatisfied with their purchase. The Internet has popularized the concept of public domain software. Public domain software is available as either freeware or shareware.

Freeware is software that is distributed to users free of charge. However, there is no guarantee that the program is either useful or error-free.

Shareware is software offered on a «try before you buy» basis so users can determine if it meets their needs. People are encouraged to copy the program and share it with others, always with the understanding that if a user likes the program, then either a donation or a fee is to be paid to the programmer. Users who download freeware and shareware should take caution before using such programs as there is the possibility of acquiring a virus. To protect computer, public domain users should use anti-virus utility software.

The Internet has also introduced a whole set of new apps. E-mail, web browser, firewall, and search engine software are just a few types of apps that are used solely online. HTML (Hypertext Mark-up Language) and Java are just two examples of internet-based computer languages.

2. Exercises

1. *Read and translate the text.*

2. *Check up your understanding. Give full answers:*
   1. Why software was created? What was the reason?
   2. How must be data stored in a computer?
   3. What does the «binary digit» mean?
   4. Why does the unceasing demand for more advanced software exist?
   5. What does it mean «programming language»? Can you give some examples?
   6. What do you know about high-level languages?
   7. What does compiler do?
   8. What do you know about OS?
   9. What kind OS do you prefer to use? Why?
   10. Why do we need utilities?
   11. What are apps used used for?
   12. What do you know about Word Processing?
   13. WYSIWYG, what is it?
   14. Have you ever used freeware or shareware?
   15. Software is changing so fast that it's too risky to predict the future of it. Do you agree with this statement? If yes, why? If not, give your own version.
   16. Do you use the Internet? What for?

3. *Retell the text briefly using the following terms and expressions:*

   Interface the computer with input data; binary digit; software; off and on patterns; machine language; execute instructions; programming languages; operating system; utility software; application software; word processing; WYSIWYG; freeware; shareware.

4. *What is missing? If you are in doubt refer to the text. Take it into account that in each item the first letter of the missing word is used:*

   1. At first, numbers were the primary form of c.... d..... .
   2. Software must be created to i.... the computer with input d..... .

3. Each numeric value is a called b.... d.....
4. System software c.... internal computer activities.
5. Because of h.... 1.... 1.... programmers could work on different computers without having to learn a new a.... language each time.
6. The o.... s.... is a group of programs that help computer to interpret commands, p.... the inputs and outputs, and manage data.
7. Utility and application software expand the p.... of OS.
8. The Internet has made a significant impression on software's m..... .
9. Freeware is distributed to users f.... of c..... .
10. The Internet has introduced a set of new a..... .

5. *Rearrange the words and get the right sentences:*

1. states / two / computer / can / circuits in / be /.
2. a user-friendly format / it/to develop / into / necessary / software / was /.
3. to develop / it / more / inspired / software / programmers /.
4. software / computer / written / could / be/on / used / on / one / another /.
5. programs / system / can / operating / other / activate /.
6. application / the chance / programmers / jumped / to write / at / software /.
7. success / reason / for/its / applications / was / that / it / integrated / three / one /.
8. more / word / programs / than / were / words / capable / processing / of / manipulating /.

6. *Supply the preposition if one is missing. If necessary refer to the text:*

1. Modern computer operates ... digitally formatted data.
2. A computer runs ... electricity.
3. Computer circuits can be only ... two states.
4. The early days of computing were restricted ... science applications.
5. It increased the demand ... more advanced software.
6. OS is a group of programs that help ... the operation of a computer.

7. CP / M was the first OS that could run on PCs made ... different manufacturers.
8. Utilities inspect diskettes ... damage.
9. What the users saw ... the screen was not what they saw come ... ... the printer.
10. Early computer games were mostly educational ... purpose.
11. Writing programs ... digital format was an immense task.
12. All of the available programs fall ... two categories: system software and application software.

7. There are two words in each item. You must explain how is «a» like «b» and how does «a» differ from «b»:

1. (a) first computers, (b) modern computers (concerning their software);
2. (a) OS, (b) utility;
3. (a) freeware, (b) shareware;
4. (a) utility, (b) apps
5. (a) second generation language, (b) high level language.

8. Give the opposites of the following words:

1. input; 2. quickly; 3. modern; 4. fill; 5. notice; 6. internal; 7. specific; 8. separate; 9. high; 10. independent; 11. competent; 12. manufacturer; 13. add; 14. insert; 15. early; 16. possible.

9. Give the synonyms of the following words:

1. modern; 2. accept; 3. realize; 4. increase; 5. restrict; 6. general; 7. swiftly; 8. various; 9. particular; 10. error; 11. memorize; 12. fee; 13. competent; 14. entire.

10. What verbs precede these words?

1. data; 2. instruction; 3. program; 4. time; 5. code; 6. fee; 7. market; 8. chance; 9. job; 10. capability; 11. document; 12. impression; 13. software; 14. game.

11. Replace the italicized words and expressions by appropriate words and expressions given in the list below. Some of them might be used more than once.

If necessary, refer to the dictionary at the end of this book.

Appear in; at first; contemporary; dealing with errors and problems; desire; encourage; examine carefully and select; increase; not cease; payment; quickly; tremendous; understand.

1. _In the beginning,_ computers used numbers as the primary form of input data.
2. A modern computer is capable of accepting many types of input.
3. Engineers quickly _realized_ that writing in binary code was extremely difficult.
4. Writing software programs in numerical format was an _immense_ task for anyone.
5. It _inspired_ programmers to develop more software.
6. The general public's _appetite_ for computer accessibility and capability began to _skyrocket._
7. IBM began charging a separate _fee_ for its software.
8. IBM chose DOS as its operating system, and when its open-architecture PC _hit_ the market, programmers _jumped at the chance_ to write application software for it.
9. Utilities perform _troubleshooting_ jobs, inspecting diskettes for damage.
10. The popularity of word processing software _continued_ to _escalate_ and more tools were continuously added.
11. A consumer no longer has to go to a store, _sift through_ hundreds of software titles, read descriptions of each to make a purchase decision.

12. Translate into English.

1. В начале своего развития использование компьютеров ограничивалось научными и инженерными применениями.
2. До 1970 г. IBM ориентировало программное обеспечение на различные компьютеры и продавало их в комплекте.
3. К тому моменту, когда первый персональный компьютер появился на рынке, существовали хорошо развитые

компьютерные языки и грамотные программисты способные создавать новые программы.

4. При включении компьютера операционная система загружается автоматически и может активизировать другие программы.

5. Утилиты расширяют возможности операционной системы, добавляя ей дополнительные функции.

6. Несмотря на то, что выход новых программ обработки текста расширяло возможности этой категории программного обеспечения, пользователи разочаровывались, поскольку то, что они видели на экране, не соответствовало тому, что было после печати на принтере.

7. Программы обработки текста не только оперировали словами, но обладали возможностями иллюстрирования и графики.

8. Первые компьютерные игры преследовали, в основном, образовательные цели.

9. Компьютерные игры стали популярными, когда стало возможным получение цветовой гаммы с высоким разрешением, а скорость процессоров стала большой.

10. Интернет оказал существенное влияние на доступность программного обеспечения для пользователя.

13. Are you up to giving a right explanation?
Look for an appropriate statement in this book or make up your own and let's play this game.

Reference of multimeaning grammar items (just for your background). To have or not to have...

1

Everyone knows that as an auxiliary verb **to have** is used to form the Present (**I have done**) and Past Perfect (**I had done**) Tenses.

The **Present Perfect** tense is a sort of a mixture between present and past. It implies a strong connection with the present and is widely used.

Mistakes are dispensable. Hence, it's better to recollect how to use this tense:

1. *If you want to mention something that happened in the past but you don't want to state when it happened (maybe you don't know) you use the Present Perfect:*

    I have bought a new computer.
    Compare with: I bought a computer yesterday.

    Possible answers to the question in the present perfect:

    Have you seen this film?
    Yes, I have.

    Or

    I saw it yesterday.

2. *Very often actions in the Present perfect have results in the present:*

    I have lost my pen. *(Probably I have no pen.)*
    Our lift has broken down. *(We use stairs.)*

    Actions expressed by the Present Perfect + yet <u>usually</u> have results in the present:

    He has not come yet. *(We are still waiting.)*

    On the contrary, actions expressed by the Simple Past without a time expression do not normally have results in the present:

    Our lift broke down. *(It's probably working now.)*

3. *The Present Perfect (+just, already) is used to describe recently completed actions:*

    I have just eaten.
    We have already finished our homework.

4. *The Present Perfect is used for the actions that occurred in the past and can be repeated in the present:*

    Mr. Jones <u>has written</u> several plays.
    It implies that Mr. Jones is still alive and can write more. Hence, Lord Byron <u>wrote</u> many poems.

5. *The Present Perfect is used for actions occurring in an incomplete period. An incomplete period may be expressed by today, this morning, this afternoon, this evening, this week, this month, this year etc.*

The Present Perfect is used with this morning *up to 1 o'clock. After that the Simple Past is used. E.g. the postman comes to you every day in the morning; it is 11 a. m. You ask, «Has the postman come?». At 2 p.m. you ask, «Did the postman come?»*

As afternoon ends at 5 p. m., at 3 p. m. you ask, «Have you seen Sam this afternoon?» But at 7 p. m. you ask, «Did you see Sam this afternoon?»

Lately and recently also indicate an incomplete period of time:

He has had a lot of trouble recently.

But if **recently** is used with the Simple Past it means <u>a short time ago</u>:

He went out recently = He went out a short time ago.

6. *The Present Perfect can be used with **ever, never, always, occasionally, often, several times** etc. and also with **since + a point of time:***

I have not seen Jack since July.
I have never smoked.

7. *The Present Perfect is used when a sentence begins with **This is the first (second, third) time:***

This is the first time I've been to London.
This is the third time I've driven a car.

8. *The Present Perfect continuous is used for an action which began in the past and is still continuing:*

We have been waiting for him for 30 minutes. Let's go now.

*Don't forget about a number of verbs which are not normally used in the continuous form (except certain cases). The verb **want** is often used in this tense:*

Thanks so much for this book. I have been wanting it for ages.

9. *The Present Perfect continuous tense does not exist in the passive.*

An action which began in the past and is still continuing with certain verbs can be expressed by either the Present Perfect Simple or the Present perfect continuous. Among these verbs are: live and work:

How long have you been living in London? *Or*
How long have you lived in London?

The Past Perfect *is the past equivalent of the Present Perfect and is used when the narrator looks back on earlier action from a certain point in the past:* I had just started to do my homework when Tom dropped in.

2

Have to

*As it is known the verb **must** expresses an obligation imposed by the speaker:*

Teacher: You <u>must</u> do all the exercises. Otherwise you'll get in trouble.

Have to implies an external obligation:

Sam <u>has to</u> use his old computer because he has no money for acquiring a new CPU and motherboard.

*In the first person the difference between **must** and **have to** is less important.*

3

Have + object + present participle

The expressions of such type are often used with a period of future time:

I'll have you speaking English in one year, which means that you will speak English as a result of my efforts.

It can be also used for future and past:

The teacher had them all studying.

Which means that the teacher persuaded them to study.

This expression can be used in the interrogative but not often in the negative.

4

Have + object + past participle

This construction can be used to express situations like:

I employed someone to do something.

For example instead of saying

I employed a professional to mend my TV set

it's possible to say

I had my TV set mended.

Take it into account that this construction is frozen. If you change the order of the words you'll change the meaning of the statement, e.g.:

I had mended my TV set

means that you mended it yourself.

This construction can be used to replace a passive verb. For example instead of saying

His car was stolen before he had a chance to drive

you can say

He had his car stolen before he had a chance to drive.

When 'have' is used in this way the negative and interrogative are formed with the help of 'do'.

5

Besides 'to posses' the verb to have has several different meanings. Here are some of them, e.g.:

- *accept:* He wanted to marry her, but she wouldn't have him.
- *know, understand:* He has no English.
- *deceive, cheat (colloq.):* The gambler had him.
- *people with or without wealth or privilege:* There are haves and have-nots.

- *assert:* Rumor has it that she is going to be married.
- *tolerate:* I won't have you to behave that way.
- *cause to be done:* Have your haircut.

6

To have as a phrasal verb:

- <u>*have in*</u> *(invite):* We are having the Smiths in for dinner today.
- <u>*have on:*</u>
1. *wear:* He had nothing on.
2. *be engaged in doing:* He has a lot on today, but tomorrow he'll be free;
3. *deceive, cheat, mislead (fam):* They must have been having you on. Stop having me on, please!

- <u>*have out:*</u>
- *have removed or extracted:* He had his tooth out yesterday.
- *discuss, argue towards a conclusion:* They had it all out yesterday. I must have the matter out with them.

- <u>*have up (invite):*</u> I had them up for coffee last night.

7

Well, try to remember now several useful expressions and idioms with have:

Have an eye for – *have good taste in*

He has an eye for good English usage.
She has an eye for style in clothes.

Have eyes only for – *want nothing else but, give all attention to*

All the girls liked Tom, but he had eyes only for Ann.

Have a screw loose (slang) – *to be foolish, to act in a strange way*

Now I really know he has a screw loose.

Have got it made – *to be successful*

With your excellent education and quick wit you've got it made.

Have + noun is often used in the sense of performing certain activity: have a dance, have a look, have a rest, have a fight, have a talk, have a wash, have a swim:

> Have a look at our place.
> You're exhausted. You must have a rest.
> We had a nice talk with Jim yesterday.
> Sam had a dance with Mary.

8

Had better + bare infinitive

It's a sort of advise or wish:

We had better go *means that it would be better for us to go.*

You had better is an advice form:

You had better stop smoking.
In indirect speech had better remains unchanged. With the second person it can be reported by advise:

He said, «You had better go by train».

Two possible versions:

He said I had better go by train.
He advised me to go by train.

Had rather + bare infinitive means prefer.

I had much rather he come tomorrow.

3. Vocabulary training

1. Identification of words

Match the words in the left-hand column with their equivalents in the right-hand column, e.g. 3-4. If necessary look up the dictionary.

1. primary	1. grow wider or bigger
2. definition	2. put a limit on
3. expand	3. at last, finally
4. consume	4. make (a book etc) from information that has been collected
5. restrict	5. increase
6. eventually	6. make it possible for
7. compile	7. an area of interest
8. flexible	8. precise statement or explanation
9. enable	9. follow
10. track	10. easily bent
11. augment	11. chief
12. domain	12. use up

2. *Useful expressions*

Match the expressions in the left-hand column with their equivalents in the right-hand column, e.g. 1-3:

1. in the beginning	1. don't lose the opportunity
2. hit the market	2. have good taste in
3. jump at the chance	3. be successful
4. have an eye for	4. put on sale
5. have a screw loose	5. at first
6. have eyes only for	6. prefer
7. have got it made	7. be foolish
8. had rather	8. give all attention to

3. *Phrasal verbs*

Make up your own sentences using the phrasal verbs from the list below.

If necessary use the dictionary at the end of this book.

Run on; develop into; process into; fall into; check for; sell along with; sort out; go on; forge into; sift through.

4. Reading comprehension

Read the text, try to understand the topic, look for the logical sequence of the items and put them in the proper order. The first and the last item are in the right position.

1. An OCR (Optical Character Recognition) system enables you to input printed documents into your computer automatically via a scanner.

FineReader is an omnifont optical text recognition system. It means that the system recognizes texts in practically any font without prior training. The process of document input can be divided into two stages:

2. The principles of IPA (Integrity, Purposefulness, Adaptivity):

*   *Integrity* – the object of recognition is described as a single entity by a set of basic elements and their interrelations.
*   *Purposefulness* – recognition is a process of generation and purposeful verification of hypotheses.
*   *Adaptivity* – the system ability to learn and be trained.

3. Let's take a closer look at the second of two mentioned above stages.

FineReader OCR image processing involves analyzing the image file transmitted by the scanner (layout analysis) and recognizing each character.

4. These three principles determine the systems behavior. The system generates a hypothesis about object of recognition and then tries to find all the structural elements and their interrelations step by step. Then the program adapts itself to the text – tunes itself – using the positive experience gained from the first confidently recognized characters. Purposeful searching and using context enable the system to recognize even torn and distorted characters.
5. The final result is the recognized text you see in the FineReader Text window, a text you can edit save in any convenient format.

6. These two stages are:

Scanning. During the first stage the scanner acts as the «eye» of your computer; it looks at the image and transfers it into the computer.

Recognition. During the second stage FineRider performs the OCR image processing.

5. *Computer terms in use*

A. *Match the terms in the left-hand column with their definitions in the right-hand column. If necessary consult the dictionary:*

1. application programs	1. arrangement of data
2. compiler	2. a connection point between to different elements as devices, programs etc
3. database management	3. command the user gives the computer to initiate the task
4. format	4. computer programs that enhance and protect the OS
5. freeware	5. programs that enables users to perform specific job, word processing, accounting etc
6. instruction	6. program that adds functions to OS e.g. debugging, inspecting diskettes for damage etc
7. interface	7. program that translates the programmer's code into code that computer can 'understand'
8. shareware	8. program, used to perform various calculations
9. spreadsheet	9. program that manages database
10. system programs	10. process of creating, editing, and storing documents
11. utility	11. software that is distributed to users free for charge
12. word processing	12. software that is offered on a 'try before you by' basis

B. **Find out Russian equivalents of the computer terms given below. If it's beyond your grasp, give at least Russian explanation:**

Plug and play – an industry standard that allows computer peripherals to be automatically configured by the operating system. Plug and play eliminates the need to manually change jumpers and other hardware settings when installing hardware.

Resource. Window resources include icons, cursors, menus, bitmaps, fonts, etc. The resources used by an application are either part of the system, or private resources stored in the applications program file.

Icon – a small image on a display screen that, in conjunction with a mouse, select and executes program functions.

Menu – a list of options from which a user can chose, or a list of programs that a user can access.

Bitmap – in graphic technology, when a portion of the customer's memory is used for storing graphics.

Assembly language – machine language that has had some of the numbers replaced by somewhat easier to remember mnemonics in an attempt to make it more human-readable. The program that converts assembly language to machine language is called an assembler.

Program – a series of instructions for a computer, telling it what to do or how to behave.

Running – a program is how it's made to do smth. The term «execute» means the same thing.

Graphics – anything visually displayed on a computer that is not text.

Browse – to look through a list on a computer system.

Character – a letter, number, punctuation mark etc.

Emulator – a program that allows one computer platform to mimic another for the purposes of running its software.

Desktop publisher – a program for creating newspapers, magazines, books etc. e.g. Frame Maker, Page Maker, InDesign, GeoPublish.

4. A bit of reading practice

Piracy economic impact

Intellectual property-based industries are significant drivers of the high as 50%, is known as casual copying. Casual copying is the sharing and installation of software on multiple PCs in violation of the software's and user license agreement (EULA). Software and software-related services alone account for a $140.9 billion market, payment of $12.3 billions in taxes and the creation of more than 2.7 million jobs. However, software counterfeiting threatens the ability of the industry to maintain its significant contribution to the U.S. economy.

According to a 2000 software piracy study by International Planning & Research Corp., software piracy resulted in:

- 24% percent of the business software applications installed on PCs in the U.S. were pirated;
- 118,026 lost jobs;
- $5.6 billion in wages lost;
- $1.6 billion in lost tax revenue.

Worldwide, the software industry generates more than $28 billion in tax revenues annually. If privacy were eliminated in the U.S. and reduced abroad, it is estimated that the industry would produce an additional 1 million jobs by 2005 and contribute $25 billion in tax revenues.

In 2000:

- The worldwide piracy rate was 37%;
- $11.75 billion in revenue was lost.

Microsoft has developed product activation as one solution to reduce casual copying.

The majority of customers acquire Windows with the purchase of a new computer, and most new computers pre-loaded with Windows XP not require activation at all. Microsoft provides OEMs (Original Equipment Manufacturer) with the ability to

«pre-activate» Windows XP in the factory and estimates that upwards of 80% of all new PCs will be delivered to the customers pre-activated.

«Pre-activation» of Windows XP by the OEMs will be done in different ways depending on the OEM's own configuration options and choices. Some OEMs may protect Windows XP using a mechanism which locks the installation to OEM-specified BIOS information in the PC. Microsoft expanded and integrated the existing OEM CD BIOS locking mechanism with product activation, and called this method of protection «System Locked Preinstallation», or SLP.

Successfully implemented, SLP uses information stored in an OEM PC's BIOS to protect the installation from casual piracy. At boot, Windows XP compares the PC's BIOS to the SLP information. If it matches, no activation is required.

In the unlikely scenario that the BIOS information does not match, the PC would need to be activated within 30 days by contacting the Microsoft activation center via the Internet or telephone call.

OEMs may also activate Windows XP by contacting Microsoft in the same way the consumer would activate.

In 1998 38% of software in circulation was pirated, causing approximately $11 billion in losses to the global software industry. Software piracy is a serious worldwide problem – particularly where the piracy rate in some countries is close to 100%. Contributing to the staggering piracy rate are disparate intellectual property and copyright laws coupled with the aggressive growth of the Internet. And although industry organizations have been successful in many of their efforts to combat software piracy, governments around the world must take steps to improve their intellectual property laws and enforcement system.

Without a global commitment to reducing piracy, the potential for world economic growth is seriously crippled. The high piracy rate inhibits the development of the software industry and precludes it from reaching its full worldwide potential by cheating legitimate budding software developers and compa-

nies of the rights and rewards of their hard earned intellectual property.

Countries with the highest dollar losses due to software piracy:

United states, China, Japan, Germany, United Kingdom, France, Brazil, Italy, Canada, Russia.

Losses for these countries totaled $7.3 billion, or 67% of worldwide losses in 1998.

1. *Read and try to understand the given above text.*
2. *What's your opinion concerning software piracy? Will it exist always?*

Thank you for your hard work!

5. Relax a bit

To be sure of hitting the target, shoot first, and call whatever you hit the target.

Programming laws:

- Any given program when running is obsolete.
- Any new program costs more and takes longer.
- If a program is useful it will have to be changed.
- If a program is useless it will have to be documented.
- Any program will expand to fill available memory.
- Program complexity grows until it exceeds the capabilities of the programmer who must maintain it.
- Any non-trivial program contains at least one bug.
- Axiom: human beings are unreliable. As a consequence, any system which depends on human reliability is unreliable. Hence, hardware and software are unreliable.
- Tell a man there are 300 billion stars in the universe and he'll believe you. Tell him a bench has wet paint on it and he'll have to touch to be sure.
- The average woman would rather have beauty than brains because the average man can see better than he can think.

It is a rather pleasant experience to be alone in a bank at night.

W. Sutton

My boyfriend keeps telling me I've got to own things. So, first I bought this car. And then he told me I oughta get a house. «Why a house?» «Well, you gotta have a place to park the car».

Julia Roberts

Life experience

Profession

A doctor, physicist, and politician were arguing about whose profession was the oldest.

«Of course mine», said the doctor, «because Eve was created from Adam's rib, and that was a medical phenomenon».

«But before that order was created from chaos and that could be made only by physicist», said the physicist.

«Dear friends», noted the politician, but in the beginning someone had to create chaos ...

Love

«You're right», said a golfer to his wife, «I love golf more than I love you. But remember I love you more than I love tennis».

Birthday

Ann said proudly, «My grand grandfather doesn't drink, smoke, eat meat, philander with women, gamble and swear, and tomorrow he is going to celebrate his 95th birthday!»

Jack looked at her surprisingly and asked: «How?!»

Airplane

The plane took off. Suddenly it shuttered when one of the engines blew up, then another one. The passengers were in a pan-

ic. A pilot asked them to keep quiet as it was nothing to worry about. Then he walked to the door of the aircraft, grabbed several packages, and handed them to the flight attendants. «Say», asked an alert passenger, «aren't those parachutes»?

«Yes, they are», answered the pilot. «But you said there was nothing to worry about», went on the passenger. «There isn't», replied the pilot as the third engine exploded. «We're going to get help».

UNIT 7

1. Information for study

Internet

People always wanted to communicate and share information. That was the main reason for the development of computer network.

Computer network is a group of computers that can interact by means of a shared communication link. There are two types of network:

- *Local area network (LAN)* is a network where computers are connected together directly, usually by cable. It is used in offices etc.
- *Wide area network (WAN)* is a network of local area networks connected together. The connection might be a cable or a mixture of cable, fiber optic, and satellite connectivity.

Modem (abbreviation for *modu*late / *dem*odulate) is a device that allows computers to communicate over ordinary phone lines. It converts digital computer data back and forth for use with analog phone line. There are two types of modems: internal and external. Internal means that modem goes inside your computer. External modem is outside your computer and must be plugged into it.

A *server* is a computer designed to provide various services for an entire network. It is typically either a workstation or a mainframe because it will usually be expected to handle far greater loads than ordinary desktop systems.

The roots of the Internet go to 1969, when the Defense Advanced Research Projects arm of the Department of Defense created ARPANET for research in *net*working. The project title was «Resource Sharing Computer Networks». The work centered around the problem in the Department of Defense – how to keep military sites in communication across the country in the event of a nuclear war.

In the beginning research was the main goal of the system. In 1994 an explosion of direct connections to the Internet occurs. Research is not any more the only purpose of Internet. The Internet experiences a steady growing process. Not only universities, research companies and other organizations became part of the Internet, but many of small businesses and homes were connected.

The estimate for year 2000 was 40 million people connected to the Internet and the large majority were home connections in more than 50 countries.

The Internet provides many services. Among them:

- *E-mail.* You can send or receive electronic messages from anyone on the Internet. Anything that can be stored in text file can be mailed.
- *File Transfer.* The File Transfer Protocol (FTP) provides for the copying of files from one computer to another.
- *Communication.* You can communicate with the help of the Internet with one person or a group of persons simultaneously.
- *Information.*

On the Internet all addresses / domain names refer to «electronic Addresses», e.g.:

person-id@computer name.domain name

There is never blank space between the components of the Internet address. User ids need not be unique (id – identification), e.g. two people with the same name can have it as login name as long as they operate on separate domains. But the domain name of the computer must be unique, however:

austin@galaxi.isr.umd.edu, austin@euler.berkeley.edu

Austin is the person-id, «galaxy» and «euler» are computer names, «isr.umd.edu» and «berkeley.edu» are domain names. Domain names are composed of sub-domain names: esr, umd, edu.

The table summarizes commonly used sub-domain names:

Domain names meaning	
Domain	**Meaning**
com	Commercial Organization
edu	Educational Organization
gov	Government
int	International Organization
mil	Military Organization
net	Networking Organization
org	Non-profit Organization
at	Austria
au	Australia
br	Brazil
ca	Canada
de	Germany (Deutschland)
dk	Denmark
fr	France
jp	Japan
nz	New Zealand
uk	United Kingdom (England, Scotland, Wales, Ireland)
ru	Russian Federation

In the computer address *isr.umd.edu* the sub-domain «edu» tells that the computer is located at an educational institution. The sub-domain name «umd» stands for the University of Maryland, and «isr» means the collection of computers at the Institute for System Research, at the University of Maryland.

If you want to send a message put down the word «mail» before the address.

Today computers are seen as indispensable tools not only for computation and typing but for communications. The merging of computation and communications is making essential changes to day-to-day business activities of engineers. Suppose an engineer belongs to a geographically dispersed team. He can:

- Use the Internet / E-mail for day-to-day communications.
- Conduct engineering analyses at remote sites.

- Share results among the team members.
- Participate joint ventures assembled over a network, and online bidding of projects etc.

The World Wide Web (WWW)

The World Wide Web dates back to March 1989, when Tim Bermers-Lee of the European Particle Physics Laboratory (known as CERN, a collective of European high-energy physics researchers) proposed the project to be used as a means of transporting research and ideas effectively throughout the organization. It was a goal of CERN's since its members were located in a number of countries.

The initial project proposal outlined a simple system of using networked *hypertext* to transmit documents and communicate in the physics community. Hypertext is basically the same as regular text – it can be stored, read, searched or edited – with an important exception: hypertext contains connections with the text to other documents.

Although the early WWW system had as its goal the advancement of science and education, it is revolutionizing many elements of society, including commerce, politics, and literature.

Nobody owns the World Wide Web. People are responsible for the documents they author and make available publicly on the Web. Via the Internet hundreds of thousands of people around the world are making information available from their homes, schools, Universities, and workplaces.

Hypermedia combines hypertext and multimedia.

To find the necessary information over the Internet you must use a *browser.* The browser is a program which can send requests for documents to any *Web server.* A Web server is a program that, upon receipt of a request, sends the document requested back to the requesting client. Because the task of document storage is left to the server and the task of document presentation is left to the client, each program can concentrate on those duties and progress independently of each other.

Here is an example of how the process works:

1. Running a browser, the user selects a hyperlink in a piece of hypertext connecting to another document; e.g. it is «The History of Computers».
2. The browser uses the address associated with that hyperlink to connect to the Web server at a specified network address and asks for the document associated with «The History of Computers».
3. The server responds by sending the text and any other media within that text (pictures, sounds, or movies) to the browser, which it renders on the users screen.

The World-Wide Web is composed of thousands of these virtual transactions taking place per hour throughout the world, creating a web of information flow.

HTTP (HyperText Transfer Protocol) is the language that Web browsers and servers use to communicate with each other. HTTP defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands.

The other main standard that controls how the World-Wide Web works is *HTML* (HyperText Mark-up Language), which covers how Web pages are formatted and displayed. Every browser has the built-in ability to understand HTML.

The World-Wide Web uses what are called Uniform Resources Locators (URLs) to represent hypermedia links and links to network services within HTML documents. It's possible to represent nearly any file or service on the Internet with a URL.

The first part of the URL (before the two slashes) specifies the method of access.

The second part is the address of the computer where the data or service is located. Further parts specify the names of files, the port to connect to, or the text to search for in a database.

A URL is always a single unbroken line with no space.

Sites that run World-Wide Web servers are typically named with a *www* at the beginning of the network address:

file://www.eit.com/picture.gif

It retrieves a picture and displays it.

ftp://www.xerox.com/pub/file.txt

It opens an *FTP* (File Transfer Protocol) connection to www.xerox.com and retrieves a text file.

Search Engines help you to locate documents containing specific titles, words or phrases. There are at least four good search engines: *Altavista, Hotbot, Lycos,* and *Yahoo.*

2. Exercises

1. *Read and translate the text.*
2. *Check up your understanding. Give full answers.*

1. What is the Internet?
2. What does it mean computer network?
3. Which types of network do you know?
4. Why do we need modem?
5. What are the «duties» of server?
6. What kind of computers are used as servers?
7. What can you tell about the roots of the Internet?
8. Which services provides the Internet?
9. Which of the internet services do you prefer to use mostly?
10. Does the Internet help you in your study or work? How?
11. What does it mean WWW?
12. Why was the hypertext developed?
13. What is the difference between hypertext and hypermedia?
14. Browser ... Is it necessary? Why?
15. What kind of searcher engine do you like to use?
16. What does it mean URL?
17. Have you got the Internet friends? Who are they?
18. Once it was said:

The internet is similar to supercomputer. Both consist of computer tied together. The difference is that computers on the Internet are loosely tied together while those within a supercomputer are tightly tied together.

Philip Emeagwali

Do you agree with this statement? Be so kind as to give full answer.

1. What does the FTP provide?
2. What does the domain name of the computer mean?

3. *Retell the text briefly using the fallowing expressions and terms:*

LAN, WAN, WWW, the Internet, browser, server, the roots of the Internet, address, URL, search engine, modem, network, hypertext, hypermedia.

4. *What's missing? If you are in doubt refer to the text. Take it into account that in each item the first letter of the missed word is used.*

1. N.... is a group of computers that can i.... by means of a shared communication link.
2. M.... converts digital data b.... and f.... to use with phone line.
3. In the b.... research was the main g.... of the network.
4. A server is either a w.... or a m.... because it will be expected to handle much more loads than ordinary desktop system.
5. Many people connected to the Internet and the large m.... were home connections.
6. With the help of the Internet you can communicate with a group of persons s..... .
7. If you are going to send a message write down the word «m....» before the address.
8. The m.... of computation and communication is making e.... changes to day-to-day business activities.
9. The project o.... the system of using networked hypertext.
10. The WWW is composed of thousands of virtual t..... .

5. Rearrange the words and get the right sentences.

1. information / to communicate / and / share / want / people /
2. plugged / is/it / your / computer / must / modem / outside / and / be / external / into /
3. of / an / explosion / direct / to/the / later / Internet / occurs / connections /
4. businesses / and / small / homes / were / many / of / connected /
5. from / you / send / or / massages / can / anyone / on / the Internet / receive /
6. never / there / address / between / the / blank / components / is / of / the / space /
7. are / as / tools / seen / indispensable / computers / today /
8. people / are / information / the Internet / making / via/available /
9. information / helps / to find / necessary / browser /
10. ventures / a network / participate / over / joint / can / assembled / an/engineer /

6. Supply the preposition if one is missing.

1. A device that allows computers to communicate .... ordinary phones lines is called modem.
2. External modem must be plugged .... a computer.
3. ARPANET was created .... research .... networking.
4. Their work was centered around the problem – how to keep military sites .... communication .... the country .... the event of a nuclear war.
5. .... The beginning research was their main goal.
6. Many of small businesses were connected .... The Internet.
7. The File Transfer Protocol provides .... the copying of files .... one computer .... another.
8. The sub-domain «edu» tells that the computer is located .... educational institution.
9. WWW stands .... world wide web.
10. People are making information available .... Their homes.

7. *There are two words in each item. You must explain how is «a» like «b» and how does «a» differ from «b».*

1. (a) LAN, (b) WAN
2. (a) internal modem, (b) external modem
3. (a) server, (b) desktop system
4. (a) the Internet, (b) WWW
5. (a) computer name, (b) domain name
6. (a) domain name, (b) sub-domain name
7. (a) address, (b) mail address
8. (a) hypertext, (b) hypermedia
9. (a) browser, (b) server
10. (a) HTTP, (b) HTML.

8. *Give the opposites of the following words.*

1. external; 2. beginning; 3. connection; 4. available; 5. indispensable; 6. find; 7. combine; 8. send; 9. leave; 10. independently; 11. remote.

9. *Give the synonyms of the following words.*

1. research; 2. render; 3. project; 4. type; 5. purpose; 6. inform; 7. many; 8. share; 9. own; 10. concentrate.

10. *What verbs precede these words?*

1. modem; 2. the Internet; 3. information; 4. address; 5. project; 6. team; 7. country; 8. browser; 9. history; 10. data.

11. *Translate into English.*

1. Сначала основной целью интернета являлись исследования.
2. Корни интернета уходят к 1969 г.
3. Модем является сокращением слов модулятор и демодулятор.
4. Через интернет можно получать или посылать письма или просто общаться.
5. Интернет позволяет быстро находить любую интересующую вас информацию.

6. Несмотря на то, что на ранней стадии Web имел своей целью развитие науки и образования, позже он приобрел существенное значение для бизнеса.
7. Для нахождения необходимой информации в интернете следует пользоваться специальной программой, которая называется «браузер».
8. Сервером называется компьютер, обслуживающий всю сеть.
9. Web-сервером называется программа, которая по получении запроса отсылает клиенту затребованный документ.
10. Для соединения с клиентом необходимо знание его адреса.

12. *Are you up to giving a right explanation?*
Look for a statement or put your own idea in oral frame.

Useful information

Do you know what's the difference between **in time**, **in good time**, *and* **on time**? *Try to understand:*

Teacher: You are late, Tom.
Tom: But I tried to come in time.
Teacher: If you had tried to come in time you would have come at least on time. So, tomorrow you must try coming in good time.

In time means «early enough»; **in good time** *means «with a comfortable margin»;* **on time** *means «at the time arranged, not earlier, not later».*
As you see **try** *can be followed either by infinitive or by gerund.*
Depending on it, this verb has two different meanings:
Try + infinitive *means «make an effort, attempt»;*
Try + gerund *means «make the experiment» (see the above dialogue).*
The same situation happens with the verb **like**, *namely:*
Like + infinitive *often means «think right or wise»;*
Like + gerund *means «enjoy».*
For example:

My friend likes to upgrade his computer at least once a year

means that he thinks it's right to upgrade computer.

My friend likes upgrading his computer

means that he enjoys to upgrade his computer.
Well, suppose you are an ignorant «freshman» who does not know all the peculiarities given above, and somebody says to you:

I like to go to the dentist sometimes.

No doubt you would imagine that this person is a bit off his head (mad), though this statement means that the person thinks it's right to go to the dentist.

I don't like to do smth *usually means «I don't do because I think it's not right to do». But* I don't like doing smth *means «I do although I don't enjoy it».*

Now you see you got really useful information.

3. Vocabulary training

1. *Identification of words*

Match the words in the left-hand column with their equivalents in the right-hand column:

1. access	1. the act of receiving
2. communicate	2. far away in time or place
3. convert	3. give; translate; perform
4. estimate	4. ask
5. goal	5. close and careful scientific study
6. handle	6. the base of anything; a source; the underground part of a tree
7. indispensable	7. a man-made object fired into space to orbit a planet
8. local	8. look over in order to find smth
9. majority	9. divide out among a number of people
10. mixture	10. happening or done at the same time
11. outline	11. constant
12. own	12. combine or join together

13.receipt	13. right or means of entry
14. remote	14. tell, make known
15. render	15. change (from one thing into another)
16. request	16. judge roughly the size, value etc of smth
17. research	17. anything aimed at
18. root	18. manage, cope with of a plant
19. satellite	19. necessary
20. search	20. of or confined to a certain place
21. share	21. the greater number or quantity
22. simultaneous	22. smth made by combining different things
23. steady	23. line(s) showing a things shape
24. merge	24. have a possession

2. Useful expressions

Invent sentences using the following expressions and words:

Share information; communicate over phone lines; plug into; center around the problem; direct connections; with the help of; refer to; is located at; put down; indispensable tool(s) for; joint venture; be responsible for; locate document(s); find information over the Internet.

3. Reading comprehension

Read the text, try to understand the topic, look for the logical sequence of the items and put them in the proper order. The first item is in the right position.

1. Search engines as Altavista and Hotbot claim that they have indexed the contents of tens of millions of web pages. How can they do this?

2. Resource discovery is perhaps the most exciting application of web robots. It means that rather than relying solely on browsing, a Web user can combine browsing and searching to locate information.

3. A Web robot is a program that traverses the Web's hypertext structure by retrieving a document, and recursively retrieving all documents that are referenced. Such programs are

sometimes called «spiders», «web anderers», or «web worms».

4. Even if the database doesn't contain the exact item you want to retrieve, it is likely to contain references to related pages, which in turn may reference the target item.
5. Web robots can be used for statistical analysis (e.g., to count the number of Web servers), for maintenance (e.g., to detect deal links), and for resource discovery (e.g., summarize large segments of the web).

4. Each sentence contains a word that is wrong.
Correct these mistakes and than refer to the text.

1. At the end of the 20th century an explosion of indirect connections to the Internet occurred.
2. At the beginning research was the main goal of the Internet.
3. A lot of people connected to the Internet and the large minority were home connections.
4. Computers are dispensable tools for computation, typing, and communications.
5. Engineers can share results between the geographically dispersed team members.
6. People are irresponsible for the documents they author and make available publicity on the Web.
7. If you are willing to find unnecessary information over the Internet you must use browser.
8. A Web server is a program that, before receipt of a request, sends the document requested back.
9. Every browser has the guilt-in ability to understand the HTTP.
10. Search Engines help you to dislocate documents.

5. Fill the gaps with the appropriate word. Then refer to the text.

1. External modem is outside your computer and must be .... into it.

2. Modem .... digital data back and forth for use with analog phone line.
3. A .... is either a workstation or a mainframe because it handles far greater loads than ordinary desktop.
4. With the help of .... you can send or receive electronic messages from anyone on the Internet.
5. The .... of computation and communications is making essential changes to business activities.
6. .... Is used to find the necessary information on the Internet.
7. .... combines hypertext and multimedia.

6. *Give the explanation to the following acronyms and abbreviations (p. 223 will help you):*

LAN	WAN
MODEM	WWW
FTP	HTTP
HTML	URL

4. A bit of reading practice

The World Wide Web

The World Wide Web is a system of Internet servers that supports hypertext to access several Internet protocols on a single interface.

Almost every protocol type available on the Internet is accessible on the Web. *Internet protocols* are sets of rules that allow for intermachine communication on the Internet. The following major protocols are accessible on the Web:

E-mail (Simple Mail Transport Protocol or SMTP) Distributes electronic messages and files to one or more electronic mailboxes.

Telnet (Telnet Protocol) Facilitates login to a computer host to execute commands.

FTP (File Transfer Protocol) Transfers text or binary files between an FTP server and client.

Usenet (Network News Transfer Protocol or NNTP)

Distributes Usenet news articles derived from topical discussions on newsgroups.

HTTP (HyperText Transfer Protocol) transmits hyptertext over networks.

Other protocols are also available on the Web e.g., the Voice over Internet Protocol (VoIP) allows users to place a telephone call over the Web. The World Wide Web provides a single interface for accessing all these protocols.

This creates a convenient and user-friendly environment. It is not necessary to be conversant in these protocols within separate, command-level environments. The Web gathers these protocols into a system and is the fastest-growing component of the Internet (taking into account its ability to work with multimedia and advanced programming languages).

Hypertext. The operation of the Web relies primarily on hypertext as its means of information retrieval. HyperText is a document containing words that connect to other documents. These words are called links and are selectable by the user. A single hypertext document can contain links to many documents. In the context of the Web, words or graphics may serve as links to other documents, images, video, and sound. Hence, the WWW contains a complex virtual web of connections among a huge amount of documents, graphics, videos, and sounds.

Producing hypertext for the Web is accomplished by creating documents with a language called HyperText Markup Language, or HTML. With HTML, tags are placed within the text to accomplish document formatting, visual features such as font size, italics and bold, and the creation of hypertext links. Graphics may also be incorporated into an HTML document. HTML is an evolving language, with new tags being added as each upgrade of the language is developed and released.

Pages on the Web. The World Wide Web consists of files, called *pages* or *Web pages*, containing information and links to resources throughout the Internet.

Web pages can be created by user activity. For example, if you visit a Web search engine and enter keywords on the topic of your choice, a page will be created containing the results of your search.

Access to Web pages may be accomplished by:

1. Entering an Internet address and retrieving a page directly.
2. Browsing through pages and selecting links to move from one page to another.
3. Searching through subject directories linked to organized collections of Web pages.
4. Entering a search statement at a search engine to retrieve pages on the topic of your choice.

The URL, retrieving documents on the Web. URL stands for Uniform Resource Locator. The URL specifies the Internet address of a file stored on a host computer connected to the Internet. Every file on the Internet, no matter what its access protocol, has a unique URL. Web software programs use the URL to retrieve the file from the host computer and the directory in which it resides. This file is then displayed on the user's Monitor.

URLs are translated into numeric addresses using the Internet Domain Name System (DNS). The numeric address is actually the «real» URL. The URL *structure.*

This is the format of the URL:

protocol: //host/path/filename

For example, this is a URL on the home page of the House Committee on Agriculture of the U.S. House of Representatives:

http://www.house.gov/agriculture/schedule.htm

This URL is typical of addresses hosted in domains in the United States. Structure of this URL:

1. Protocol: **http**
2. Host computer name: **www**
3. Second-level domain name: **house**
4. Top-level domain name: **gov**
5. Directory name: **agrictulture**

6. File name: schedule.htm

Web browsers. To access the World Wide Web, you must use a Web browser. A browser is a software program that allows users to access and navigate the World Wide Web. There are two types of browsers:

1. *Graphical:* Text, images, audio, and video are retrievable through a graphical software program such as Netscape Navigator and Internet Explorer. Navigation is accomplished by pointing and clicking with a mouse on highlighted words and graphics.
2. *Text:* Lynx is a browser that provides access to the Web in text-only mode. Navigation is accomplished by highlighting emphasized words in the screen with the arrow up and down keys, and then pressing the forward arrow (or Enter) key to follow the link.

Plug-ins extend the browser. Software programs may be configured to a Web browser in order to enhance its capabilities. When the browser encounters a sound, image or video file, it hands off the data to other programs, called *plug-ins*, to run or display the file. Working with plug-ins, browsers can offer a seamless multimedia experience.

File formats requiring plug-ins are known as *MIME types* (Multimedia Internet Mail Extension). The basic MIME type handled by Web browsers is text / html associated with the file extension.html.

A common plug-in utilized on the Web is the *Adobe Acrobat Reader.* The Acrobat Reader allows you to view documents created in Adobe's *Portable Document Format (PDF).* These documents are the MIME type application / pdf and are associated with the file extension .pdf. When the Acrobat Reader has been configured to your browser, the program will open and display the file requested when you click on a hyperlinked file name with the suffix.pdf.

Web browsers are often standardized with a small suite of plug-ins, especially for playing multimedia content. Once a plug-

in is configured to your browser, it will automatically launch when you choose to access a file type that it uses.

ActiveX is a technology developed by Microsoft which may make plug-ins less necessary. ActiveX offers the opportunity to embed animated objects, data, and computer code on Web pages. A web browser supporting ActiveX can render most items encountered on a Web page. For example, Active X allows users to view three-dimensional VRML worlds in a Web browser without the use of a VRML plug-in. As another example of the power of ActiveX, this technology can allow you to view and edit PowerPoint presentations directly within your Web browser. ActiveX works best with Microsoft's Internet Explorer browser.

Today's World Wide Web presents an ever-diversified experience of multimedia, programming languages, and real-time communication. There is no question that it is a challenge to keep up with the rapid pace of developments. The following presents a brief description of some of the more important trends to watch.

Multimedia

The Web has become a broadcast medium. It is possible to listen to audio and video over the Web, both pre-recorded and live. For example, you can visit the sites of various news organizations and view the same videos shown on the nightly television news. Several plug-ins are available for viewing these videos. For example, Apple's Quick Time Player downloads files with the .mov extension and displays these as «movies» in a small window on your computer screen. Quick Time files can be quite large, and it may take patience to wait for the entire movie to download into your computer before you can view it.

The problem of slow download times has been answered by a revolutionary development in multimedia capability: streaming media. In this case, audio or video files are played as they are downloading, or streaming, into your computer. Only a small wait, called buffering, is necessary before the file begins to play. The _RealPlayer_ plug-in plays streaming audio and video files. Extensive files such as interviews, speeches and hearings work

very well with the RealPlayer. The RealPlayer is also ideal for the broadcast of real-time events. These may include press conferences, live radio and television broadcasts, concerts, etc. The Windows Media Player is another streaming media player.

Shockwave presents another multimedia experience. Shockwave allows for the creation and implementation of an entire multimedia display combining graphics, animation and sound.

Sound files, including music, may also be heard on the Web. It is not uncommon to visit a Web page and hear background music. Sound files are also available for downloading independent of Web page visits. Sound files of many types are supported by the Web with the appropriate plug-ins. The MP3 file format, and the choice of supporting plug-ins, is the latest music trend to sweep the Web. The famous Napster site allows for the exchange of MP3 files.

Live cams are another aspect of the multimedia experience available on the Web. Live cams are video cameras that send their data in real time to a Web server. These cams may appear in all kinds of locations, both serious and whimsical: an office, on top of a building, a scenic locale, a special event, and so on.

Programming languages and functions

The use of existing and new programming languages have extended the capabilities of the Web What follows is a basic guide to a group of the more common languages and functions in use on the Web today.

CGI, Active Server Pages: CGI (**Common Gateway Interface**) refers to a specification by which programs can communicate with a Web server. A *CGI* program, or script, is any program designed to accept and return data that conforms to the CGI specification. A common use for a CGI script is to process an interactive form on a Web page. For example, you might fill out a form ordering a book through Interlibrary Loan. The script processes your information and sends it to a designated e-mail address in the Interlibrary Loan department.

Another type of dynamically generated Web page is called **Active Server Pages (ASP).** Developed by Microsoft, ASPs are

HTML pages that include scripting and create interactive Web server applications. The scripts run on the server, rather than on the Web browser, to generate the HTML pages sent to browsers. _Visual Basic_ and _JScript_ (a subset of JavaScript) are often used for the scripting. ASPs end in the file extension.asp.

Java / Java Applets: Java is probably the most famous of the programming languages of the Web. Java is an object-oriented programming language similar to C++. Developed by Sun Microsystems, the aim of Java is to create programs that will be platform independent. The Java motto is, «Write once, run anywhere». A perfect Java program should work equally well on a PC, Macintosh, Unix, and so on, without any additional programming.

Web-based Java applications are usually in the form of **Java applets**. These are small Java programs called from an HTML page that can be downloaded from a Web server and run on a Java-compatible Web browser. A few examples include live newsfeeds, moving images with sound, calculators, charts and spreadsheets, and interactive visual displays.

JavaScript / JScript: JavaScript is a programming language created by Netscape Communications. Small programs written in this language are embedded within an HTML page, or called externally from the page, to enhance the page's the functionality. Examples of JavaScript include moving tickers, drop-down menus, real-time calendars and clocks, and mouse-over interactions. JScript is a similar language developed by Microsoft and works with the company's Internet Explorer browser.

VRML: VRML (_Virtual Reality Modeling Language_) allows for the creation of three-dimensional worlds. These may be linked from Web pages and displayed with a VRML viewer. Netscape Communicator comes with the Cosmo viewer for experiencing these 3d-worlds.

XML: XML (eXtensible _Markup_ Language) is a Web page creation language that enables designers to create their own customized tags to provide functionality not available with HTML. XML is a language of data structure and exchange, and allows developers to separate form from content. At present, this language is little used as Web browsers are only beginning to support it.

Real-Time Communication

Text, audio and video communication can occur in real time on the Web. This capability allows people to conference and collaborate in real time.

Chat programs allow multiple users to type to each other in real time. *Internet Relay Chat* and *America Online's Instant Messenger* are prime examples of this type of programs.

More enhanced real-time communication offers an audio and / or video component. *CU-See Me* is one of the most popular software programs of this type. Even more elaborate are programs that allow for true **real-time collaboration**. Featured collaboration tools include:

- **audio:** conduct a telephone conversation on the Web;
- **video:** view your audience;
- **file transfer:** send files back and forth among participants;
- **chat:** type in real time;
- **whiteboard:** draw, mark up, and save images;
- **document/application sharing:** view and use a program on;
- another's desktop machine;
- **collaborative Web browsing:** visit Web pages together.

Push: Push refers to a technology that sends data to a program without the program's request. This is the opposite of the typical «pull» of the Web, in which the user clicks on a link to request a file from a server. With push, the data is sent automatically. Content is sent through a «channel». The early Web-based implementation of push was commercial. Push can also be used to deliver software upgrades to a desktop machine.

Let's discuss

1. Do you like to work on the Internet? Why?
2. Which search engine do you prefer to use? Why?
3. What do you like most about your internet activity?
4. What were (are) your major frustrations in your internet activity?
5. What are your most frequently recurring internet problems?
6. How would you advise someone:

a To seek a job with the help of the Internet?
b To make friends with the help of the Internet?
c To look for some scientific information on the Internet?
d To take part in a chat with a nice company?

7. Suppose your best friend has bought a computer and is dreaming of the Internet but doesn't know how to go about it. Share with him your experience.
8. Suppose you are working for an internet company and want to enhance the number of your clients. Make up an advertisement.

5. Relax a bit

I give myself sometimes admirable advice, but I'm incapable of taking it.

M.W. Montagu

A celebrity is a person who works hard all his life to be known, then wears dark glasses to avoid being recognized.

F. Allan

Inject a few raisins of conversation into the tasteless dough of existence.

O. Henry

The city is not a concrete jungle.
It is a human zoo.

D. Morris

Parking

«Tell me», said the policeman, «why did you park here»?

The driver answered respectfully, «Because, you see, here is a sign 'Fine for parking'».

Boxing

Old Tom was telling his grandson, Jack, about his days as a Golden Gloves contestant.

Tom: The bell rang and we met in the center of the ring. First he threw a left cross, then a right cross.
Jack: And what happened then?
Tom: Then came a Red Cross. But by the third round I had my opponent worried.
Jack: Really?!
Tom: You bet. He thought he killed me.

I've had three wives, six children, six grandchildren, and I still don't understand women.

John Wayne

Men don't understand anything about women and women understand nothing about men. And it's better that way.

Vittorio Gassman

I prefer the company of women. I'm buzzed by the female mystique.

Cuddling

Cuddling in the front seat of the car, Tom asked his date, «You don't shrink from kissing, do you?» Judy replied, «If I did, I'd be awfully small by now».

Confession

«Becky», said the bedridden man. «I can't die without telling you how rotten I have been. I stole one million bucks from the company, made an additional million by selling secrets to our competitors, and what's more I fired the accountant since I knew he was your lover».

«Don't worry about that», sighed Becky, «I'm the one who poisoned you».

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Risk

> *Living at risk is jumping off the cliff and building your wings on the way down.*
>
> *Ray Bradbury*

> *They who lose today may win tomorrow.*
>
> *Miguel De Cervantes*

> *And the trouble is, if you don't risk anything, you risk even more.*
>
> *Erica Jong*

Doubt

> *The trouble with the world is that the stupid are cocksure* and the intelligent full of doubt.*
>
> *B. Russel*

*cocksure – very self-confident

Minidictionary

State-of-the-art – Any computer you can't afford.

Obsolete – Any computer you own.

Floppy – The state of your wallet after purchasing your computer.

Microseconds – The time it takes for your state-of the art computer to become obsolete.

Keyboard – The standard way to generate computer errors. An advanced input device to make computer errors easier to generate.

Mail

A blonde went to her mail box many times. Her neighbor noticed it. «Are you waiting for a special delivery?» asked he. «No», she replied «my computer keeps telling I have a mail».

Hard work

The businessman came home absolutely exhausted. «My dear», asked his wife, «you must have had a hard day». «It was terrible», answered her husband, «our computer broke down and we had to do our own thinking».

If Restaurants Function Like Microsoft

Characters: Client, Waiter Bill

Client: Waiter!
Waiter: Hi, my name is Bill, and I'll be your Support Waiter. What's the problem?
Client: There is a fly in my soup!
Waiter: Be so kind as to try again. Maybe the fly won't be there this time.
Client: No, it's still there.
Waiter: Maybe it's the way you're using the soup. Try eating it with a fork instead.
Client: I did but fly is still there.
Waiter: Maybe the soup is incompatible with the bowl? What kind of bowl are you using?
Client: A soup bowl!
Waiter: That should work. Maybe it's a configuration problem; how was the bowl set up?
Client: You brought it to me on a saucer; what has that to do with the fly in my soup?!
Waiter: Can you remember everything you did before you noticed the fly in your soup?
Client: I set down and ordered the Soup of the Day!
Waiter: Have you considered upgrading to the latest Soup of the Day?
Client: Yes, I changed my chair and spoon! Be so kind as to bring me my soup.
Waiter *(leaves and returns with another bowl of soup):*
        Here you are, Sir.

Client: Thanks, *(looking into the bowl)* ... waiter! There is a gnat
          in my soup!

Millionaires

1

   Before Christmas a millionaire with his wife walked into an
art gallery. They bought twelve Dalis, four Van Goghs, and seven
Turners. «Well», said the millionaire after they left the gallery,
«that takes care of the Christmas cards. Now let's do the serious
shopping».

2

   Mr. Smith was showing off his estate to his date. «Here I
have three swimming pools. The first one is filled with cold water
for my friends who like to swim in cold water. The other one is
filled with warm water for those of my friends who like to swim in
warm water». The lady was extremely expressed, but the third
pool was empty and it stirred up the curiosity of the young wom-
an. «Darling», she said, «but why this one is empty»? «Because»,
answered Mr. Smith, «not all of my friends like to swim».

Parents

1

Father: Jack, you are a pig! Do you know what a pig is?!
Jack: Yes, Dad. It's a son of a hog.

2

Father to his son: How dare you disobey your mother?! Do you
                     think you are better than I am?!

3

Sam: Dad I'm late for football match. Please, do my homework.
Dad: It wouldn't be right, Sammy.
Sam: That's OK! At least you could try.

Restaurant

«Waiter!» shouted the angry client. «This meal isn't fit for a pig!»
«I'm sorry», replied the waiter, «I'll change it and bring you one that is».

Economists

> *Give me a one-handed economist! All my economists*
> *say, «On the one hand ... on the other».*
> > H. Truman

Life

> *Life is something to do when you can't get to sleep.*
> > F. Lebowitz

Literature

> *The greatest masterpiece in literature is only a dictionary out of order.*
> > J. Cocteau

Men and women

> *I don't know why women want any of the things men have when one of the things that women have is men.*
> > C. Chanel

> *The great question ... which I have not been able to answer, despite my thirty years of research into the feminine soul, is «What does a woman want»?*
> > S. Freud

Trouble

> *Never trouble trouble till trouble troubles you.*
> > Anonymous

Doctors

> *Doctors are just the same as lawyers; the only difference is that lawyers merely rob you, whereas doctors rob and kill you.*
>
> *A. Chekhov*

> *A physician is one who pours drugs of which he knows little into a body of which he knows less.*
>
> *Voltaire*

Diplomats

> *A diplomat is a person who can tell you to go to hell in such a way that you actually look forward to the trip.*
>
> *Napoleon I*

> *To jaw-jaw is better than to war-war.*
>
> *W. Cherchill*

Final Test

All the words in the list below are taken from the texts of this book. Several meanings are given for each of them. Find out the only one appropriate. Go ahead. e. g.: 4a.

1

1. *Network:*

a making a net;
b fishing;
c a system of linked PC.

2. *Spellchecker:*

a an editor;
b a program that corrects spelling;
c a proofreader.

3. *Platform:*

a a surface for passengers at a railway station;
b a raised floor for speakers;
c a computer family (CPU, OS type etc.).

4. *File:*

a an amount of computer data held under a single name;
b a loose-leaf book to hold papers;
c a line of soldiers.

5. *Directory:*

a director's office;
b a named group of files;
c a book of names.

6. *Slave:*

a someone forced to work for an owner;
b someone who works very hard;
c a device under control of a computer.

7. *Scratch:*
a   rub with the nails;
b   erase data;
c   tear with claws.

8. *Add-in:*
a   components that can be added to a computer;
b   inclusion;
c   insertion.

9. *Back up:*
a   make additional copies of data to protect them from disaster;
b   insert;
c   go backwards.

10. *Bit:*
a   a small piece of smth;
b   the smallest unit of information;
c   a small tool for boring.

11. *Slot:*
a   a rectangular opening for connection;
b   a small narrow opening;
c   a position.

12. *Port:*
a   a strong sweet dark-red wine;
b   a harbor;
c   an external connection.

13. *Confuser:*
a   box;
b   a person that is confused;
c   a person that confuses smb.

14. *Bug:*
a   An error in a computer program;
b   a small insect;
c   a tiny hidden microphone for recording conversations.

15. *Compression:*

a   pad to stop bleeding;
b   smth that presses together;
c   the process of packing data.

2

For every italicized expression pick out the right meaning, e.g. 1c.

1. *A spell-checker program:*

a   a program that belongs to a person who checks the spelling;
b   a person who checks the spelling with the help of a certain program;
c   a computer program that checks the spelling.

2. *To feel at the machines mercy:*

a   to be in the power of computers;
b   to feel that computers show mercy to you;
c   to depend completely upon computers.

3. *To hit the road:*

a   to pave the road;
b   to go or drive away;
c   to make the road harder.

4. *A collection of chips in your car:*

a   you keep in your car a set of small pieces of smth;
b   you keep in your car a number of things that have been collected;
c   a set of semiconductor circuits in your car.

5. *To take stock of:*

a   to take goods from the shop or warehouse;
b   to estimate;
c   to buy a share.

6. **To back up (computer term):**

a   to move up backwards;
b   to help, support;
c   to save copies of documents.

7. **a throwaway commodity:**

a   an article that has been thrown away;
b   article that's good for nothing;
c   a rider that fell to the ground from the horse.

8. **A stopwatch:**

a   a watch that usually stops;
b   a watch that has broken down;
c   a watch that can be started and stopped.

9. **Every now and then:**

a   now and later;
b   from time to time;
c   now and after certain time.

10. **Take for granted:**

a   assume without checking;
b   receive smth as a present;
c   allow smth asked for.

11. **Hit the books:**

a   prepare for classes;
b   throw away the books;
c   come across several books of interest.

12. **Back number:**

a   an old number of a magazine;
b   an old-fashioned person;
c   an old number of a newspaper.

13. **Throw in the towel:**

a   through the towel in a washing machine;

b   surrender;
c   throw the towel into a dustbin.

14. *Have a face as long as a fiddle*:

a   extremely long face;
b   an ugly muzzle;
c   look very depressed, sad.

15. *Keep up with the times*:

a   not to hesitate;
b   not to be late;
c   to be progressive.

16. *Grant a wish*:

a   give, allow smth asked for;
b   admit a wish;
c   ask smth.

17. *Set in stone opinion*:

a   a carved in stone statement;
b   opinion that can not be changed;
c   ancient inscription.

18. *Blind alley*:

a   an alley for blind people;
b   a tunnel without electricity;
c   a course of action which has no useful result in the end.

19. *The tide turns*:

a   the rise of the sea increases;
b   things change for the better;
c   the rise of the sea stops.

20. *Out of date*:

a   forget the date;
b   miss the date;
c   not modern.

21. **Get the picture:**

a   understand;
b   buy a picture;
c   photograph.

22. **Save much trouble:**

a   collect much trouble;
b   put by much trouble;
c   avoid much trouble.

23. **Run information:**

a   inform quickly;
b   urgent information;
c   control information.

24. **Jump at the chance:**

a   have a chance to jump;
b   do not lose an opportunity;
c   risk.

25. **Have a word with you:**

a   have an agreement with you;
b   promise;
c   want to speak to you.

3

Supply the words asked in the clues. The first one has been done:

1. A 13-letter noun beginning with *M* and ending with *R* that describes the smallest machine used in business. Answer: *microcomputer.*

2. An 8-letter noun beginning with *H* and ending with *E* that describes the mechanical, electrical, and electronic components of a computer.

3. A 9-letter noun beginning with *M* and ending with *E* that describes a computer which can service several hundred users simultaneously.
4. A 10-letters noun beginning with *W* and ending with *R* that describes a large capacity permanent storage.
5. An 8-letters noun beginning with *S* and ending with *E* that describes a product created by programmers.
6. A 6-letters noun beginning with *L* and ending with *P* that describes a small transportable computer.
7. A 11-letters noun beginning with *M* and ending with *D* that describes the main circuit board of the computer.
8. A 7-letters noun beginning with S and ending with R that describes a device which is used for copying pictures and texts.
9. A 4-letters noun beginning with *S* and ending with *T* that describes a rectangular opening inside a computer into which can be inserted different devices, e.g. motherboard etc.
10. An 8-letters noun (slang) beginning with A and ending with E that means a program used to protect a computer from viruses.
11. A 5-letters verb (slang) beginning with *D* and ending with *G* that is used when someone is eliminating an error or flow.
12. A 4-letter verb (slang) beginning with *H* and ending with *K* that means to work on a computer with great affinity and adeptness.
13. An 8-letters noun beginning with *C* and ending with *R* that describes a device that performs calculations and other symbol-manipulation tasks.

4

The clues in A have answers in B. Find and match them. E.g.: 1-16.

A

1. A software offered users before buying, so they can determine if it meets their needs.
2. A program that provides for the copying of files from one computer to another.

3. A program designed not to run on its own but work in cooperation with another program to increase its application abilities.
4. An industry standard that allows computer peripherals to be automatically configured by the OS.
5. A device in a computer to transfer data to, and control the operations of other devices like modem, printer etc.
6. A device used to input data into a computer.
7. A set of instructions used by a computer to communicate with peripheral devices.
8. A program that helps you find the necessary information over the Internet.
9. A process in which the program code developed by programmer is translated into code that computer can understand.
10. A «built-in» code that works independently of the OS and controls the keyboard and other parts of the computer.
11. A program that, upon receipt of a request, sends the document requested back to the requesting client.
12. A temporary holding place reserved in memory.
13. A program that helps you to locate on the Internet documents containing specific titles, words or phrases.
14. A video display.
15. A network of local area networks connected together.
16. Anything visually displayed on a computer that is not text.
17. A language that Web browsers and servers use to communicate with each other.
18. A computer designed to provide various devices for an entire network.
19. A program that controls the operating of the computer and acts as an interface between the actual machine and different software applications.
20. A small image on a display screen that, in conjunction with a mouse, select and executes program functions.
21. A device that helps smooth out its input power source.
22. Software that expands the performance of the OS. It inspects diskettes for damage, file conversion, defragmenting, etc.

23. Starting up an OS.
24. A device that reads data and writes data onto a disc.
25. Software that is distributed to users free of charge.

B

1. BIOS, 2. browser, 3. buffer, 4. controller, 5. disc drive, 6. driver, 7. freeware, 8. plug-in, 9. graphics, 10. HTTP, 11. icon, 12. keyboard, 13. OS, 14. search engine, 15. server, 16. shareware, 17. monitor, 18. UPS, 19. utility, 20. FTP, 21. booting, 22. WAN, 23. Web server, 24. plug and play, 25. compile.

5

Choose the verb from the list below which best complete the sentence.
Some verbs may be used more than once.

Be; bring; brush; carry; come; make; plug; shell; butter; cut, compensate, catch, stand; switch; take; talk; fall, wear, calm.

1. Would you .... in the computer? Now .... it on.
2. Tom .... out the calculations without visible effort.
3. Your scanner is good for nothing; it's absolutely .... out.
4. You are so upset. What .... up?
5. Sam .... in for a shock. His computer has broken down.
6. For such a nice box Mr. Smith would .... out a lot of money.
7. Be persistent and all your dreams will .... true.
8. .... by, Jim and be ready to help. I'm going to upgrade my computer.
9. I can't .... up what has happened with my OS.
10. .... this subject over with Bill. He is a real hacker and will help you .... .
11. Bill has .... to the Internet and I'm afraid pretty soon he will .... all his classes away.
12. .... down and don't worry. There's no bug in your computer.
13. Why don't you .... your boyfriend around to see us?
14. I'm afraid she has .... up with bad company.

15. Jim says he cant .... up with his work.
16. Sam knows how to .... for lost time.
17. You must .... down your expenses. Otherwise you wouldn't buy a new car.
18. Mary always .... up her boss; she thinks that's the shortest way to promotion.
19. We .... in with Tom's plans concerning buying a new printer.
20. You had better drive faster; the others are .... up quickly.

6

Substitute the given below idioms and expressions for the italicized sentences, expressions and words. Take care that the sense remains unaltered.

A

A child prodigy, answer the bell, back number, be beyond my reach, , be eager, be frustrated, I'm at your disposal, be out of date, be under the weather, brand new, dead duck.

1. If you don't keep up with the times people will call you *an old fashioned person.*
2. Open the door, Tom, the bell is ringing.
3. This computer is too expensive; *I can't acquire it.*
4. If you want to upgrade your computer *I'll help you.*
5. Your program *isn't modern;* you must buy a new one.
6. I'm sorry, I *feel myself not too good* and can't go with you for a walk.
7. Come round and have a look at my box. It's absolutely modern!
8. Tom *wants very much* to install a new multimedia program.
9. Ann dreamed of being a movie star but became a teacher; she *is not satisfied with it.*
10. Sam suggested to open a new supermarket, but his boss said that this idea is *going to fail* because there is no demand for one in this region.

11. John is extremely good at math and Mary thinks that he is *astonishingly clever.*

B

   Fail exams, go through it from cover to cover, hit the books, how did you come to it?
   I can't say for certain, I don't know how to go about it, , in under an hour, be set in stone, it leaves me cold, keep it in mind, make up your mind, on second thought, your face is as long as the fiddle, be bread and butter.

1. Jane said that her new job provides her with enough money to live.
2. Sam is absolutely lazy; he won't pass exams.
3. You have a sad look on your face. What happened?
4. John never changes his decisions. His opinion is impossible to change.
5. Believe me, this book is very useful. You must read it carefully.
6. We thought that the assignment was very difficult, but John did it in less than 60 minutes.
7. I am not sure but I think the weather is going to be worse.
8. Your idea is absolutely excellent! How did you figure it out?
9. This film is not interesting.
10. You must remember it because it is very important.
11. Don't hesitate! You must decide something!
12. I know what to do but I don't understand how to do.
13. I'm sorry, I can't go to the party with you; I must study hard.
14. Thinking it over again I accept your proposal.

Keys to exercises

UNIT 1

4

1 into; 2 at; 3 to, on; 4 of, from; 5 on; 6 with; 7 into; 8 for; 9 in, away; 10 by; 11 on, of; 12 back to, apart; 13 to, from, in; 1. on, from, to; 15 into; 16 in; 17 for; 18 of, for; 19 to; 20 into.

5

1. With the help of computers we can tame a host of many incurables.
2. Large electronic data-bases allow companies to check ticket availability.
3. You don't need to stand in line.
4. A computer validates the card in a few seconds.
5. A collection of chips in your car controls spark plug system.
6. The technology complex keeps growing more.
7. Every now and then it is worthwhile to think positive of computers.
8. As a boy I always wanted a stopwatch but never had a money for one.
9. A wrong spell-checker program corrects a right word into a wrong one.
10. Squeeze a button and it will turn into a stopwatch.

6

Runway (2), availability (1), pump (3), line (4), back (5), access (9), cinical (6), alarm (10), teller (7), ominous (8).

8

1 succeed; 2 early; 3 wrong (left); 4 simple; 5 negative; 6 similar; 7 scientifically; 8 stand up; 9 unlucky; 10 forget; 11 save; 12 find (win); 13 sell; 14 give; 15 doubt; 16 lock; 17 prohibit; 18 lie.

9

1 correct; 2 incorrect; 3 fortunate; 4 to alter; 5 queue; 6 journey; 7 cost; 8 to waste; 9 general, public; 10 to say, to recount; 11 to occur; 12 to purchase; 13 plan; 14 to return.

10

Example: a computer – buy, upgrade, work, present, sell, etc.

11

1 the, the; 2 the, a, – ; 3 a, – ; 4 – ,the, the; 5 a, the, a, the, the; 6 – , – , the; 7 – , a, a; 8 a, a, a; 9 a, a, a, the; 10 a, the; 11 a, – , – , – , a, a, the, – ; 12 the; 13 a, the, a; 14 an; 15 the, the, – , – , – ; 16 an, the, the.

Fairly, rather

(в некоторых случаях возможны альтернативные варианты)
1 fairly, rather; 2 fairly, rather; 3 rather; 4 rather; 5 rather; 6 rather; 7 fairly; 8 fairly, rather; 9 fairly; 10 fairly; 11 fairly; 12 rather; 13 rather; 14 rather.

Vocabulary training

1. *Match the words with their definitions:*

1-21; 2-13; 3-19; 4-20; 5-18; 6-17; 7-8; 8-15; 9-10; 10-5; 11-12; 12-4; 13-2; 14-7; 15-3; 16-1; 17-11; 18-9; 19-14; 20-6; 21-16.

3. **Reading comprehension**

1; 3; 2; 5; 4.

UNIT 2

4

1 of; 2 in, at, at; 3 for; 4 by; 5 on, into; 6 out; 7 to; 8 off; 9 on; 10 to; 11 by; 12 at; 13 into, with; 14 from; 15 of, in, with; 16 without, for; 17 with, out of; 18 up, for; 19 about.

5

1. Mainframe can service several hundred users.
2. Software includes a collection of programs.
3. Scanners are used for copying texts and pictures.
4. A computer can't be without CPU and computer memory.
5. A byte usually contains eight bits.
6. Several peripheral devices can be attached to a computer.
7. Volatile memory stores data while the computer is switched on.

6

Software (1); processing (5); gweeps (7);scanner (3); pixel (4); hardware (2);bug (6).

8

1 revive; 2 early; 3 simple; 4 negative; 5 stand; 6 destroy; 7 earn; 8 expensive; 9 go forward; 10 common; 11 disconnect; 12 impossible; 13 small; 14 constant; 15 internal memory; 16 inflexible, rigid; 17 loose; 18 informal; 19native; 20 unlucky.

9

1 turn on; 2 direct; 3 carry out; 4 provide for; 5 aim; 6 regulate; 7 join; 8 do; 9 invent; 10 include; 11 situate; 12 revolve.

10

1 bug-free; 2 antidote; 3 artware; 4 DDT; 5 hacker, box; 6 gweeps.

11

1 – ; 2 the, a, the; 3 the, the – ; 4 a , – , the; 5 – , the, a; 6 the, – , the, the; 7 – , the, a; 8 – , the; 9 a; 10 the; 11 a, the, – , the; 12 a, the.

Vocabulary training

1. Identification of words

1-5; 2-24; 3-17; 4-2; 5-22; 6-10; 7-9; 8-18; 9-16; 10-6; 11-15; 12-14; 13-8; 14-12; 15-11; 16-20; 17-19; 18-13; 19-3; 20-7; 21-25; 22-4; 23-23; 24-1; 25-21.

3. Reading comprehension

1; 3; 5; 4; 2.

4. Computer terms in use

1-4; 2-14; 3-7; 4-8; 5-3; 6-1; 7-5; 8-9; 9-2; 10-11; 11-10; 12-13; 13-12; 14-6.

UNIT 3

4

1 about; 2 in; 3 in; 4 by, of; 5 by, over, in; 6 at, in, in; 7 to, of, in; 8 out; 9 in, by, in; 10 in, of; 11 over, for, of; 12 through, of, in; 13 in; 14 during.

5

1. The first multy-purpose computing device was never completed.
2. The mashine was more of an electronic calculator.
3. Nobody knows who deserves the credit for this idea.
4. The instructions are stored in the same medium as data.
5. The second generation saw the first supercomputers.
6. The memory was large enough to hold the instructions and data.
7. The first electronic machines were useful in applied science.
8. The firs programs were written out in the machine code.
9. In the beginning software technology was very primitive.
10. Programs known as assemblers performed the translation task.

6

Computing (1); calculator (1); computers (2); technology (3); contribution (4); magnitude (5); medium (6); slow (7).

8

1 follow; 2 analogous; 3 disappear; 4 calculator; 5 degradation; 6 ignorance; 7 narrow; 8 be incapable; 9 unreliable; 10 separate; 11 incomplete; 12 lose; 13 close; 14 start; 15 internal; 16 slower; 17 small; 18 old; 19 be unable 20 powerless.

9

1 development; 2 computer; 3 build; 4 greater; 5 requirement; 6 common; 7 establish; 8 finished; 9 modernize; 10 focus; 11 be alike.

10

1 the; 2 the; 3 a, the, the; 4 a; 5 the, the; 6 the, the; 7 the; 8 the; 9 – , the, the, the, a, the; 10 the, the.

14

DO and MAKE
1 do; 2 make; 3 do; 4 make; 5 done; 6 made; 7 make; 8 make; 9 making; 10 did; 11 do, do.

3. Vocabulary training

1. *Identification of words*

   2-7; 3-1; 4-2; 5-6; 6-11; 7-8; 8-10; 9-12; 10-3; 11-5; 12-4; 13-14; 14-13.

2. *Reading comprehension*

   1-4-6-3-5-2.

4. **Computer terms in use**

   1-4; 2-10; 3-8; 4-1; 5-7; 6-5; 7-9; 8-2; 9-3; 10-6.

UNIT 4

4

1 discrepancy; 2 networks; 3 processor, memory; 4 market; 5 vector processing; 6 transistors; 7 network; 8 computer, microprocessors; 9 transistors; 10 microchip capacity; 11 computational power; 12 crammed; 13 computer; 14 software, interface.

5

1. The largest machine had 128 processors.
2. Each processor had its own local memory.
3. Transitions between generations in computer technology are hard to define.
4. Network technology is becoming very widespread.
5. A microprocessor is fabricated on a surface of a thin silicon layer.
6. Scientists are looking for some possible alternatives.
7. Atoms are working together to serve as computer memory and microprocessors.

6

1 to; 2 for; 3 on, to; 4 in; 5 for; 6 on; 7 from, to; 8 on; 9 in; 10 for; 11 into.

8

1 slow; 2 complicated; 3 start; 4 lose; 5 remain; 6 regress; 7 decrease; 8 past; 9 discord; 10 fantasy; 11 disconnection.

9

1 integrated circuit; 2 purpose; 3 plan; 4 separate; 5 finish; 6 construct; 7 get; 8 do; 9 broad; 10 change into; 11 transparent.

11

1 the, – , an; 2 – ,the, the, the; 3 the, 4 the, – ; 5 the; 6 – , – , – ; 7 an; 8 a, a, a; 9 – , – ; 10 the, the, the.

Vocabulary training

1

1-7; 2-14; 3-12; 4-5; 5-13; 6-10; 7-8; 8-2; 9-1; 10-11; 11-6; 12-4; 13-9; 14-3.

3

1-5-3-2-4-6.

4

1-11; 2-4; 3-5; 4-1; 5-10; 6-8; 7-9; 8-7; 9-2; 10-6; 11-12; 12-13;13-3.

Verb study practice

1

1 backed him up; 2 comes round; 3 buttering up; 4 ran into; 5 are in for; 6 come true; 7 is up to, cut down; 8 gave in; 9 helping me over; 10 found out.

2

1 on (along, _am._); 2 on, out; 3 in; 4 out; 5 true; 6 up; 7 down; 8 in; 9 on; 10 into; 11 over; 12 to; 13 up; 14 off; 15 by; 16 at; 17 down; 18 against; 19 in; 20 round; 21 round; 22 over.

3

1 in for; 2 come true; 3 shell out; 4 did his best, gave in; 5 take it easy; 6 knows it from A to Z; 7 the game isn't worth the candle; 8 drop in.

UNIT 5

4

1 simplify; 2 prototype; 3 over; 4 Free On-Line; 5 instructions; 6 supercomputer, founded; 7 goal; 8 peak; 9 primary; 10 qualitative; 11 slightly; 12 radical; 13 furthering; 14 personal.

5

1. The young man planned to begin a graduate school.
2. Supercomputer is a broad term for the fastest computer.
3. Various events shrank the size of supercomputer market.
4. Cray was never interested in company management.
5. It was the fastest computer in the world.
6. The speed of processors is increasing all the time.
7. The company has no plans to sell the device in the immediate future.
8. Supercomputers were designed and built to work on very large jobs.

6

1 in; 2 by; 3 in; 4 in; 5 on; 6 on; 7 in; 8 for; 9 to, by; 10 to; 11 on; 12 out of, of; 13 into, to; 14 to.

8

1 fail; 2 exclude; 3 pull; 4 repair; 5 disuse; 6 complicate; 7 old; 8 similar; 9 found; 10 decrease; 11 come, arrive; 12 few.

9

1 search; 2 speak; 3 colleague; 4 revolve; 5 show; 6 be able; 7 carry out; 8 road; 9 advertise; 10 enlarge.

11

1 a, the, a, a; 2 the, the, the, the, the; 3 the, the; 4 a, – ; 5 the; 6 the, the; 7 the, the,an; 8 a, a, the, a; 9 the, the, the, an; 10 the, the.

Vocabulary training

1

1-8; 2-10; 3-9; 4-11; 5-20; 6-17; 7-18; 8-5; 9-7; 10-13; 11-12; 12-3; 13-6; 14-5; 15-14; 16-1; 17-16; 18-19; 19-4; 20-2.

3

5; 3; 4; 2; 6.

4

    1-5; 2-3; 3-2; 4-8; 5-6; 6-4; 7-1; 8-7.

UNIT 6

4

    1 input data; 2 interfere, data; 3 binary digit; 4controls; 5 high level language, assembly; 6 operating system, process; 7 performance; 8 marketability; 9 free, charge; 10 apps.

5

1. Computer circuits can be in two states.
2. It was necessary to develop software into a more user-friendly format.
3. It inspired programmers to develop more software.
4. Software written on one computer could be used on another.
5. Operating system can activate other programs.
6. Programmers jumped at the chance to write application software.
7. One reason for its success was that it integrated three applications.
8. Word processing programs were capable of more than manipulating words.

6

    1 on; 2 on; 3 in; 4 to; 5 for; 6 in; 7 by; 8 for; 9 on, out of; 10 in; 11 into.

8

    1 output; 2 slowly; 3 old; 4 empty; 5 miss; 6 external; 7 unspecific; 8 join; 9 low; 10 dependent; 11 incompetent; 12 consumer; 13 subtract; 14 extract; 15 lately; 16 impossible.

9

1 contemporary; 2 agree to; 3 understand; 4 enlarge; 5 limit; 6 ordinary; 7 quickly; 8 different; 9 specific; 10 mistake; 11 remember; 12 payment; 13 qualified; 14 complete.

11

1 at first; 2 contemporary; 3 understood; 4 tremendous; 5 encouraged; 6 desire, increase; 7 payment; 8 appear in, did not lose the opportunity; 9 deal with errors and problems; 10 did not cease, increase; 11 examined carefully and select.

Vocabulary training

1

1-11; 2-8; 3-1; 4-12; 5-2; 6-3; 7-4; 8-10; 9-6; 10-9; 11-5; 12-7.

2

1-5; 2-4; 3-1; 4-2;5-7; 6-8; 7-3; 8-6.

4

1-6-3-2-4-5.

5

1-5; 2-6; 3-10; 4-1; 5-11; 6-3; 7-2; 8-12; 9-4; 10-5; 11-6; 12-10.

UNIT 7

4

1 network, interact; 2 modem, back, forth; 3 beginning, goal; 4 workstation, mainframe; 5 majority; 6 simultaneously; 7 mail; 8 merging, essential; 9 outlined; 10 transactions.

5

1. People want to communicate and share information.
2. External modem is outside your computer and must be plugged into it.
3. An explosion of direct connections to the Internet occurs.
4. Many of small businesses and homes were connected.
5. You can send or receive messages from anyone on the Internet.

6. There is never blank space between the components of the Internet address.
7. Today computers are seen as indispensable tools.
8. Via the Internet people are making information available. Browser helps to find nesessary information.
9. An engineer can participate joint ventures assembled over a network.

6

1 over; 2 into; 3 for, in; 4 in, across, in; 5 in; 6 to; 7 for, from, to; 8 at; 9 for; 10 at.

8

1 internal; 2 in the end; 3 disconnection; 4 unavailable; 5 dispensable; 6 lose; 7 separate; 8 receive; 9 arrive; 10 dependently; 11 close, near.

9

1 investigation; 2 perform; 3 plan; 4 kind; 5 goal; 6 tell; 7 a lot of; 8 divide; 9 possess; 10 focus.

Vocabulary training

1

1-13; 2-14; 3-15; 4-16; 5-17; 6-18; 7-19; 8-20; 9-21; 10-22; 11-23; 12-24; 13-1; 14-2; 15-3; 16-4; 17-5; 18-6; 19-7; 20-8; 21-9; 22-10; 23-11; 24-12.

3

1-3-5-2-4.

4

1 indirect – direct; 2 at – in; 3 minority – majority; 4 dispensable – indispensable; 5 between – among; 6 irresponsible – responsible; 7 unnecessary – necessary; 8 before – upon (after); 9 guilt in – built in; 10 dislocate – locate.

5

1 plugged; 2 converts; 3 server; 4 mail; 5 merging; 6 browser; 7 hypermidia.

FINAL TEST

1

  1c; 2b; 3c; 4a; 5b; 6c; 7b; 8a; 9a; 10b; 11a; 12c; 13a; 14a; 15c.

2

  1c; 2c; 3b; 4c; 5b; 6c; 7b; 8c; 9b; 10a; 11a; 12b; 13b; 14c; 15c; 16a; 17b; 18c; 19b; 20c; 21a; 22c, 23c; 24b; 25c.

3

  1 microcomputer; 2 hardware; 3 mainframe; 4 winchester; 5 software; 6 laptop; 7 motherboard; 8 scanner; 9 slot; 10 antidote; 11 debug; 12 hack; 13 calculator.

4

  1 shareware; 2 FTP; 3 utility; 4 plug and play; 5 controller; 6 keyboard; 7 driver; 8 search engine; 9 compile; 10 BIOS; 11 web server; 12 buffer; 13 browser; 14 monitor; 15 WAN; 16 graphics; 17 HTTP; 18 server; 19 OS; 20 icon; 21 UPS; 22 plug-in; 23 booting; 24 disc drive; 25 freeware.

5

  1 plug, switch; 2 carries out; 3 worn; 4 is; 5 is; 6 shell; 7 come; 8 stand; 9 make; 10 talk; 11 taken, brush; 12 calm; 13 bring; 14 taken; 15 catch; 16 compensate; 17 cut; 18 butters; 19 are; 20 catching.

6

A

  1 a back number; 2 answer the bell; 3 it is beyond my reach; 4 I'm at your disposal; 5 is out of date; 6 am under the weather; 7 brand new; 8 is eager; 9 is frustrated; 10 dead duck; 11 a child prodigy.

B

  1 is bread and butter; 2 fail; 3 your face is as long as a fiddle; 4 is set in stone; 5 go through it from cover to cover; 6 in under an hour; 7 I can't say for certain; 8 how did you come to it; 9 leaves me cold; 10 keep it in mind; 11 make up your mind; 12 I don't know how to go about it; 13 hit the books; 14 on second thought.

Acronym Practice

The Internet Chat World.
E-mail and Online Chat Acronyms

Acronym, a word formed from the initial letters or groups of letters in a set phrase , as W AC from Women's Army Corp.

**Webster's Encyclopedic Unabridged Dictionary
of the English Language.**

2U2	To you too
AAMOF	As a matter of fact
AFAIK	As far as I know
AFK	Away from keyboard
AKA	Also known as
ASAP	As soon as possible
ASL	Age, sex, location?
ASLP	Age, sex, location, picture?
BAK	Back at keyboard
B4	Before
BBIAB	Be back in a bit
BBL	Be back later
BBN	Bye bye now
BBS	Be back soon
BEG	Big evil grin
BF	Boyfriend
B4N	Bye for now
BFN	Bye for now
BC	Be cool
BOF	Birds of feather (an informal discussion group)
BOT	Back on topic
BRH	Be right here

BRB	Be right back
BTDT	Been there, done that
BTW	By the way
BWL	Bursting with laughter
C&G	Chuckle and grin
CID	Crying in disgrace
CMIIW	Correct me if I am wrong
CNP	Continued in my next post
CU	See you
CUS	See you soon
CP	Chat post (a chat message)
CRBT	Crying real big tears
CSG	Chuckle snicker grin
CUL	Catch you later
CUL8R	See you later
CWOT	Complete waist of time
CYA	See ya
DH	Dear hubby
DIY	Do it yourself
DLTBBB	Don't let the bad bugs bite
DW	Dear wife
DYS	Describe yourself
EAK	Eating at keyboard
EG	Evil grin
EME	E-mail me
EMSG	E-mail message
EMU	E-mail you
EOD	End of discussion
EOL	End of lecture
F	Female
FAQ	Frequently asked question
FC	Finger crossed

FCOL	For crying out loud!
FOCL	Falling of the chair laughing
FTBOMH	From the bottom of my heart
F2F	Face to face
FOFL	Falling on the floor laughing
FUD	Fear, uncertainty and doubt or disinformation
FWIW	For what it's worth
FYI	For your information
G	Grin
G2G	Gotta go
GA	Go ahead
GAL	Get a life
GAS	Greetings and salutations
GD&R	Grinning, ducking & running (after a snide remark)
GF	Girlfriend
GFN	Gone for now
GG	Good game
GJ	Good job
GL	Good luck
GM	Good move, match
GMTA	Great minds think alike
GN	Good night
GTSY, G2CY	Glad to see you
HAG1	Have a good one
HAGD	Have a good day
HAGN	Have a good night
HAHA	Have a heart attack
H&K	Hugs and kisses
HHIS	Hanging head in shame
HF	Have fun

HOAS	Hold on a second
HTH	Hope this helps
HW	Hardware
IAC	In any case
IAE	In any event
IAGW	In a good way
IANAL	I am not a lawyer
IAT	In addition to
IC	I see
IDGI	I don't get it
IDK	I don't know
IIRC	If I remember correctly
IK	I know
IKWUM	I know what you mean
IMAO	In my arrogant opinion
IMCO	In my considered opinion
IMHO	In my humble opinion
IMNSHO	In my not so humble opinion
IMO	In my opinion
IOW	In other words
IRL	In real life
IS	I'm sorry
IOW	In other words
ITL	I totally agree
IWALU	I will always love you
IYHO	In your humble opinion
IYKWIM	If you know what I mean
IYKWIMAITYD	If you know what I mean and I think you do
IYOO	In your own opinion
JJ	Just joking
JMHO	Just my humble opinion

JMO	Just my opinion
JTLYK	Just to let you know
JK	Just kidding
JP	Just playing
K	OK
KIT	Keep in touch
KOC	Kiss on cheek
KOL	Kiss on lips
KWIM	Know what I mean?
L	Laugh
L8R	Later
LHM	Lord help me
LHU	Lord help us
LMAO	Laughing my a... off
LMBO	Laughing my butt off
LMHO	Laughing my head off
LMK	Let me know
LMSO	Laughing my socks off
LOL	Laughing out loud
LSHIPIMP	Laughing so hard I peed in my pants
LSHMBIB	Laughing so hard my belly is bouncing
LSHMBH	Laughing so hard my belly hurts
LSHTTARDML	Laughing so hard the tears are running down my leg
LTMS	Laughing to myself
LTNS	Long time no see
LTR	Long term relationship
LTS	Laughing to self
LYWAMH	Love you with all my heart
LY	Love ya
LYK	Let you know
M	Male

MHOTY	My hat off to you
MTF	More to follow
MYOB	Mind your own business
N	In
NATD	Not a darn thing
NETUA	Nobody ever tells us anything
N2M	Not too much
NM	Never mind, Not much
NMH	Not much here
NMJC	Nothing much, just chilling
NOYB	None of your business
NP	No problem
NRN	No reply necessary
OBTW	Oh, by the way
OIC	Oh, I see
OL	Old lady
OM	Old man
OMG	Oh, my gosh
OOTB	Out of the box (brand new)
OT	Off topic; other topic
OTTOMH	Off the top of my head
POOF	I have left the chat
PDS	Please, do not shoot
PEKUSH	Press every key until something happens
PLZ	Please
PMP	Peeing in my pants
PITA	Pain in the a...
PM	Private message
PMJI (or PMFJI)	Pardon me (for) jumping in (to join a running discussion politely)
PMP	Peed my pants
POAHF	Put on a happy face

POV	Point of view
PPL	People
QT	Cutie
ROFLAPMP	Rolling on the floor laughing and peeing my pants
ROFLAU	Rolling on the floor laughing at you
ROFLAMAOAY	Rolling on the floor laughing my a... off at you
ROFLMAOWTIME	Rolling on the floor laughing my a... off with tears in my eyes
ROFLUTS	Rolling on the floor laughing unable to speak
ROTFL	Rolling on the floor laughing
ROTFLMAO	Rolling on the floor laughing my a... off
ROTFLWTIME	Rolling on the floor laughing with tears in my eyes
ROTFSWL	Rolling on the floor screaming with laughter
RSN	Real soon now
RSF	Read the facts
RT	Real time
RTM	Read the manual
RUM	Are you married?
RUS	Are you single?
S	Smile
SCNR	Sorry, could not resist
SETE	Smiling ear to ear
SHID	Slaps head in disgust
SITD	Still in the dark
SNAFU	Situation normal, all fouled up
SNERT	Snot-nosed egoistical rude teenager
SO	Significant other

SOHF	Sense of humor failure
SOT	Short of time
SOTMG	Short of time must go
SPAM	Stupid person's
SWAK	Sealed with a kiss
SWALK	Sweet, with all love, kisses
SWAS	Scientific wild a... guess
SWL	Screaming with laughter
SYS	See you soon
TCO	Taken care of
THX, TNX	Thanks
TIA	Thanks in advance
TMA	Take my advice
TTFN	Ta ta for now
TTYL	Talk to you later
TY	Thank you
TYVM	Thank you very much
Y2	You too
UR	Your
W8	Wait
WAG	Wild a... guess
W8AM	Wait a minute
WB	Welcome back; write back
WE	Whatever
WNDITWB	We never did it this way before
WRT	With regard to
WTG	Way to go!
Y	WHY?
YMMV	Your mileage may vary
YW	You are welcome
?	Please, explain
?4U	Question for you

These CUAs *(commonly used acronyms) do not cover all the versions of the Internet chat. Just try to understand how they are formed.*

Vocabulary

A

aberration	помутнение рассудка; заблуждение
acceptance	принятие
access	доступ
accessibility	доступность
accessories	принадлежности
accidentally	случайно
accommodate	приспосабливаться
accomplish	выполнить
accord	согласие
accost	приставать
account for	объяснять
accountant	бухгалтер
accounting	бухгалтерский учет; анализ хозяйственной деятельности
accuracy	точность
achieve	достигать
acquire	приобретать
acquisition	приобретение
activity	деятельность
actual	действительный
adapt	приспособиться
adapter	устройство сопряжения
addition	сложение
address	адрес; номер ячейки памяти
adequate	достаточный
adhere	прилипать
adjective	прилагательное
admirable	похвальный
admire	восхищаться

admit	признавать(ся)
advance	развиваться
advantage	преимущество
advent	приход, появление
advisable	желательно
advocate	выступать за; сторонник
affect	влиять
affinity	родство, сходство
afford	позволить себе
affordable	доступный
aftermath	плохие результаты
agile	проворный
agglomeration	скопление
aikin	похожий
aim	целиться, цель
air	выставлять; воздух
albeit	хотя
alert	бдительный
algorithm	алгоритм
alienate	отчуждать
align	выравнивать
alimony	алименты
allegedly	якобы
allocate	распределять, выделять
allocation	распределение; выделение
alternative	альтернатива
amazing	удивительный
ambition	честолюбие
ambitious	честолюбивый
amplifier	усилитель
analog	аналоговый
annotation	аннотация
announcement	объявление; заявление

annoy	раздражать
annually	ежегодно
apparent	очевидный, видимый
appealing	привлекательный
applet	мини-программа; мини-приложение
appliance	прибор
application	приложение
approach	приближение, подход
appropriate	подходящий; присваивать
approximately	приблизительно
arcade	аркада, сводчатая галерея
ardent	горячий
area	область
argument	довод, спор
arm	оружие
artificial	искусственный
artist	художник
ascertain	установить
assemble	собирать(ся)
assert	утверждать
associate with	быть связанным с
astonish	удивлять
atrophy	атрофироваться
attach	прилагать, присоединять
attempt	попытка
attend	посещать
attendant	сопровождающий
audience	аудитория
audiovisual	аудиовизуальный
augment	увеличивать
autonomous	автономный
auxiliary	вспомогательный
availability	доступность

available	доступный
average	средний
avoid	избегать
awful	ужасный
axiom	аксиома; утверждение, не требующее доказательств

B

back	поддерживать
back up	поддерживать; резервировать копии
backfired	неправильный
background	фон
backup	поддержка; резервирование копий
balance	подводить итог
ballistics	баллистика
ban	запрещать; запрет
bandwidth	ширина полосы; (зд.) объем
banking	банковское дело
basic	базовый
basics	основы
bay	место в корпусе для устройств считывания и записи информации
be in	быть дома, в офисе
be in for	быть обреченным на
be off	отсутствовать; удерживаться от; испортиться
be out	выходить; отсутствовать
be out of	не иметь чего-либо
be up to	быть готовым что-либо сделать
beam	луч
beast	животное
bedridden	прикованный к постели
benchmark	база
bet	делать ставку, спорить

bid	предлагать
binary	двоичный
bit	единица двоичной информации
blaze	пылать, вспыхивать
bless	благословлять
blink	мигать
blockhead	болван, тупица
blow up	взрывать, надувать
bludgeon	вынуждать
bold	жирный
bonus	премия
boost	содействие; увеличивать
boot	загрузка компьютера
bottom-up	снизу вверх
box	*(слэнг)* компьютер
brain	мозг
branch	ветвь
branch out	разветвляться
brand	марка
breadth	ширина
break into	проникнуть в помещение со взломом
breakthrough	прорыв
breed	порода
brick	кирпич
brief	краткий, короткий
brilliance	великолепие
bring round	принести (привести) с собой
broadcast	вещать
browse	просматривать файлы, директории и т.д.
browser	браузер, программа для работы с гипертекстами
brush away	отбросить, отмести
buck	доллар *(сленг)*
buck up	улучшать, доработать

budding	развивающийся
buddy	парень, друг
budget	бюджет
buffering	создание в памяти компьютера области для накопления данных
bug	ошибка (в программе)
build into	встроить, включать
built in	встроенный
bulb	лампа
bulk	большая часть
bulky	громоздкий
bump	удар
bundle	связывать
burden	ноша, бремя
bus	шина
butter up	льстить, подлизываться
button	кнопка
buzz	шептать
byte	байт, единица памяти, обычно содержащая 8 бит

C

cable	кабель
call in	заскочить
calm down	успокаиваться
cam	камера
camp	лагерь
cancer	рак
capability	способность
capable	способный
capacitor	конденсатор
capacity	производительность; производственная мощность; емкость
capture	сохранение данных

carry out	выполнять
cart	привезти
cash	наличные
cache	вспомогательная память
casual	случайный
catch up	поспевать
cause	являться причиной
cave	пещера
cellular	клеточный
center	сосредоточивать
chairman	председатель
challenge	интересный (но трудный) вопрос
character	буква, число, символ, пунктуация
charge	заряд
chart	карта, график
cheat	обманывать
check	проверять
chess	шахматы
chimney	дымоход, труба
chip	чип, микросхема в одном кристалле
chipset	набор микросхем
choke	душить, задыхаться
chronicle	летопись, хроника
circuit	схема
civil	гражданский
clearance	разрешение, допуск
click	щелкать
cliff	утес
clipboard	буфер обмена; карман-область основной памяти для временного хранения данных
clothing	одежда
clout	влияние

clumsy	неуклюжий
cluster	собираться
code	код
coffin	гроб
cognitive	познавательный
cognizant	осведомленный
coin	чеканить
collaborate	сотрудничать
collapse	рухнуть
colloquial	разговорный
colorful	красочный
column	колонка
combat	бой; бороться
combine	совмещать
combined	совместимый
come across	сталкиваться
come down	падать
come on	прогрессировать, появляться, продолжаться
come over	придти
come round	зайти
come up	появляться, случаться
commandeer	реквизировать
commit	совершать, обязываться
commitment	обязательство
commodity	товар
commonplace	банальный
communicate	общаться
communication	связь, общение
comparative	*грам.* сравнительная (степень)
compatibility	конкурентоспособность
compatible	совместимый
compel	заставлять

compelling	принудительный
compensate for	компенсировать
competition	конкуренция
competitor	конкурент
compile	составлять
compiler	компилятор
complement	дополнять
complement	дополнять
complementary	комплементарный
complementor	дополняющий фактор
complete	завершать
complexity	сложность
complicated	сложный
compose of	состоять
compound	сложный
comprehensive	всеобъемлющий
compression	сжатие
comprise	состоять
computable	вычисляемый
computational	вычислительный
concerning	касательно
concerned	озабоченный
concise	краткий
concrete	цемент, цементный
concurrent	одновременный
conduct	проводить, дирижировать
configure	конфигурировать, адаптировать
conform	подчиняться
conjunction	союз
connect up	присоединять
connectivity	связь
connector	соединитель, разъем
consequence	следствие

consistent	последовательный
consistent with	совместимый
conspire	устраивать
constitute	составлять
constrain	принуждать
consume	потреблять
consumption	потребление
contemporary	современный
contribute	содействовать
contribution	вклад
controller	контроллер
controversy	спор
conventional	обычный
converge	сходиться
convergence	сходимость
conversion	превращение, перестройка
convert	превращать
convey	передавать
cope with	справляться
cord	шнур
core	суть; сердцевина; сердечник
corporate	корпоративный
correspond	соответствовать
coterie	замкнутый круг людей
counter	идти вразрез
counterpart	соответственная часть
cover	пространный; покрывать
cradle	колыбель, (зд.) корпус
cram	впихивать, набивать
crash	выход компьютера из строя
cream	сливки
creative	творческий
creativity	творчество

credibility	доверие
credit	доверие
credit with	приписывать
cripple	расшатывать, калечить
cross-current	затруднение
crucial	очень важный, решающий
crude	грубый
cuddle	обжимать
current	текущий
currently	в настоящее время
customize	приспособить (оптимизировать программу или компьютер для нужд пользователя)
cut down	урезать, уменьшить
cybernetics	кибернетика
cycle	цикл

D

damage	повреждение
dare	сметь, отваживаться
data	данные
database	база данных
date	свидание, а также его участники
dazzling	ослепительный
deal	сделка
deal with	иметь дело с
deceive	обманывать
decimal	десятичный
decode	расшифровать, декодировать
decommission	списывание
dedicate	посвящать
dedication	посвящение
defeat	побеждать

defense	защита
defenseless	беззащитный
definable	определенный
define	определять
definition	определение
defragmenting	дефрагментация
defray	оплачивать
degrade	понижать; унижать; ухудшать
degree	степень
delight	прелесть, наслаждение
demand	спрос
demise	кончина
demodulate	демодулировать
density	плотность (информации)
deploy	развертывать
derivative	производный
descendant	потомок
desert	пустыня
deserve	заслуживать
design	проектировать
design out	разработать
designate	обозначать
desktop	настольный плоский корпус; настольный компьютер
despair	отчаяние
despite	несмотря на
detriment	ущерб
devalue	девальвировать
device	прибор, устройство
dial	набирать номер
digit	знак, цифра
digital	цифровой
dilute	разбавлять

dip	окунуть
directly	непосредственно, прямо
disadvantage	невыгодное положение
disaster	бедствие
disconnect	отсоединять
discrepancy	несоответствие
discuss over	обсудить
dismal	мрачный
disparate	несоизмеримый, несопоставимый, в корне отличный
dispensable	необязательный
disperse	рассеивать
display	дисплей, устройство для визуализации
disrupt	срывать
distinct	отчетливый
distinctive	отличительный
distort	искажать
distress	отчаяние
distribute	распределять
diverge	расходиться
diversify	разнообразить
diversity	разнообразие
divide into	разделить (на части, группы и т.д.)
division	деление
divorce	разводиться
doc	доктор
document	документировать
domain	область, владение
dominate	господствовать
donation	пожертвование
dorm	общежитие
double	удваивать(ся)
doubt	сомнение

dough	тесто
downcast	унылый
download	загружать
downsized	уменьшенная версия
downturn	спад (деловой активности)
drag	тянуть
drawback	отступать
dreadfully	ужасно
driver	драйвер, программа, обеспечивающая связь компьютера с периферийными устройствами
drop in	зайти, заскочить
drop out	выбывать
drop down	падать
drown	тонуть
drug	лекарство
dual	двойной; совместимый
dub	дублировать
dull	скучный
dumb	немой
dummy	«чайник»
dump	свалка
duty	обязанность

E

eccentric	эксцентричный; чудак
edit	редактировать
effort	усилие
egalitarian	эгалитарный, основанный на принципе равенства
elaborate	подробный; витиеватый
elation	восторг
electoral	избирательный

embark upon	предпринимать
embarrassment	смущение
embed	вставлять
embrace	обнимать; охватывать
emerge	появляться
emergence	появление
emphasis	ударение
emphasize	подчеркивать
emphasized	подчеркнутый или выделенный цветом
employ	нанимать
enable	давать возможность
encode	шифровать
encounter	случайно столкнуться
encourage	ободрять
enforcement	наблюдение
engine	двигатель
engineer	организовывать; инженер
enhance	увеличивать
enrich	обогащать
ensuing	последующий
ensure	обеспечивать
entire	весь, полный
entitle	называть
entity	объект
entrepreneur	предприниматель
entry	вход; вступление
environment	среда, (окружающая)
equip	оборудовать
equity	справедливость
era	эра
err	ошибаться
escalate	интенсифицировать; возрастать
essential	существенный

establish	устанавливать, организовывать
establishment	учреждение
estimation	оценка
etch	травить
evaluate	оценивать
evangelize	проповедовать
eventually	в конце концов
evolve	развивать
exaggerate	преувеличивать
exceed	превосходить
excellence	превосходство
excess	избыток
exchange	обмен
excitement	возбуждение,
execute	исполнять
expand	расширять(ся)
expansion	расширение
expendable	расширяемый
experience	испытание, переживание
expertise	специальные знания
explicit	прямой, явный
explode	взрываться
exploit	использовать
explosion	взрыв
explosive	взрывной
exposure	нахождение на виду
extensible	растяжимый
extension	расширение; дополнительные возможности сверх тех, что имелись в компьютере
extensively	широко
external	внешний
extract	отрывок, выдержка

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F

fab	структура
face	столкнуться лицом к лицу
facial	лицевой
facilitate	облегчать
facilities	средства
factor	обстоятельство, влияющее на развитие событий
factually	фактически, реально
fail	проваливаться, потерпеть неудачу
failure	промах, неудача
fair	честный
fall	(*амер.*) осень
fall in with	согласиться, принять (план и т.д.)
fancy	фантазия, фантазировать
favor	благоприятствовать
favorable	благоприятный
feasible	осуществимый; (зд.) подходящий
feature	признак; черта; особенность
featured	характерный
fee	взнос, гонорар
feedback	обратная связь
fetch	захватить
fever	лихорадка
field	область, поле
fierce	яростный
figure	фигура; цифра
figure out	додумываться, вычислять
file for	действовать в определенном направлении
fine	прекрасно; штраф
fire	увольнять

firewall	барьер, препятствующий внешнему доступу к компьютеру, работающему в интернете
firmware	программа, записанная в ROM
fit	подходить
fix	починять; устраивать
fix up	устроить, организовать
flaw	изъян
fledgling	неоперившийся птенец
flexible	гибкий
flood	поток
flow	поток
flowchart	карта потоков
flunk	провалить (экзамен)
focus	целенаправленность; сосредоточить
follow up	энергично преследовать
foolproof	«дуракоустойчивый»
forecast	предсказывать
forego	предшествовать
foregone	предрешенный
foresee	предвидеть
foresight	предвидение
forge	ковать; подделывать
forge into	продвинуться в...
forgo	воздерживаться
format	формат; структура документа; форматировать
former	прежний
fortune	судьба
foster	приютить; вынашивать; создавать
foul	запутывать
found	основывать
foundry	цех (литейный)

framework	остов, рамки
franchise	особое право
free	бесплатный, свободный
freeware	бесплатное программное обеспечение
frequently	часто
freshman	новичок (обычно в США так называют студентов первого курса)
frustration	разочарование
functionality	функциональность
fur	мех, меховой
further	продвигать
fuss	суета

G

gain	получать
gains	доходы
gamble	играть в азартные игры, рисковать
gap	пробел
gateway	шлюз; аппаратно-программный комплекс для соединения различных сетей
gather up	собрать вместе
gear	приспособить
generation	создание
genie	джинн
genome	ген
get by	справляться
giant	гигант(ский)
gift	дар, талант
give in	уступить
globalization	глобализация
glum	угрюмый
gnat	комар
go ahead	одобрять; продолжать

go off	портиться
go on	продолжать
go on	продолжать
go out	выключаться, гаснуть
go through	дозвониться (по телефону)
governor	губернатор
go with	сопровождать
goal	цель
goof off	увиливать, «сочковать», отлынива
gotta (got to)	должен
grab	хватать
graph	графика
grasp	схватить; понимание; хватка
gravity	притяжение
grumble	ворчать
gut (guts)	кишка, перен. мужество

H

habit	привычка
hacker	хакер
hand in	вручать
hand off	отдавать
hand over	отдавать
handful	жменя, (зд.) немного
handheld	помещающийся в руке
handle	справляться
hardware	компьютерное оборудование
headquarters	администрация
hearing	слушание; слух
help out	помочь выйти из положения
hence	следовательно
hereditary	наследственный
herewith	при этом

hire	нанимать
high-tech	высокотехнологичный
Hertz	Герц
high-end	верхний сектор (рынка)
highlight	сосредоточить внимание
hit	ударять, нажать
hog	боров
hold on	не вешайте трубку
honesty	честность
hopeful	обнадеживающий
host	хозяин
host	множество
hubby	муж *(англ.)*
huge	огромный
hype	шумное рекламирование
hyperlink	гиперсвязь
hypermedia	гипермедиа, объединение гипертекста с мультимедийными возможностями
hypertext	гипертекст (позволяет переходить от одной части документа к другой или к другим документам)

I

icon	значок на экране монитора
idiosyncratic	не адаптирующийся
idle	бездействующий, праздный
ignorance	невежество
imaging	обработка изображения
immense	огромный
impact	влияние, удар
impede	препятствовать
implement	орудие; выполнять
implementation	выполнение

implication	значение
imply	подразумевать
impose	полагать
impressive	впечатляющий
inch	дюйм
incorporate	включать, объединять
incredibly	невероятно
increment	запросить
incumbent	стоящий у власти
incurable	неизлечимый
indignantly	с негодованием
indispensable	необходимый
induce	побуждать
inevitable	неизбежный
influential	влиятельный
ingredient	составляющая
inherent	присущий
inhibit	стеснять
initial	начальный
initially	сначала
inject	вводить
injury	рана
innocuous	безвредный
input	вклад, вход, вводить
insatiable	ненасытный
insight	проницательность
inspire	вдохновлять, побуждать
install	инсталлировать
institute	устанавливать, вводить
institutionalize	устанавливать, учреждать
instruction	команда
integrate	интегрировать
integrity	целостность

intend	предназначать
intense	сильный
intention	намерение
interact	взаимодействовать
interaction	взаимодействие
interactive	интерактивный
interchangeable	взаимозаменяемый
internal	внутренний
interpreter	переводчик
interrelation	взаимосвязь
intimidate	пугать, стращать
inventive	изобретательный
inventor	изобретатель
issue	выпуск(ать); вопрос
italics	курсив
item	пункт, единица

J

jell	проясниться, густеть
jewel	драгоценный камень
jewelry	драгоценности
jog	бегать трусцой
jump off	спрыгнуть
jungle	джунгли
justify	оправдывать

K

keep back	сдерживать
keep from	удерживаться от
keep up	поспевать
keep up with	поспевать, идти в ногу с
kernel	суть, ядро (ореха)
key	ключевой, существенный

keyboard	клавиатура
kit	комплект

L

lack	недостаток, отсутствие
laggard	медленный, вялый
lamppost	фонарный столб
lantern	фонарь
laptop	переносный компьютер с автономным и сетевым питанием
large-scale	широкомасштабный
last	продолжаться
laud	хвалить
launch	выпускать; запускать программу; запуск (программы)
law	закон
layer	подложка
lay-off	увольнение
layout	план
leading-edge	новейший
lean to	быть склонным
leapfrog	чехарда; *(фиг)* перепрыгнуть через что-либо или кого-либо
lease	сдавать (в аренду)
ledger	бухгалтерская книга; реестр
legal	правовой
legitimate	законный
lessen	уменьшать
level	выравнивать
licensee	лицензиат; фирма, пользующаяся разрешением на ведение операций
light	легкий
limbs	части тела

line	линия; очередь; ассортимент; конвейер
link	соединять; звено; связь
lip-service	говорить об одном, а думать иначе
list	перечислять, список
load	нагрузка
loan	заем
local	местный
location	местоположение
lock	закрывать
login	вход в сеть; регистрация
lonely	одинокий
long	страстно желать
look up	смотреть вверх; улучшаться
looking back	оглядываясь назад; вспоминая
low-end	нижний сектор (рынка)
luck out	повезти

M

magnification	увеличение
magnitude	величина
mainframe	мощный компьютер, способный одновременно обслуживать большое количество пользователей
maintain	поддерживать
major	главный
majority	большинство
make up	придумать, составить
make up for	вспомнить, наверстать
manifest	очевидный, проявлять
margin	доходность
mark up	помечать
master	магистр
match	подходить
matrix	быть в тесной связи

mature	зрелый
maturity	зрелость
means	средства
measure	измерять, оценивать
media	средства массовой информации
(sing. medium)	
medium	среда, средство
mention	упоминать
merging	слияние
merit	заслуга, достоинство
mess	беспорядок
microcomputer	компьютер, служащий для индивидуального пользования, в малом бизнесе и т.д.
microcosm	микрокосм, что-либо миниатюрное
microsecond	микросекунда
miracle	чудо
misfortune	несчастье
mistress	любовница
mix up	смешивать, путать
mixture	смесь
modify	модифицировать
modulate	модулировать
monitor	проверять; монитор
mooch from	одалживать (обычно небольшую сумму без надежды отдать)
moron	слабоумный (ая)
mosaic	мозаичный
motherboard	материнская плата
move	перемещаться
move around	перемещать
mugger	уличный грабитель
multiple	многочисленный
multiplication	умножение

multi-purpose	многоцелевой
murmur	шепот
mutual	взаимный
myth	миф

N

narrator	рассказчик
navigation	навигация, поиск
neat	опрятный
needless	нет необходимости
net	чистый доход
network	сеть
nevertheless	тем не менее
newsfeeds	передача новостей
niche	ниша
nonetheless	тем не менее
nonsense	чепуха
nonvolatile	устойчивый
nope	нет
notable	заметный
notation	набор знаков
notion	понятие
novel	новый
numerical	численный

O

object	возражать
objective	цель
obscure	неясный
observation	наблюдение
obsolete	устарелый, вышедший из употребления
obviously	очевидно
offering	подарок, подношение

offspring	отпрыск
off-the-shelf	готовые (изделия)
ominous	зловещий
omnifont	многообразие шрифтов
ongoing	продолжающийся
online	режим соединения с компьютер
opposed to	в противоположность
option	опция, выбор
optional	необязательный, на выбор
orbit	орбита
orchard	фруктовый сад
ordnance	артиллерийский
otherwise	в противном случае
oughta (ought to)	должен (*слэнг*)
ounce	унция
outage	остановка, прекращение
outfit	снаряжать, снаряжение
outline	очерчивать, набрасывать
output	выход
outset	начало, старт
outsource	передать (изделия)
overall	общий
overcome	преодолевать
overheads	накладные расходы
overhear	подслушать
overlook	не замечать; просмотреть
overtake	обгонять
overweigh	перевешивать
own	владеть

P

pace	шаг; темп
package	пакет

pan out	получиться, «выгореть»
paradigm	образец
paralyze	парализовать
partially	частично
participate	принимать участие
particularity	особенность
partition	секционирование
partnership	товарищество
path	тропа, тропинка
path	маршрут, определяющий положение файла или директории
patience	терпение
pattern	образец, шаблон
payroll	платежная ведомость
perceive	воспринимать
perception	восприятие, понимание
perform	выполнять
performance	производительность; действие; исполнение
permanent	постоянный
persist	настаивать
persistent	настойчивый
persuade	убеждать
pervasive	распространенный
peter out	исчезать
phase out	прекратить выпуск
philander	ухаживать, волочиться
pick up	поднимать
piece	кусок
pile	груда, куча
pin	иголка, булавка
pipelining	последовательность
pit	ямка

pitfall	западня
pivotal	кардинальный
pixel	наименьший элемент изображения
plain	простой
player	участник, актер
plot	фабула
ploy	уловка
plug in	включить в розетку
plug into	вставлять
plug-in	небольшая программа, дополняющая прикладную
plummet	падать
poignant	острый
point at	указывать на
poison	отравить
poll	голосование
pool	совокупность ставок, общий фонд
port	порт, внешний разъем компьютера для подключения периферийного устройства
portability	перенос с компьютера на компьютер
portable	портативный
potent	сильный
pound	колотить
pour	наливать
power	электропитание
powerful	мощный
powerhouse	качества, обеспечивающие успех
precede	предшествовать
precise	точный
precisely	точно
preclude	предотвращать
predecessor	предшественник

predefined	предопределенный
prediction	предсказание
predominate	преобладать
preference	предпочтение
preserve	сохранять
press	нажать
pressure	давление
pretend	притворяться
prevalent	расгространенный
prevent	предотвращать
previous	предыдущий
pride	гордость
primary	важный, главный
process	обрабатывать
procurement	приобретение, закупки; материально-техническое снабжение
profit	прибыль
profound	глубокий
programmable	программируемый
prominence	известность
prominent	выдающийся
promote	продвигать на рынок, рекламировать
propel	приводить в движение
proprietary	собственный
prospect	перспектива
prosperity	процветание
protocol	протокол, правила, по которым реализуется коммуникация между компьютерами
protracted	длительный
prove	доказывать
provided	при условии
provoke	вызывать, провоцировать

proximity	близость
publicity	реклама
purchase	покупка, покупать
purge	очищать
pursue	преследовать
push out	выталкивать
put	класть; выразить
put down	записать
put on hold	задержать

Q

quotation	цитата

R

races	скачки
rack	металлическое шасси, на котором крепятся детали компьютера
raisin	изюминка
ramp	наклон, подъем
ramp up	резко поднять
random	случайный
rank	ранг, звание, классификация
rate	скорость; соотношение
realignment	переориентирование
realize	реализовать
reap	пожинать
rearrange	реорганизовать, менять местами
rebooting	перезапуск операционной системы
recall	вспоминать
receiver	телефонная трубка
recent	недавний
recession	спад
recipe	рецепт

recognition	признание, распознавание
recount	пересказывать, перечислять
recoup	возвращать
recruit	вербовать
recur	повторяться
recursively	повторно
redeploy	реорганизовывать
redundancy	более, чем необходимо; излишек
refer to	ссылаться на; обратиться к
reflect	отражать; размышлять
regain	возвратить
regarding	касательно
regardless	не обращая внимания, несмотря на
regardless of	не считаясь с
register	регистр
reiterate	повторять
rejection	отказ
related	родственный
relay	передавать, реле
release	выпускать
relentless	непрестанный
relevant	уместный, относящийся к делу
reliability	надежность
relinquish	оставлять
rely on	полагаться на
remote	удаленный
re-name	переименовать
render	исполнять
render	встречать
repair	починять
replace	заменять
replicate	повторять, копировать
representative	представитель

require	требовать
resolution	разрешение
resource	ресурс
respite	передышка
responsive	отзывчивый
restrict	ограничивать
retail	розничный
retain	удерживать
retrieve	возвращать, восстанавливать
retrospect	обозрение прошлого
reusable	используемый снова
reveal	обнаруживать
revenue	доход
reverse	изменять, отменять
revise	пересматривать
revolving	вращающийся
rewritable	перезаписывающий
rib	ребро
ribbon	лента
rigor	строгость
rigorously	строго
rival	соперник
rivalry	соперничество
rock	качаться
root	корень
rotten	отвратительный
roughly	грубо, приблизительно
round	тур
rout	маршрут; ряд
rub	тереть
rummage	рыться
rumor	слух, сплетня
run	управлять; бежать
run into	столкнуться

S

sail	ходить под парусом, плавать; парус
salient	основной
satellite	спутник
scalable	масштабируемый
scale	масштаб, шкала
scam	шов, рубец
scanner	сканер
scanning	сканирование
scarce	дефицитный, редкий
scenic	сценический
science	наука
scrap	кусочек
scrapheap	свалка
scratch	стирать данные
scream	кричать
screw around	заниматься упорно чем-либо
scribble	строчить; каракули
script	сценарий; список инструкций, позволяющих модему получить информацию
seamless	плавный переход
secure	безопасный; надежный
selectable	избирательный
semiconductor	полупроводник
senior	старший
sense	смысл
sequence	последовательность
serendipity	удача
serial	последовательный
server	сервер, компьютер, обслуживающий сеть
setting	обстановка, установка
shade	оттенок
shame	стыд

shape	придавать форму, форма
share	доля, акция; делить, разделять
shareware	программное обеспечение предоставляемое пользователю для предварительного опробования перед покупкой
shatter	разбиться; разрушать
sheer	сущий
shell	ракушка (зд.) корпус
shell out	выложить (сумму)
shift	перемещать
ship	(зд.) выпускать
shock	удар, шок
shortcoming	недостаток
shortsighted	близорукий
show in	проводить
shrink	съеживаться
shut down	выключить
sift trough	тщательно просматривать
sigh	вздыхать
significant	значительный
silicon	кремний
simplification	упрощение
simplify	упрощать
simulation	имитация, моделирование
simultaneously	одновременно
sip	пить маленькими глотками
siphon off	перскачивать
skill	мастерство
skills	навыки
skip	пропускать
skip over	перепрыгивать, миновать
skyrocket	стремительно двигаться
slash	черта

slave	устройство, управляемое компьюте-ром (принтер и т.д.)
slave away	батрачить
slight	легкий
slightly	слегка
slogan	лозунг
slot	слот, разъем на материнской плате для плат расширения
small-scale	узко масштабный
snack	закуска
snap	щелкнуть
snore	храпеть
soar	подскакивать (популярность и т.д.)
socket	разъем
software	программное обеспечение
solder	паять
sole	единственный
solely	только
solution	решение
solve	решать
sophisticated	сложный, искушенный
sort out	привести в порядок, рассортировать
sound	разумный; звук
source	источник
span	соединять
spare	обходиться
specify	(зд.) представлять
speed	скорость
spellchecker	корректор, программа для проверки ошибок в документах
spice	приправа
spike	острие, зубец; (зд.) всплеск
spoil	портить
spooling	спулинг, способ повышения произво-дительности компьютера
spouse	супруг

spreadsheet	электронная таблица
squeeze	сжать, нажать
squint	косить
squirt	бить струей, струя
staff	штат, персонал
staggering	потрясающий
stand	сопротивление
stand by	быть наготове
stand for	обозначать
standpoint	точка зрения
stare	уставиться
statement	утверждение
stay in	оставаться
stay with	останавливаться у (напр., на ночлег)
steady	постоянный
steamroller	каток
steer	управлять
steersman	рулевой
stepbrother	сводный брат
stick out	высовывать
stick with	серьезно заняться
stir up	возбуждать
stock	акция
stopwatch	секундомер
store	запасать
stream	течь; поток, ручей
strength	сила, сильная сторона
stripped-down	упрощенный
strive for	бороться за
structuring	структурирование
stunning	потрясающий
subjugate	покорять, подавлять
subsequent	последующий
substantial	значительный
subsystem	подсистема

subtask	подзадача
subtle	утонченный, тонкий
subtraction	вычитание
succeed	преуспевать
successor	преемник
sufficient	достаточный
suite	комплект
summary	выжимка, краткое изложение
supercomputer	сверхмощный компьютер, используемый для решения очень сложных задач
superior	превосходящий
superlative	*грам.* превосходная (степень)
supervise	наблюдать
surface	поверхность; обнаружиться
surf	заниматься серфингом; (зд.) скользить по
surge	волна, вздыматься; (зд.) рост
surpass	превосходить
survive	выжить, пережить
sustain	поддерживать
swap	обменивать
swear	ругаться
sweep	подметать
swift	быстрый
switch	переключить(ся)
symbiotic	взаимовыгодный
synchronize	синхронизировать

T

tag	метка; коды внутри гипертекстового файла
take away	убирать
take on	стать популярным
take to	пристраститься

take up with	подружиться
talk over	обсудить
tame	приручить
tank	баллон
tap	стучать
tape	пленка (для записи)
target	нацеливать
task	задача
team	команда
tear off	срывать
teller	кассир
template	шаблон
temporarily	временно
tend	иметь склонность
tenure	пребывание в должности
terminal	терминал
textreal	текстовый
thanksgiving	благодарность
thesaurus	сокровищница
think over	обдумать
thrash around	действовать возбужденно, беспорядочно
thread	нить
threat	угроза
three-dimensional	трехмерный
throughput	производительность
throw	бросать
thrust	стимулятор
tic	связывать
ticker (tape)	лента с новостями
tightly	тесно
timing	согласование действия, синхронность
tiny	крошечный

title	заглавие
tolerate	терпеть, терпимый
tool	инструмент, орудие
top out	быть на высшем уровне; превзойти
topic	тема
tough	трудный, жесткий
tower	корпус-башня
toy	игрушка
trace	выслеживать, прослеживать
track	прослеживать
traction	сцепление
trade off	компромисс; альтернатива, выбор
trademark	торговая марка
trail	тропинка
trailblazer	первопроходец
transfer	переносить
transmission	передача
transmit	передавать
transparent	прозрачный
trap	ловушка
traverse	пересекать
treaty	договор
tremendous	потрясающий, огромный
trend	тенденция
trickle	струйка
trigger	инициировать
troubleshooting	избавляющий от неприятностей
try on	примерять
tune	настраивать
tuning	настройка
turn in	ложиться спать
turn on	включать
tweak	щипать

twilight	сумерки

U

ultimately	в конечном счете, в конце концов
undaunted	бесстрашный, не обескураженный
underestimate	недооценивать
undergo	подвергаться
undergraduate	студент 4-го курса
understatement	преуменьшение
unfold	развертываться
unlock	открыть замок; раскрыть, расшифровать
unthinkable	немыслимый
unwieldly	громоздкий
upbringing	воспитание
update	обновление
upgrade	повышать
user	пользователь
utility	утилита, программа, помогающая решать важные частные задачи: управление файлами, дефрагментация диска, защита от вирусов и т.д.
utilize	использовать

V

validity	весомость
valley	долина
value	стоимость, оценка, величина, значение
vary	меняться
vast	огромный, обширный
vehicle	транспортное средство
vendor	продавец
venture	предприятие, мероприятие

venture into	рискнуть
versus	против
via	через
viability	жизнеспособность
view	просмотреть; взгляд; вид
violation	нарушение
virtual	виртуальный
vision	проницательность, видение
visualization	представление, видение
vital	абсолютно необходимый
volatile	непостоянный, неустойчивый
volume	объем
vying	соревнуясь

W

wafer	слой
waffle	быть между
wages	зарплата
	(сдельная или почасовая)
walnut	грецкий орех; ореховое дерево
wander	путешествовать
widespread	широко распространенный
winchester	винчестер
waterproof	водонепроницаемый
wealth	богатство
wear off	проходить, переставать
wear out	изнашивать(ся)
weather	выдерживать, подвергаться
weep	плакать
weigh	весить
wellspring	источник

wheel	руль, колесо
whimsical	причудливый, капризный
whisper	шептать
whoever	кто бы ни
witness	свидетельствовать
wide	широкий
workstation	рабочая станция
worthwhile	стоящий (того, чтоб затратить на это время)
wrap	заворачивать
wreck	разрушать
wrench	дергать; скручивать
wrist	запястье

Y

yeah, (yes)	да (разг.)
yield	выход продукции; производить

Z

zip	стандартный формат сжатия данных
zoo	зоопарк

No doubt, every serious person in his earliest salad days being a light-minded ever beautiful and ever changing toddler of about ten months old tries, first of all, to cross the threshold of misunderstanding by grasping as many new words as possible. That's the first step towards the unceasing eloquence in the nearest future. This example must inspire you to work the same way!

Your boss has a bigger vocabulary than you have.
That's one good reason why he is your boss.
A simple word can destroy a friendship, land a large order.

I. Funk, N. Lewis

Dear friend,
if you kept in mind all the words of the dictionary above, you were great!
Unfortunately it's not enough.
Hence, go through the second part of this boring chapter:

Expressions

A

a bit	немножко, чуть-чуть
a dead duck	идея, план, изделие, которые обречены на провал
a machine that is an order of magnitude more powerful	компьютер на порядок более производительный
a matter of preference	вопрос предпочтения
a red herring	факт, событие, которое вводит в заблуждение
a sequence of instructions	последовательность команд
a series of on and off patterns	(зд.) последовательность включений и выключений
absent-minded	рассеянный
according to	в соответствии с
add-on	расширение, добавление
ambitious computer	компьютер, соответствующий требованиям времени
and so on	и так далее
answer the bell	открыть дверь
application program	прикладная программа
applied science	прикладная наука
arrow up and down keys	клавиши со стрелками «вверх» и «вниз»
as a consequence	вследствие
as a matter of fact	действительно, фактически
assembly language	язык ассемблера
assembly line	линия сборки
at first glance	с первого взгляда
at the moment	в данный момент

B

back and forth	туда и обратно, вперед и назад
back number	отсталый, старомодный человек
bad luck	невезение, неудача
be accessed in random order	быть доступным в случайном порядке
be ahead of schedule	опережать расписание
be anxious	быть беспокойным
be at the mercy	быть во власти
be at your service	быть к вашим услугам
be beyond the reach	быть вне понимания, вне досягаемости
be buried in reflection	погрузиться в размышления
be convinced	быть уверенным
be depressed	быть подавленным
be distributed on a medium	быть записанным на определенном материале
be driven by circumstances	быть вынужденным благодаря обстоятельствам
be eager	очень желать
be flat on its back	лежать на лопатках
be for the better	быть к лучшему
be forced	быть вынужденным
be frustrated	быть разочарованным
be good for nothing	никуда не годиться
be in a non-core activity	не играть важной роли
be in charge of	заведовать, руководить
be in current use	быть используемым в настоящее время
be in doubt	сомневаться
be in favor of	быть в фаворе за что-либо
be jumpy	быть прерывистым, скачкообразный звук или изображение
be flat on it's back	лежать на лопатках

be made from the shelf parts	быть собранным из готовых частей
be more off	быть больше похожим на
be off one's head	сойти с ума
be old fashioned	выйти из моды
be on par	быть наравне
be out of date	устареть
be proud of	гордиться
be set in stone	быть незыблемым, неизменным
be so kind as	будьте столь любезны
be timeless	не быть привязанным ко времени
be under budget	нарушать бюджетные расходы
be under the weather	неважно себя чувствовать
be under way	быть в процессе развития
be well aligned	хорошо соответствовать
be wide spread	быть широко распространенным
be willing	иметь желание
be worth of	стоить
become outdated	устареть
big concern	большая забота
big retailers	центры розничной торговли
binary code	двоичный код
blind alley	тупик
bloody serious	чертовски серьезно
board meeting	совет директоров
brand new	совершенно новый
bread and butter	работа, которая дает достаточно денег для существования
break code	взломать шифр
break popular bench-mark scores	ломать общепринятые стандарты, понятия, уровень
break record	побить рекорд
broad based	основательный
build it yourself	сделай (построй) сам

by all means	конечно, пожалуйста
by any measure	с любой точки зрения
by far	намного
by hand	вручную

C

cache memory	КЭШ, вспомогательная оперативная память
calculated risk	рассчитанный риск
cache transaction	денежная сделка
cache register	регистр кэш-памяти
CD-ROM drive	накопитель на компакт-диске
charge a fee for	брать оплату за
charge separate fee	назначать отдельную плату
child prodigy	вундеркинд
circuit board, circuit card	схемная плата
coin toss	подбрасывание монеты
come in handy	подходить, пригодиться
come of age	устареть
come true	исполниться
common sense	здравый смысл
compatible software	совместимое программное обеспечение
control unit (CU)	устройство управления
cool response	холодное отношение (без энтузиазма)
crack the market	вторгнуться на рынок

D

data bases	база данных
data processing	обработка данных

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day-to-day activity	ежедневная деятельность
depend heavily on	сильно зависеть от
digital age	цифровая эра
director of operations	начальник производства
disc cashing	дисковое кэширование
disc drive	дисковод, дисковый накопитель
discrete diode and transistor technology	технология изготовления дискретных диодов и транзисторов
distributed computer environment	распределенная компьютерная среда
distributed memory architecture	архитектура распределенной памяти
do better than OK	работать лучше, чем хорошо
do for leaving	зарабатывать на жизнь
do one's best	стараться, сделать все возможное
do you care for	не хотели бы вы
domain name	часть адреса электронной почты, находящейся справа от знака @
don't beat about the bush	не ходи вокруг да около
don't let me down	не подводи меня
dot matrix printer	точечно-матричный принтер
dot pitch	расстояние между точками (пикселями)
double click	двойной щелчок
down side	недостаток
dramatic improvements	впечатляющие улучшения
drawing board	разработчики
driving force	движущая сила
drop in price	падать в цене
due to	из-за

E

educated decision	грамотное решение
electronic engine management	электронное управление двигателем

electronic Numerical Integrator	электронный численный интегратор
embark upon a path	стать на путь
exhaust the question	исчерпать вопрос
expansion board	плата расширения
expansion slot	слот (разъем) расширения
external control	внешнее управление
external memory	внешняя память
eyes busy situation	ситуация, связанная с визуальными наблюдениями

F

fail exams	провалить экзамены
fall flat	не производить ожидаемого впечатления
fall short	не соответствовать (ожидаемому)
family tree	родословная
feeds paper through	протягивает через себя бумагу
feel at machines mercy	зависеть от машин (компьютеров)
fiber optics	волоконная оптика
file manager	система управления файлами
file server	файловый сервер; мощный компьютер локальной сети, обслуживающий рабочие станции
file transfer	передача файла
firs class	первоклассный
fishing road	удочка
fit on a desk	уместиться на столе
fits your budget	вписывается в ваш бюджет, т.е. доступно
flatbed scanner	планшетный сканнер
fling money about	швырять деньги
floating point	плавающая точка

floppy disc	гибкий диск
floppy disc drive	накопитель на гибком диске
fluid dynamics	динамика жидкости
fly off the handle	сильно рассердиться, выйти из себя
font menu	набор шрифтов
for instance	например
form factor	размер
formative years	молодые годы
forward arrow	клавиша со стрелкой «вправо»
from now on	с этого времени, момента
full scale computer	полноценный компьютер
fully transistorized	полностью на транзисторах
function keys	клавиши в верхнем ряду клавиатуры (функциональные клавиши) и выполняющие определенные задания (функции)

G

gate MOS	структура металл-окисел-полупроводник с затвором
general purpose	общее назначение, цель
general purpose super-computer	суперкомпьютер общего назначения
get in touch with	войти в контакт с
get out of promise	нарушить обещание
get outdated	устареть
get steamrolled	попасть под каток (также в перен. смысле)
get the picture	я понимаю
ghostly blips	вспышки на экране
give free hand	предоставить свободу действий
give word	обещать, дать слово

go ape	быть в восторге
grammar check	грамматический контроль
graphics card	графическая плата (карта)
great amount	большое количество
great place	великолепное место
gross margin	валовая прибыль

H

hand busy situation	ситуация, связанная с ручным трудом
hand translating	перевод вручную
hard disc	жесткий диск
hard drive	жесткий диск, винчестер
hard image	изображение на носителе
have a word with you	(разг.) хочу с тобой поговорить
have at hand	иметь под рукой
have done with it	покончим с этим
have free hand	иметь свободу действий
have the time of one's life	провести лучшее время в жизни
he parted way with his company	его пути с компанией разошлись
head mounted display	портативный дисплей, который крепится к голове
heavy duty user	серьезный пользователь
hedge our bets	уменьшить риск потерь
help me out of trouble	помогите мне выйти из затруднительного положения
help over the problem	помочь в этом вопросе
here you are	пожалуйста
high and dry	оставленный в тяжелой ситуации
high energy physics	физика высоких энергий
high level programming language	язык программирования высокого уровня

high margin product	высокодоходный продукт
high performance	высокопроизводительный
high resolution	высокое разрешение
his opinion is set in stone	его мнение неизменно
hit the book	упорно заниматься
hit the market	появиться на рынке
hit the road	отправляться, уходить
how are things?	как дела?
how come	как это произошло, получилось (*разг.*)
how did you come to it?	как вы этого достигли, как вы к этому пришли?
human scale computer	компьютер для обычного пользователя (человека)
hush hush	совершенно секретно

I

I can't say for certain	не могу сказать определенно
I don't know how to go about it	я не знаю с чего начать
I fall in with your plan	я принимаю ваш план
I take you at your word	ловлю вас на слове
I'll bring you round to my way of thinking	я вас склоню на мою сторону
I'll go through it from cover to cover	я прочту это внимательно от начала до конца
I'm fighting a loosing battle	я безуспешно пытаюсь чего-то добиться
I'm getting along quite well	я достаточно хорошо преуспеваю
if it comes to that	если об этом зайдет речь
image processing	обработка изображения
immediate access memory	память с непосредственным доступом
in a row	подряд

in accord with	в соответствии
in comparison with	по сравнению
in retrospect	ретроспективно
in the face	перед лицом
in under an hour	меньше, чем за час
industrial-strength server	сервер, обеспечивающий промышленные задачи
information bottleneck	задержка скорости потока информации
ink jet or bubble jet printer	пузырьковый или струйный принтер
input device	устройство ввода
integrated circuit	интегральная схема
intense competition	жестокая конкуренция
interface card	интерфейсная плата; плата расширения, которая соединяет компьютер с внешними устройствами. *Интерфейсом* называют связь между объектами, например, между компьютером и модемом, прикладной программой и операционной системой. Связь между компьютером и человеком называется пользовательским интерфейсом.
internal memory	внутренняя память
is the game worth the candle?	стоит ли игра свеч?
it carried me away	это меня увлекло
it dawned on me	меня осенило
it has nothing to do with	это не имеет никакого отношения к
it is here that you find the best value for your money	именно в этом случае вы наиболее рационально истратите свои деньги

it was not much to look at	не было на что посмотреть
it won't do any good	это ни к чему хорошему не приведет
it won't do any harm	это не повредит
it would take more than 2x	это потребует значительного
difference in performance	повышения производительности (более, чем в два раза)
it's absolutely beyond	это абсолютно невозможно
one's reach	(понять)
it's up to you	это зависит от вас, вам решать
it's worth to stress	стоит подчеркнуть

J

jigsaw puzzle	мозаичная загадка
joint venture	совместное предприятие
jump at the chance	ухватиться за благоприятный случай
jump on the opportunity	ухватиться за случай

K

keep head	не терять головы, держать себя в руках
keep in mind	запомнить
keep up with the times	идти в ногу со временем
keep your chin up	не падай духом
key team members	ключевые фигуры персонала
know from A to Z	знать от А до Я

L

lack of money	нехватка денег
lack of portability	(эд.) невозможность использования программы другими компьютерами

large amount	большое количество
lead engineer	ведущий инженер
leave cold	не нравиться
let me have my own way	позволить мне поступать в соответствии с моими желаниями
life span	срок службы
lightning rod	громоотвод
line of code	кодовая строка
liquid crystal display	жидкокристаллический дисплей
login name	имя пользователя сети
lose head	терять голову
lose shirt	потерять все или большую часть денег
lowercase letter	строчная буква

M

machinery language	двоичный код
magnetic core	магнитный сердечник
mail order	заказ по почте
make hard on somebody	критиковать
make up once mind	решиться
make up one's mind	решить, решиться
man in the street	обычный человек, обыватель
manufacturing facility	денежные средства для производства
market softened	цены на рынке упали
mass storage	хранение информации
memory location	адрес в памяти
memory module	модуль памяти
mobile device	портативное устройство
more or less	более не менее
multy purpose	многоцелевой
marrow minded	ограниченный

N

net profit margin	чистый доход
net revenue	чистый доход
next door	рядом
no matter	не имеет значения
no one knows what the future has in store for us	никто не знает, что уготовило нам будущее
now and then	иногда
number crunching	манипуляция числами
numeric processing	численная обработка
numerical simulation	численное моделирование

O

object code	объектный код, который может выполнять процессор
object oriented	объектно ориентированный
on a mobile bases	на мобильной основе
on line	доступный в любое время
on one's own	самостоятельно, в одиночестве
on second thought	подумав еще раз
on the contrary	напротив
on the face of	с первого взгляда (выражение часто используется в случае сомнительного отношения к первому впечатлению, которое может быть обманчивым)
on the other hand	с другой стороны
on the spot	сразу, без промедления
on the spur of the moment	экспромтом
one level behind	на уровень ниже
one step behind	ступенькой ниже, отставать
one stop shopping center	торговый центр, в котором есть все необходимое

operating activity	текущая деятельность
operating code	операционный код
optical radio wireless mouse	радио оптическая беспроводная мышь
option stocks	ценные бумаги с премией
our golden goose was plucked rather badly	наше процветавшее дело потерпело серьезный урон
over the long term	в течение длительного времени
over the supper table	за ужином
overseas call	зарубежный звонок

P

part time work	неполный рабочий день
partial differential equation	уравнение в частных производных
pay attention	уделять внимание
pay cut	урезание зарплаты
peripheral devices	периферийные устройства
plug and play	стандарт автоматического конфигурирования компьютера, главной целью которого является обеспечение работы различных его модулей
power button	кнопка включения
power connector	сетевой провод
power cord	шнур для включения в сеть
power supply	источник питания
present day	теперь
press release	сообщение в прессе
pretty damn well	чертовски здорово
pretty much	очень много, довольно много
price premium	цена выше номинала
product line	производственная линия; серия изделий
program authoring	работа с программой

program counter	программный счетчик, счетчик команд
pull yourself together	соберись с духом
pursue that rout	следовать таким путем, действовать таким образом
put all of one's best and brightest	вложить все возможное
put on an air of indifference	сделать безразличный вид

Q

quick time	расширение операционной системы компьютеров Макинтош для работы с мультимедийными данными и одноименное приложение
quite some time	довольно долго

R

real time events	события в реальном времени
red cross	красный крест
repair shop	мастерская
repeat the year	остаться на второй год
right (left) cross	удар справа (слева)
right away	сейчас, тотчас
rule of thumb	практическое правило
run orders of magnitude faster	работать на много порядков быстрее

S

safe mode	безопасный режим
save much trouble	избавит от забот, затруднений
save the file	сохранить файл
say to the subject	говори по существу

scale of integration	степень интеграции
scrappy start up	старт с нуля
scuba dive	погружение с аквалангом
search engine	поисковая программа
security blanket	защита
see no way out of it	не видеть выхода
set of equations	система уравнений
sharp contrast	резкий контраст
sharp picture	резкое изображение
shift register	регистр сдвига
shoot an angry look	бросить гневный взгляд
short term memory	кратковременная память
silicon based processor	процессор на основе кремния
single unbroken line	строчка без разрывов
single-user workstation	компьютер локальной сети, за которым работает пользователь
skip the thing	бросить вопрос, дело
slip attention	ускользнуть от внимания
solid state electronics	твердотельная электроника
sometime wrong happened with the computer	что то нехорошее произошло с компьютером
sound card	звуковая плата
sound equipment	звуковое оборудование
source code	исходный код
spark interest	возбудить интерес
spark plug timing	управление временем включения
staff writer	штатный писатель
start from scratch	начать с нуля
stay that way	придерживаться той же линии
steam engine	паровой двигатель
step by step	шаг за шагом, постепенно
storage area	область хранения
straight away	сию минуту, сейчас

stumbling block	камень преткновения
super dense server space	сервер со сверхплотной упаковкой
symbol-manipulating task	задание связанно с манипулированием символами
synthesized speech output	выход синтезированной речи

T

take a risk	рисковать
take caution	принимать меры предосторожности
take charge	взять ответственность
take for granted	принять на веру, не требовать доказательств
take into account	принимать во внимание
take it easy	не беспокойся
take off a clearance	разрешение на взлет
take patience	набраться терпения
take stock of	оценивать
tape backup drive	ленточный накопитель для резервирования данных
task list	список задач
tear-drop sized DNA computer	ДНК-компьютер размером со слезинку
tech support	техническая поддержка
text file	текстовый файл
that set us on the path of forming our company	это побудило нас создать собственную компанию
that would bring them within reach of far more people	это сделает их доступными для значительно большего количества людей
that's about as large as we can go	это примерно столько, сколько мы можем себе позволить
that's it for you	это именно то, что тебе нужно
that's not working	не получается

the ball is rolling	дела пошли, останавливаться нельзя
the immediate future	ближайшее будущее
the question is not exhausted	вопрос не исчерпан
the simplest processor will do just fine	простейший процессор прекрасно подойдет
the tide had turned for me	обстоятельства изменились к лучшему
there's no way out of it	нет выхода
things are looking up	дела улучшаются
think the same way	думать точно также
third party support	дополнительная поддержка
this is it!	это то, что нужно, то, о чем я мечтал!
throw in the towel	сдаться
throwaway commodity	бросовый, ненужный товар
time consuming	требующий затраты времени
to grant a wish	выполнить желание
touch screen	сенсорный экран
True Type	технология создания шрифтов
turn around	измениться

U

under the direction	под управлением
up to time	современный
uppercase letter	прописная буква
upwards of	свыше
user friendly format	формат удобный для пользователя
utility software	утилиты, программы, помогающие управлять файлами, получать информацию о компьютере, устранять проблемы и т.д.

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V

vacuum tube	электронная лампа
vast amount of money	огромная сумма денег
video adapter	видеоадаптер
video board	видеоплата
video card	видеокарта
voice and handwriting recognition	распознавание голоса и почерка
voice dialing	голосовой набор номера

W

wash ashore	прибить к берегу
wasting time commodity	вещь, которая попусту отнимает время
we can't help + Gerund	мы не можем не
we never gave it another thought	мы больше никогда об этом не думали
we turned that vision into reality	мы воплотили эту мечту в реальность
we would be much obliged	мы были бы очень обязаны
we've blazed the new trails	мы проложили новые пути
wear it in good health	носи на здоровье
wearable harness	амуниция
web browser	программа, применяемая при навигации в WEB
web server	программа, которая делает доступными документы в интернете
well grounded	основательный, хорошо подготовленный
what would it take to get you to switch?	что бы могло вас заставить переключиться?

what's up?	в чем дело?
which put simply	что просто говоря
will it do?	этого достаточно?
win widespread acceptance	получить широкое признание
wireless capabilities	возможности дистанционного управления
without a scrap of equipment	без всякого оборудования
word processing	обработка текста
work environments that require hands free computing	использование компьютера в рабочих условиях, которые требуют высвобождения рук

Y

you bet	конечно
you can not but remember	вы не можете не помнить
you must do without smth	вы должены обойтись без чего-либо
you're great	ты молодец
your face is as long as a fiddle	вы удручены, подавлены
you're not the least bit worried about	вам не следует ни капли беспокоиться о
Your Honor	Ваша Честь

Z

zip drive	накопитель со сжатием данных

Abbreviations and acronyms

Abbreviation, a shorthand or contracted form of a word or phrase, used to represent the whole.

Webster's Encyclopedic Unabridged Dictionary
Of the English Language

AGP	Advanced Graphics Port	быстрый графический порт
ALU	Arithmetic and Logic Unit	арифметико-логическое устройство
apps	applications	приложения
BIOS	Basic Input / Output System	базовая система ввода-вывода
CD	Compact-Disc	компакт-диск
CD-ROM	Compact Disc Read Only Memory	постоянное запоминающее устройство на компакт-диске
CD-R	CD Recordable	компакт-диск с возможностью записи
CD-RW	CD Writable / Rewritable	перезаписывающий компакт-диск
CEO	Chief Executive Officer	главный инженер
CFO	Chief Financial Officer	вице-президент компании по финансам
CLR	CleaR	сброс
CPU	Central Processor Unit	центральный процессор
ctrl	control	управление (клавиша)
CU	Control Unit	устройство управления
demo	demonstration model	демонстрационная модель
DNA	DeoxiriboNucleic Acid	ДНК, дезоксирибонуклеиновая кислота
DNS	Domain Name System	доменная система наименования

DOS	Disc Operating System	дисковая операционная система
DRAM	Dynamic Random Access Memory	динамическое запоминающее устройство с произвольной выборкой
DUVL	Diffraction UltraViolet Litography	дифракционная ультрафиолетовая литография
e.g.	exempli gratia	(лат.) например
EEPROM	Electrically Erasable Programmable Read Only Memory	программируемое постоянное запоминающее устройство с электрическим стиранием
EPROM	Erasable Programmable Read Only Memory	стираемое программируемое постоянное запоминающее устройство
esc	escape	клавиша прекращения незаконной операции
EULA	End User License Agreement	исполнение пользовательских лицензионных соглашений
fab	fabrication	производство
FLOPS	Floating Point Operations per second	число операций с плавающей точкой в секунду
FTP	File Transfer Protocol	протокол передачи файлов
GM	General Manager	генеральный директор
HTML	HyperText Markup Language	гипертекстовый язык разметки
HTTP	HyperText Transfer Protocol	протокол передачи гипертекста
ICTs	Information Communication Technologies	информационные технологии
i.e.	id est	(лат.) то есть
IC	Integrated Circuit	интегральная схема
IPA	Information Processing Architecture	архитектурная система обработки информации

ISDN	Integrated Services Digital Network	цифровая сеть с комплексными услугами
ISP	Internet Service Provider	сервисная компания в сети интернет
LAN	Local Area Network	локальная сеть
MIPS	Million Instructions Per Second	миллион команд в секунду
modem	modulator-demodulator	модем, модулятор-демодулятор
NC	Network Computers; Network Connect	группа компьютеров, работающая в сети; подключение к сети
OSR	Optical Character Recognition	оптическое распознавание символов
OEM	Original Equipment Manufacturer	производитель комплектного (оригинального) оборудования
OS	Operating System	операционная система, программа, управляющая ресурсами
PhD	Philosophy Doctor	доктор философии
POR	Pay On Receipt	оплата по получению
PROM	Programmable Read Only Memory	программируемое постоянное запоминающее устройство
R&D	Research and Development	исследование и развитие
RAM	Random Access Memory	запоминающее устройство с произвольной выборкой, оперативная память
RISC	Reduced Instruction Set Computer	компьютер с сокращенной системой команд

ROM	Read Only Memory	постоянное запоминающее устройство
SCSI	Small Computer System Interface	интерфейс малых компьютеров
SIMD	Single Instruction Multiple Data Stream	одна команда – много потоков данных
SRAM	Static Random Access Memory	статическое запоминающее устройство с произвольной выборкой
TA	Transfer Agent	трансферный агент
TCP / IP also TCPIP	Transmission Control Protocol / Internet Protocol	интернет-протокол
UNIX	Universal Interactive eXecutive	тип операционной системы
UPS	Uninterrupted Power Supply	бесперебойный источник питания
URL	Uniform Resource Locator	универсальный локатор ресурса, адрес для нахождения документов в серверах
USB	Universal Serial Bus	универсальная последовательная шина
VDT	Video Display Terminal	монитор
VP	Vice President	вице-президент
VRML	Virtual Reality Modeling Language	язык, служащий для создания трехмерных изображений
WAN	Wide Area Network	глобальная сеть
WWW	World Wide Web	всемирная паутина, глобальная гипермедийная система
XML	Extensible Markup Language	язык, служащий для создания WEB-страницы

Анохина-Капустина Л. И.

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