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НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ УНИВЕРСИТЕТ

**Английский для профессионалов**

Учебно-методическое  
пособие  
для преподавателей  
и студентов к учебнику

«INFOTECH. English for Computer Users»  
(4th edition)

Santiago Remacha Esteras

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Цель создания пособия — помочь студентам и всем заинтересованным лицам расширить словарный запас, чтобы комфортно ощущать себя в иноязычной профессиональной среде, совершенствовать навыки работы с профессиональными аутентичными текстами, использовать профессиональную лексику при переводе русских текстов на английский язык, вспомнить основные грамматические конструкции, типичные для академических текстов.

Пособие предназначено для студентов высших учебных заведений, обучающихся по специальностям «Бизнес-информатика», «Программная инженерия», «Компьютерная безопасность», «Прикладная математика и информатика». Уровень языковой подготовки, на который ориентированы материалы, — B2 по шкале CEFR (Общеввропейская система оценки языковой компетенции).

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# UNIT 1

## Living in a Digital World



### Task I

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**You are going to read an article about net generation.  
Decide which statement is true, false or not given.**

1. As the Net Generation Survey found, 75 percent of students instant message while doing schoolwork.
2. The trend towards collaborative work is an inherent feature of Net Generation.
3. The blogs of Net Generation can't be referred to their online diaries causing emotional honesty in their online communications.
4. Net generation students expect open and personal connection with their professors.
5. Net Generation students are confident that evolving technology can cope with the challenges that affect the world.
6. Net generation students are keen on dealing with vital global environmental issue.
7. The majority of college professors tend to think that students are failing at small group discussions.
8. Students and professors are pushing for the online course components to include more of the multimedia Web experience the Net Generation is accustomed to.
9. Net Generation workers are indifferent to the expression of approval for their achievements.
10. For many of them, work will never be the center of their lives, and they search out employers who understand the importance of maintaining a healthy work-play balance.

## **How Net Generation Students Work**

Net Generation students are infamous for their multitasking skills and short attention spans. Growing up online, they're trained to quickly and simultaneously consume and process information from multiple media sources — and to ignore anything “boring” or otherwise uninspiring.

The Net Generation quickly shifts attention from one project to the next, always putting a high priority on speed. Sometimes that speed comes at a cost. Educators and researchers have found that the Net Generation lacks depth in its research and critical skills.

Research shows that Net Generation college students are strong visual learners and weaker textual learners. One study examined a library class at California State University — Hayward, where students frequently ignored lengthy text directions for homework assignments. When the assignments were rewritten using images first, student scores increased.

More than anything, Net Generation students are excellent collaborators. They're natural at networking and love to work in teams. For the Net Generation, collaboration can occur in the same classroom or with team members across the world. They're comfortable starting and maintaining online relationships and becoming “good friends” with people they've never met in person.

The Net Generation is constantly connected. Not just to the Internet, but to each other. The powerful combination of cell phones, text messaging, instant messaging and e-mail means that Net Generation students are always mid-conversation with one or more friends either online, in person or both at the same time.

Social networking is a fancy word for a Net Generation way of life. The Net Generation Survey found that 69 percent of college students surveyed had a Facebook account.

Net Generation students are open and emotionally honest in their online communications. For many, their blogs are literally online diaries, where no topic is taboo. With the popularity of YouTube, more and more students are posting blogs, or video blogs, that cut out the middle man by talking straight to the viewer.

In contrast with cynical Generation X, the Net Generation is optimistic, positive and driven to succeed. High achievers, they crave rewards and accolades for their hard work. They're aware of the many significant problems affecting the world, but they're confident that through youthful innovation and ever-improving technology, these problems will be solved.

Net Generation students are no stranger to community service. Volunteer projects have been a part of their academic and extracurricular life since kindergarten. Because of this, they value work that has meaning and improves the lives of others. Net Generation college students are strongly motivated by academic projects that have a real-world component, particularly those that address a major issue like the environment, homelessness or poverty.

College campuses were some of the earliest adopters of ubiquitous high-speed wireless networks. That's because students expect to be connected anywhere and everywhere. To that end, many colleges are trying to make other essential student services available online around-the-clock. These services include adding money to meal accounts, making doctor's appointments at the student health center and renewing library books online.

Net Generation students expect the same availability from college administrators, staff and professors. They want to e-mail the director of the study abroad program and receive an answer quickly. Net Generation students work fast and make plans even faster. They need institutional infrastructures that can keep up with their pace.

College professors understand the traditional "lecture, read and test" method is failing to reach the Net Generation college student. Large lecture courses are regularly broken up into small group discussions. Microsoft PowerPoint presentations are popular, as are posting all presentations, lecture notes, assignments and syllabi online.

Businesses are also scrambling to understand and work alongside a new breed of employee. The focus should be on the product, not the process. Net Generation workers are still going to multitask. They'll have their iPod on, six browser windows open and three instant messaging conversations going while they're writing software code.

The free flow of ideas is essential. An entry-level employee should be able to instant message a senior executive with an idea and expect a response. Employees should be able to set up virtual teams within offices and across different locations to develop new ideas independently.

Net Generation workers are used to the awards and accolades showered upon them as overachieving high school and college students, and the workplace should be no exception. Net Generation workers expect quick feedback from superiors and incentives for jobs well done, like extra vacation time or prizes.

Adapted from: <[http://www.webopedia.com/DidYouKnow/Hardware\\_Software/2002/FiveGenerations.asp](http://www.webopedia.com/DidYouKnow/Hardware_Software/2002/FiveGenerations.asp)>.



## Task II

**Find Russian equivalents to the following words and word combinations from the text.**

multitasking skills; process information; cut out; come at cost; driven to succeed; ever-improving technology; keep up with; entry-level; set up; feedback



## Task III

**Translate the following words and word combinations into English.**

многозадачный режим; отдавать предпочтение; проводить опрос; буквально; быть нацеленным на успех; внеаудиторный; повсеместный; доступность; создавать команду; средства поощрения за хорошо сделанную работу



## Task IV

**Read the text below and decide which word A, B, C or D best fits each space.**

	A	B	C	D
1	extracts	extends	exits	excels
2	transition	transmission	transformation	transaction
3	hard cash	hard disk	hard copy	hardware

	A	B	C	D
4	cardholder	card reader	shareholder	card recorder
5	ask after	ask for	ask out	ask around
6	contract	enact	conduct	contact
7	approachable	available	acceptable	passable
8	notify	notion	notice	note
9	make up for	fill in for	fill up	fill in
10	revolve	resolute	resolve	resale

The cash-dispensing mechanism has an electric eye that counts each bill as it 1)\_\_\_\_ the dispenser. The bill count and all of the information pertaining to a particular 2)\_\_\_\_ is recorded in a journal. The journal information is printed out periodically and a 3)\_\_\_\_ is maintained by the machine owner for two years. Whenever a 4)\_\_\_\_ has a dispute about a transaction, he or she can 5)\_\_\_\_ a journal printout showing the transaction, and then 6)\_\_\_\_ the host processor. If no one is 7)\_\_\_\_ to provide the journal printout, the cardholder needs to 8)\_\_\_\_ the bank or institution that issued the card and 9)\_\_\_\_ a form that will be faxed to the host processor. It is the host processor's responsibility to 10)\_\_\_\_ the dispute.



## Task V

### Fill in the gaps with prepositions.

The microprocessor brought the fourth generation 1)\_\_\_\_ computers, as thousands of integrated circuits were built 2)\_\_\_\_ a single silicon chip. What in the first generation filled an entire room could now fit 3)\_\_\_\_ the palm of the hand. The Intel 4004 chip, developed 4)\_\_\_\_ 1971, located all the components of the computer — from the central processing unit and memory 5)\_\_\_\_ input/output controls — on a single chip.

In 1981 IBM introduced its first computer 6)\_\_\_\_ the home user, and in 1984 Apple introduced the Macintosh. Microprocessors also moved 7)\_\_\_\_ of the



realm of desktop computers and moved **8)**\_\_\_\_\_ many areas of life as more and more everyday products began to use microprocessors.

As these small computers became more powerful, they could be linked together to form networks, which eventually led **9)**\_\_\_\_\_ the development **10)**\_\_\_\_\_ the Internet.



## Task VI

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**For questions 1–10 read the text below. Fill in the gaps with suitable words. The first letter is given as a prompt.**

When a **1) c**\_\_\_\_\_ wants to do an ATM **2) t**\_\_\_\_\_, he or she provides the necessary information by means of the card reader and keypad. ATMs keep your personal **3) i**\_\_\_\_\_ number and other information safe by using encryption software. The ATM forwards this information to the host **4) p**\_\_\_\_\_, which routes the transaction **5) r**\_\_\_\_\_ to the cardholder's bank or the institution that **6) i**\_\_\_\_\_ the card. If the cardholder is requesting **7) c**\_\_\_\_\_, the host processor causes an electronic funds **8) t**\_\_\_\_\_ to take place from the customer's bank **9) a**\_\_\_\_\_ to the host processor. Once the funds are transferred to the host processor's bank account, the processor sends an approval code to the ATM authorizing the machine to **10) d**\_\_\_\_\_ the cash.



## Task VII

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**Render the following Russian article into English.**

В настоящее время можно сформулировать несколько тезисов о том, в каком направлении развивается компьютерная техника, взяв за основу степень ее проникновения в деятельность человека. Если немного шире посмотреть на проблему, получится следующая картина. За последние 50 лет

постоянно расширялась сфера применения компьютеров, при этом можно выделить несколько этапов этого процесса.

Первый этап: применение цифровых систем, прежде всего компьютеров, для решения сложных вычислительных задач, связанных с большим объемом расчетов. В их числе задачи моделирования процессов, которые невозможно (сложно, дорого) воспроизвести физически.

Второй этап: использование компьютеров совместно с теми или иными изделиями с целью мониторинга их состояния или задействование их в бизнес-процессах для надежного хранения информации, ее быстрого извлечения в удобной форме и передачи по каналам связи. Компьютеры, однако, непосредственного влияния на изделия или процессы не оказывают. Управление изделиями или процессами остается прерогативой людей. Основу компьютерного парка на втором этапе составляют персональные компьютеры и их сети.

Третий этап: встроенные компьютерные системы, управляющие работой изделий и их совокупностей, а также выделенные компьютерные системы, непосредственно функционирующие для достижения целей того или иного процесса. На третьем этапе цифровые системы имеют целевую функцию, совпадающую с целевой функцией изделия или процесса. Можно сказать, что разделить цифровую систему и изделие или процесс теперь невозможно. Компьютеры встраиваются буквально во все — от пылесосов, телефонов и микроволновых печей до высокотехнологичных производств. Более того, компьютеры теперь ближе и к человеку, они становятся персональными, а затем — с уменьшением в размерах — носимыми и мобильными. Сегодня уже есть примеры того, что микропроцессоры начали вживлять в человеческое тело.

Можно сказать, что сегодня мы наблюдаем наступление цифрового века. Но его полная победа произойдет тогда, когда наступит (если наступит) четвертый этап, т.е. полное исключение человека из ряда критических производств и процессов. Такая тенденция уже намечается. Вполне серьезно обсуждается вопрос о том, что именно человек является слабейшим звеном нынешних человеко-машинных систем, и крайне желательно полное исключение его из них.

# UNIT 2

## Computer Essentials



### Task I

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**You are going to read an article about tablet PC. 5 sentences have been removed from the article. Choose from the sentences A–F the one which fits each gap (1–5). There is one extra sentence which you do not need to use.**

- A. A tablet PC allows this type of person to accelerate text input by means of handwriting.
- B. They listen to music, watch movies, read books and newspapers, and surf the Web on their tablets.
- C. While a mouse can never replicate the feel of a paintbrush on canvas, a Tablet PC allows an artist to “draw” directly on the computer screen, simulating that feel.
- D. A tablet PC can be laid flat on any working area or the LCD-like flat screen can be swiveled in any direction.
- E. In a complex negotiation, body language is often every bit as important as what a person actually says.
- F. The screen is touch-sensitive and able to accept input from the stylus, and in some models, fingers.

#### Tablet PC

A tablet PC is a personal PC with built-in convertible characteristic which allows for high flexibility and dynamic usage.

New-generation tablets PCs have the full-featured capabilities of desktop PCs and powerful, ultra-portable notebook computers, leading to their increasing

popularity and rising usage by varied user segments. Apart from basic PC features and functionalities, these mobile PCs have low-heat processors, longer battery life, and rugged physical design to account for frequent usage, wear and tear and mobility.

Most tablet users are being called “content consumers” instead of “content creators”. 1)\_\_\_\_\_ For these consumers, the tablet may replace their PCs. But for “content creators”, people who need to create spreadsheets, lengthy documents, or complex presentations, the touchscreen may present difficulties.

A tablet PC includes a pen-shaped stylus. 2)\_\_\_\_\_ Additionally, text recognition software can translate handwritten notes into a text file that can be accessed, archived, reorganized, revised, reviewed and customized later to create compelling presentations or superior output.

Sometimes, computer users are unwilling or unable to learn to type properly, resorting to the “hunt and peck” method. This leads to a significant speed reduction when entering text into the computer, which can be a problem in environments such as business meetings and lecture halls where speedy note-taking is crucial. 3)\_\_\_\_\_ A tablet PC is also far easier to use for entering difficult-to-type symbols such as those found in mathematical equations.

Some creative professionals--such as artists--are unable to feel completely comfortable with their work unless it has a certain element of physicality. 4)\_\_\_\_\_ This removes a barrier between the computer and the user, allowing him to remain focused on creativity rather than operating the computer.

Unlike a laptop computer, a tablet PC allows you to retain a personal touch during business meetings. 5)\_\_\_\_\_ With a tablet PC, there no longer needs to be a screen between you and the person across the table, ensuring that you will not miss anything. What’s more, a tablet PC can even be used while standing up, which is perfect for professionals on the move such as doctors, foremen, and sales managers.

It won’t be very long in the future when many standard notebooks and other mobile computers will include features currently found only in tablet PCs. Tablet PCs are changing the way we use computers. They’ll continue to do so and in more ways than we’re currently envisioning.

Adapted from: <<http://www.ehow.com>>.



## Task II

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**Find Russian equivalents to the following words and word combinations from the text.**

built-in; flexibility; full-featured capabilities; rugged physical design; wear and tear; content consumers; content creators; touch-sensitive screen; speed reduction; mathematical equations



## Task III

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**Translate the following words and word combinations into English.**

гибкость; встроенный; учитывать; полнофункциональный; время автономной работы; для жестких условий эксплуатации; амортизация; представлять трудность; модифицировать в соответствии с требованиями заказчика; ускорять; воображать



## Task IV

---

**Read the text below and decide which word A, B, C or D best fits each space.**

	A	B	C	D
1	interact	interface	interfere	interlap
2	contact	compact	complete	compete

	A	B	C	D
3	analog	digital	display	imaging
4	stable	constant	comparable	continuous
5	lightproof	lightsome	lightwave	lightweight
6	lifestyle	lifespan	lifelong	life form
7	upshift	upward	upgraded	upset
8	smart	small	keen	smash
9	chase	charge	change	charter
10	performance	production	probation	penetration

Laptop 1)\_\_\_\_ mimic a typical desktop setup, 2)\_\_\_\_ with a keyboard and mouse. Tablets, however, have a special touch-screen display intended for use with a 3)\_\_\_\_ pen, rather than a keyboard or mouse. Laptops generally cost less than tablet PCs with 4)\_\_\_\_ features. Virtually all laptops are designed to be portable. Conversely, some tablets are 5)\_\_\_\_ and portable, but others are bulky. Laptops usually have a better average battery 6)\_\_\_\_; however, some tablet PCs can be 7)\_\_\_\_ with “8)\_\_\_\_ batteries” that improve 9)\_\_\_\_ duration. Laptops often feature better hardware for faster 10)\_\_\_\_ with most general programs. However, the touch display of a tablet PC allows increased functionality with certain digital imaging programs like Adobe Photoshop or Corel Draw.



## Task V

### Fill in the gaps with prepositions.

The first thing that you will notice 1)\_\_\_\_ tablet PC’s is that they do not feature a physical keyboard. Many on-screen keyboards take 2)\_\_\_\_ the bottom half 3)\_\_\_\_ the screen, when being used and will give you some loss 4)\_\_\_\_ usable screen size. The keyboards on laptops are much better 5)\_\_\_\_ anyone who does a lot 6)\_\_\_\_ typing. The trackpad 7)\_\_\_\_ laptop computers is a touch sensitive area about 3 inches 8)\_\_\_\_ 2 inches 9)\_\_\_\_ size. Directly below the trackpad are two small buttons used 10)\_\_\_\_ right and left click.



## Task VI

Use the word given in capitals to form a word that fits in the space.

The vision for Tablet PCs isn't narrowing, but continually expanding. More **1) m**\_\_\_\_ are entering the Tablet PC market. With newer hardware we've seen **2) p**\_\_\_\_ improvements, including screens with better viewing angles and outdoor visibility, faster **3) p**\_\_\_\_, improved wireless **4) t**\_\_\_\_, fingerprint recognition, array microphones and longer battery **5) l**\_\_\_\_. Although the **6) m**\_\_\_\_ of Tablet PCs originally focused on corporate **7) c**\_\_\_\_, especially those who were often away from the desktop or office, the **8) c**\_\_\_\_ market has rapidly grown. Laptop/tablet PC combos feature the normal **9) s**\_\_\_\_ and physical keyboard of a notebook with the touchscreen **10) c**\_\_\_\_ of a tablet PC.



## Task VII

Render the following Russian article into English.

### Облачные перспективы

Разработчики нового программного обеспечения для компьютеров все чаще говорят о «cloud computing» — «облачных вычислениях», представляющих собой радикальную интеграцию единичного компьютера в компьютерную сеть (например, в Интернет). Все приложения при этом работают на удаленном сервере, к которому пользователь подсоединяется через сеть из любой точки, где сеть доступна.

«Облака» — это эластичная IT-инфраструктура, как внутренняя (на серверах одной компании), так и внешняя, публичная (компания использует мощности стороннего провайдера). Для рядового пользователя облачные технологии проще всего представить на примере Google DOCs, Google

Cloud Connect, Windows Live и Dropbox. Облачными сервисами все чаще пользуются разработчики программного обеспечения.

За последние десятилетия мир не раз переживал революционные изменения в компьютерных технологиях. Вместо огромных вычислительных центров в 1970-х годах появился персональный компьютер. В нулевые годы аналогичная революция произошла в способах обмена данными в сетях, и теперь электронной почтой пользуются абсолютно все, включая пенсионеров. Бизнес все основательнее погружается в виртуальную реальность, и крах доткомов в начале XXI в. тому нисколько не помешал.

Следующий шаг компьютерной эволюции может вернуть нас к огромным дата-центрам, предоставляющим клиентам свои вычислительные мощности. Благодаря резко возросшей пропускной способности кабелей местонахождение сервера перестало быть важным. Разработанная Microsoft облачная среда Windows Azure расположена на дата-центрах в шести точках мира на трех континентах. При этом 26 действующих центров в разных странах позволяют уменьшить зависимость скорости и данных от расстояния.

При использовании таких технологий перестают окупаться затраты на закупку и менеджмент веб-серверов. Можно купить место в дата-центре, получая новые сервера за несколько минут и возвращая их обратно так же быстро. Такой центр организует «облако», в котором находится информация. Скорость ее перемещения в несколько раз превышает нынешние скорости обмена данными между веб-серверами.



# UNIT 3

## Inside the System



### Task I

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**You are going to read an article about Moore’s Law. Choose from the list A–F the sentence which best summarises each part 1–5 of the article. There is one extra sentence which you do not need to use.**

- A. No matter what obstacle arises, scientific research needs will advantage further chips manufacture.
- B. Increasing manufacturing costs could halt the sustained pace of microprocessor growth.
- C. We can’t disregard the fact that one day technical difficulties could hamper the production of ever-more complex chips.
- D. The competition between chip manufacturers as well as consumers pursuit of innovations keep Moore’s predictions in force.
- E. A strong tendency of contemporary computer users to change powerful desktops and laptops for internet-centric devices with reduced performance disputes whether Moore’s Law is still relevant.
- F. Moore predicted that the number of transistors (hence the processing power) that can be squeezed onto a silicon chip of a given size double every 18 months.

#### **How Moore’s Law Works**

**1.** If you were to chart the evolution of the computer in terms of processing power, you would see that progress has been exponential. The man who first made this famous observation is Gordon Moore, a co-founder of the microprocessor company Intel. In general, most people interpret Moore’s Law to mean the number

of transistors on a 1-inch (2,5 centimeter) diameter of silicon doubles every 18 months.

The discovery of semiconductors, the invention of transistors and the creation of the integrated circuit are what made Moore's Law possible. Cramming more components on an integrated circuit doesn't just mean devices are becoming more powerful — it also means they're getting smaller.

**2.** Why have Moore's observations and predictions held true over so many decades? Much of the reason is psychological and driven by the market.

The rapid development of electronics has created a sense of expectation among consumers. Every year, faster and more advanced electronics hit the market. From the consumer's point of view, there's no reason not to expect something better next year.

Companies that make integrated circuits are competing against each other to meet the consumers expectations and pour a lot of money into research and development (R&D). These R&D divisions work to develop new techniques to create smaller components and arrange them in such a way that maximizes their performance. Another factor is the simple desire to overcome a challenge.

**3.** Even Gordon Moore has questioned how long the cycle of innovation and production can keep up the pace of the last four decades. Will there ever be an end to Moore's Law?

One of these days we could hit a technical barrier that prevents engineers from finding a way to make smaller components. Or we could bump up against the fundamental laws of physics — like the speed of light, for instance. The problem with predicting a specific date when one or more of these barriers will stop progress is that we have to base it on what we know today. But every day engineers are learning new ways to design, build and produce circuits. What we know tomorrow may make the things that seem impossible today completely achievable.

**4.** But even if we don't encounter technical obstacles, economics could come into the equation. If it's not economically feasible to produce circuits with smaller transistors there may be no reason to pursue further development.

The era of the personal computer has been dominated by a sense that the consumer needs the latest and greatest machine on the market. But today, some people are questioning that philosophy. Part of that is due to changes in consumer behavior — many computer owners use their computers for simple tasks like browsing the Web or sending e-mail. These applications don't put a heavy demand on the computer's hardware.

Another reason powerful PCs aren't as necessary is the rise in popularity of cloud computing. Cloud computing shifts the burden of processing and storing data to a network of computers. Users can access applications and information using the Internet, so they don't necessarily need a powerful machine of their own to take advantage of cloud computing. As a result, devices like smartphones and netbooks are becoming more popular.

If consumers continue to purchase devices like smartphones and netbooks, microprocessor manufacturers will have less of an incentive to meet the expectations of Moore's Law. If there's no market for ultra-powerful processors, then we've hit the economic barrier that could bring an end to the cycle.

5. That said, some facilities may still push the limits of integrated circuit production. While the average consumer may not see the value in a powerful PC, research facilities still rely on the fastest processors in production. More powerful microprocessors can aid in everything from weather prediction to cosmological studies.

One lesson we can draw from Moore's Law and the semiconductor industry is that pure research can yield beneficial results for society. The engineers at Bell Laboratories had no guarantee that their experimental work with the earliest transistor models would yield positive results. But their research and hard work spawned an industry that changed the way we live.

Adapted from: <<http://computer.howstuffworks.com/moores-law.htm/printable>>.



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## Task II

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**Find Russian equivalents to the following words and word combinations from the text.**

exponential progress; hit the market; meet the consumers expectations; overcome a challenge; keep up the pace; come into the equation; is due to; take advantage of; bring an end to; push the limits



## Task III

**Translate the following words and word combinations into English.**

проследить эволюцию; производительность; сделать наблюдение; усовершенствованный; развивать новые технологии; достижимый; натолкнуться на препятствия; продолжать дальнейшее развитие; подвергать сомнению; оборудование для проведения исследований



## Task IV

**Read the text below and decide which word A, B, C or D best fits each space.**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
<b>1</b>	computing skills	computing power	computing algorithm	computing task
<b>2</b>	in	about	down	along
<b>3</b>	produce	perform	perfume	predict
<b>4</b>	interprets	interpose	interports	interacts
<b>5</b>	respond	provide	exemplify	execute
<b>6</b>	handle	hand	handout	handover
<b>7</b>	watch	chip	clock	calculator
<b>8</b>	gigabit	gigaflop	gigabyte	gigahertz
<b>9</b>	volume	speed	capacity	performance
<b>10</b>	constitutes	implies	defines	refers

What makes a supercomputer so super? As it turns out, that's the secret behind 1)\_\_\_\_. It all comes 2)\_\_\_\_ to how fast a machine can 3)\_\_\_\_ an operation. Everything a computer does breaks down into math. Your computer's processor 4)\_\_\_\_ any command you 5)\_\_\_\_ as a series of math problems. Faster processors can 6)\_\_\_\_ more calculations per second than slower ones. Within your computer's CPU is an electronic 7)\_\_\_\_. When you talk about how many 8)\_\_\_\_ your processor has, you're really talking about clock 9)\_\_\_\_. The number 10)\_\_\_\_ to how many electrical pulses your CPU sends out each second.



## Task V

**Fill in the gaps with prepositions.**

The power supply component provides a supply of electricity throughout the rest 1)\_\_\_\_ the computer. When you plug your computer 2)\_\_\_\_ a power socket, electricity flows 3)\_\_\_\_ the cord into a shielded box containing a transformer. The transformer's job is to convert the incoming electricity 4)\_\_\_\_ the proper voltage. If you're using a laptop, some of that power goes 5)\_\_\_\_ the laptop's battery to charge it. When unplugged, a laptop has to rely 6)\_\_\_\_ the charge inside the battery. Computers have a small battery inside them that's always 7)\_\_\_\_, even when you power 8)\_\_\_\_ the rest of the computer. This battery helps preserve data stored in a special chip in charge 9)\_\_\_\_ maintaining information about your computer's hardware. It also powers a clock, which is why your computer should keep time accurately even if you turn it 10)\_\_\_\_ or unplug it.



## Task VI

**Use the word given in capitals to form a word that fits in the space.**

Dual-processor systems are those that contain two separate physical computer 1) **p**\_\_\_\_ in the same 2) **c**\_\_\_\_. In dual-processor systems, the two processors can either be located on the same 3) **m**\_\_\_\_ or on separate 4) **b**\_\_\_\_. In a dual-

core 5) c\_\_\_\_, an integrated 6) c\_\_\_\_ contains two complete 7) c\_\_\_\_ processors. Usually, the two identical processors and their caches and cache 8) c\_\_\_\_ are manufactured so they reside side-by-side on the same die, each with its own path to the system front-side 9) b\_\_\_\_. Multi-core is somewhat of an expansion to dual-core 10) t\_\_\_\_ and allows for more than two separate processors.



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## Task VII

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**Render the following Russian article into English.**

**К 2020 г. Силиконовая долина «заржавеет»**

Известный физик, один из создателей теории струн и автор бестселлера «Физика невозможного» Митио Каку (Michio Kaku) спрогнозировал экономический кризис, который будет вызван прекращением действия закона Мура.

Так называемый закон Мура гласит, что число транзисторов в микросхемах удваивается примерно каждые 18 месяцев. Это утверждение, сделанное одним из основателей компании Intel Гордоном Муром, является истиной в течение уже лет пятидесяти.

Однако ученые давно говорят о том, что один из технологических пределов при создании интегральных микросхем скоро будет достигнут. Сам Мур в 2005 г. заявил, что через 10–20 лет транзисторы по размерам приблизятся к размерам атомов.

В своей новой книге «Физика будущего» Митио Каку утверждает, что в соответствии с законом Мура новые компьютерные игры требуют примерно вдвое больше аппаратных ресурсов, чем прошлогодние. Люди привыкли к такому темпу. Они как должное воспринимают то, что современный 300-долларовый Sony Playstation по мощности соответствует многомиллионному суперкомпьютеру, который был создан для военных нужд совсем, казалось бы, недавно — в 1997 г.

Однако если мощность компьютеров перестанет увеличиваться нынешними темпами, у людей пропадет стимул покупать новые компьютеры на каждое Рождество.

«Около 2020 г. или чуть позднее темпы, описанные в законе Мура, начнут медленно затухать, и Силиконовая долина может постепенно превратиться в “ржавую зону”, если на смену нынешней технологии не будет создана другая», — утверждает Каку.

По его словам, если раньше представители IT-индустрии с пренебрежением относились к предупреждениям ученых о близящемся конце этой геометрической прогрессии, то в последнее время ситуация изменилась. В качестве примера Каку привел свое выступление двухлетней давности перед несколькими тысячами ведущих инженеров Microsoft: его нападки на закон Мура были встречены понимающими кивками, в то время как в прежние времена аудитория подняла бы его на смех.

В качестве возможных альтернатив кремниевым компьютерам физик называет квантовые, оптические, атомные или биокомпьютеры. Но все эти технологии являются пока лишь концепциями или прототипами, а не работающей техникой.

*Источник: «Веб-планета».*

# UNIT 4

## Buying a Computer



### Task I

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**You are going to read an article about Macs and PCs. The endings of 5 sentences have been left out of the text. Fill in the gaps from the list (A–F) matching the beginnings and endings of the sentences. One ending is odd.**

- A. that promotes them being the most utilized computers in creative environments
- B. Macs are gaining an edge on the competition
- C. Mac computers run on an entirely different operating system than PCs
- D. and therefore Microsoft does have an advantage when it comes to software compatibility
- E. Apple chooses to manufacture its own hardware as well
- F. giving Mac users all the software Apple offers in terms of an operating system

#### Mac vs PC

After viewing the ads, many consumers may experience some confusion as to whether they want to do their computing on a Mac or PC (Windows-based computer). Choosing which computer to buy can be a complicated decision because of the many models, types and brands currently available on the market. While PCs have been the most popular type of computer since its invention, **1)**\_\_\_\_. The bottom line in choosing between Mac and PC computers comes down to personal preference.

The operating system is the main difference separating Apple and Microsoft computers. Microsoft releases its operating systems in different levels. Also, Mi-



Microsoft sells upgraded operating system software which allows you to upgrade your current Windows operating system for a somewhat lower price. Apple releases their operating systems in one basic level. For example, the operating system Snow Leopard is only available in one version, **2)**\_\_\_\_\_.

The second major difference between Apple computers and Microsoft computers is the hardware.

Rather than being a software only company, **3)**\_\_\_\_\_. The big thing about this is that Apple does not allow anyone to use its operating system unless it is on a Mac computer, which they distribute. If a Mac operating system, such as Snow Leopard, is run on any other computer besides an Apple, chances are that it is illegal pirated software.

Microsoft is really not a computer at all. It is a software corporation and distributor. Microsoft sells its operating system, Microsoft Windows, to computer manufacturers around the world. Some common computers that would be considered “Microsoft computers” are Dell, Gateway, Acer, Asus, Lenovo, Sony, and Hewlett-Packard. These companies distribute their hardware (the computer itself) with Microsoft’s Windows operating system. Alienware and VoodooPC, for example, offer machines with greater computing power than the high-end Mac, optimizing computers for video games or the ability to act as entertainment centers. As regards Macintosh, it offers only three basic models for its desktop and laptop lines (in a basic, mainstream and high-end scale).

Macintosh computers and most PCs both generally contain a processor made by Intel, the world’s pre-eminent chip manufacturer. The power will depend on the exact Intel processor.

Another major difference between Apple computers and computers using Microsoft Windows is software. Software for Apple is completely different from Microsoft software. For the most part, software is not backward compatible with both operating systems. Things such as file types, file extensions and deep code within software are all different.

Currently you will often see software that is available for Microsoft computers, but not Mac, **4)**\_\_\_\_\_. However, more companies have been releasing Mac versions of their software. While software is more Mac-friendly now than it has been in the past, there are still a variety of games and programs that are only available for PC. For programs that are currently compatible, some are the same as the PC version, but some must be purchased specifically for Mac.

Mac's software is created by the same people who designed the computer and running system, rather than third-party vendors with PCs. This translates into smoother, faster running times for people who need to work quickly.

Because the most common computer used is the PC, the majority of computer viruses target PCs. A Mac is far less susceptible to attacks from computer viruses. However, as it gains in popularity and more people use it, more malicious viruses will most likely be designed to attack the Mac operating system.

While Macs use less energy overall compared with PCs, actual energy use depends on the brand of PC. Even computers from the same manufacturer can have drastically different power needs.

Mac upgrades are expensive, and it's sometimes cheaper to buy a whole new computer than pay for the upgrades. Also, Mac computers typically only work well with Apple products. For example, PC users can buy a competitively priced external webcam at any local technology store, while Mac users must buy a specific webcam that works with the OS X system.

Unlike a standard PC, which has a left-click button and a right-click button, the Mac only has one mouse button. As a result, special menus or functions may take longer to access, either because they are located in a different place or because they require a keyboard command in addition to the mouse click. Macs have higher quality sound and graphics than PCs 5)\_\_\_\_\_.

Mac computers are high-end units, and as a result, cost more than PC computers. Mac does have two computers (called Mac Mini) that run at \$599 and \$799 each, but most consumer Mac products cost between \$1,000 and \$2,000, and some even top the \$3,000 price mark.

Adapted from: <<http://www.ehow.com/>>.



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## Task II

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**Find Russian equivalents to the following words and word combinations from the text.**

experience confusion; complicated decision; bottom line; release; distributor; illegal; backward compatible; computing power; manufacturer; susceptible



## Task III

**Translate the following words and word combinations into English.**

обрабатывать данные; доступный; личное предпочтение; модернизация; совершенный с нарушением патентного права; обратно совместимый; расширение имени файла; высококачественный; время прогона; становится популярным



## Task IV

**Read the text below and decide which word A, B, C or D best fits each space.**

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
<b>1</b>	pretended	intended	enhanced	enlarged
<b>2</b>	enterprise	ideal	basis	networking
<b>3</b>	application	accounting	agreement	storage
<b>4</b>	banking	computing	accommodation	affairs
<b>5</b>	acceleration	advance	speed	location
<b>6</b>	devices	controllers	adapters	arrays
<b>7</b>	political	gaming	business	growing
<b>8</b>	facilities	management	savings	electronics
<b>9</b>	extending	pretending	exporting	extracting
<b>10</b>	component	design	life	setup

Barracuda ES 750GB Hard drive is 1)\_\_\_\_ as an 2)\_\_\_\_ solution and comes in 750GB, 500GB, 400GB and 250GB versions. The aims of enterprise 3)\_\_\_\_ are quite different from those in home 4)\_\_\_\_. 5)\_\_\_\_ is not as much of a concern in large 6)\_\_\_\_ of discs, like it is in the 7)\_\_\_\_ community. The focus is more on power 8)\_\_\_\_, optimizing its use in large arrays and 9)\_\_\_\_ the 10)\_\_\_\_ of drives.



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## Task V

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**Fill in the gaps with prepositions.**

The very concept 1)\_\_\_\_ the notebook computer implies that it is intended 2)\_\_\_\_ transportation. Small sizes don't allow 3)\_\_\_\_ the fastest, and often hottest components. The notebook computer will spend lots of time 4)\_\_\_\_ from an office, so long battery life is 5)\_\_\_\_ importance. It will probably be used to connect 6)\_\_\_\_ wireless networks so you can use the internet, so wireless connectivity is needed. The programs used on a notebook computer will probably consist 7)\_\_\_\_ basic office software like the Microsoft Office suite. Small monitors and limited graphics ability will rule 8)\_\_\_\_ serious gaming, so there is little need to get state of the art graphics cards that will likely just drive the price 9)\_\_\_\_ 10)\_\_\_\_ no particular reason.



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## Task VI

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**Use the word given in capitals to form a word that fits in the space.**

Computer 1) **p**\_\_\_\_ in notebooks are often toned down versions of 2) **d**\_\_\_\_ models. By clocking them slower, that is make the processor run below its intended 3) **s**\_\_\_\_, they can greatly reduce how much 4) **p**\_\_\_\_ is used, which aids in lengthening the 5) **b**\_\_\_\_ life. A DVD 6) **d**\_\_\_\_ for your notebook computer might have to be 7) **e**\_\_\_\_ kind (added on as an extra, not part of the main body of the computer, especially if the computer is a very small model. The main use of a DVD is to watch movies, 8) **s**\_\_\_\_ data or 9) **t**\_\_\_\_ data. USB is the standard for connecting 10) **p**\_\_\_\_ to your notebook computer and is 100% essential.

# UNIT 5

## Type, Click and Talk!



### Task I

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**You are going to read an article about prospects of touch input written by Matt Hamblen. Decide if the statements 1–5 are true or false.**

1. Consumers rely a lot on touchscreen technology.
2. Touchscreen-enabled devices are targeted at knowledge workers.
3. The technology slow adoption in industry can be attributed to the habit of using conventional input devices.
4. The touchscreen function will become leading in education environment in the nearest future.
5. Business will pioneer the widespread adoption of touch technology.

The touchscreen function has proved efficient and demanded among consumers. However, the spread of touchscreens to the workplace is expected to take far longer since today knowledge workers do not use devices with this function.

For the past 20 years or so, tablet and personal computers with touch and pen (or stylus) input capabilities were used strictly in specific vertical industries, such as health care, retail and field service.

Kiosks with touchscreens have become widely available as well, but those are designed mostly for use by a company's customers, not its workers.

The success of multi-touch features on various smartphones and the introduction of the iPad tablet has set off speculation that touchscreens could spread quickly to corporate users.

However, the technology faces slow adoption in industry at least partly due to "adoption barriers" caused by large numbers of today's workers accustomed to using a keyboard and mouse.

In addition, converting to touchscreens would be costly for companies, which would have to upgrade hardware and office applications.

Consumers, and the education market, would likely be the earliest adopters of touch-enabled desktops, laptops and tablets.

In addition, low-cost touchscreen-enabled devices could be targeted at young children entering school, allowing them to see direct manipulation of icons on a screen as a natural way to interact with a computer.

Currently some school districts are already seeking to buy touch and pen-input in a single device, since pen-input can be used to annotate detailed class material.

Consider this as the precursor to a major upcoming generational shift in how users relate to their computing devices. With the “expected widespread adoption of touch by education ... an entire generation will graduate within the next 10 to 15 years for whom touch input is totally natural”.

For business users, progress toward touch capabilities will evolve incrementally, rather than burst forward because of some killer app. As with many recent technology advances, touch adoption will be led by consumers and only gradually get accepted by the enterprise.

Adapted from: Computerworld US.



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## Task II

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**Find Russian equivalents to the following words and word combinations from the article in Task I.**

input capabilities; be widely available; multi-touch features; introduction of iPad; touchscreen-enabled devices; upgrade hardware; slow adoption in industry; convert to touchscreen; interact with computer; knowledge workers



## Task III

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**Read an article about virtual laser keyboard by John Fuller and translate the given words and word combinations into English.**

1) оснащать клавиатурой; 2) цифровая клавиатура; 3) компенсировать; 4) разрабатывать; 5) полноразмерный, в натуральную величину; 6) плоская поверхность; 7) устройство ввода; 8) нажатие клавиши; 9) подключать, подсоединять; 10) (электрическая) схема; 11) распознавать; 12) беспроводные технологии; 13) сопоставимый по размеру; 14) подключить питание

Today, even smartphones come equipped with smaller keyboards. On a typical cell phone with a three-by-four numeric keypad, for instance, where at least three letters are assigned to a number, you often have to punch through each key several times to get one word on the screen. To make up for this, some manufactures have developed special virtual laser keyboards to accompany handheld devices. A virtual laser keyboard connects to the phone and projects a full-sized virtual keyboard onto any flat surface.

At their most basic, all keyboards, whether they're physical or virtual, are input devices — once you type in a certain series of keystrokes, you're telling the keyboard to deliver a command to your computer. But what sets a virtual laser keyboard apart from a regular keyboard?

A traditional keyboard, one that hooks up to a desktop computer or is part of a laptop, is very much like another smaller computer. If you take it apart, it has a processor and circuitry similar to the insides of your computer. Underneath each key is a grid of circuits, and once you press a key, the switch closes. This sends a small electrical current through the grid, which the processor recognizes and analyzes. The processor, in turn, sends the information regarding your keystrokes to your computer, and it can do this several ways. Most desktop users connect their keyboard using cables, although common wireless technologies like Bluetooth let you type from a distance, as long as the computer has the necessary receiver.

When you type on a virtual laser keyboard, there aren't any switches involved. The device projects the image of a QWERTY keyboard onto a flat, non-reflective surface using a red diode laser. But a simple image of a keyboard won't get you anywhere — something needs to analyze the information you type in. Situated near the bottom of the device is an infrared (IR) laser diode, which shoots out a thin plane of infrared light. When you start typing, you pass your fingers through certain areas of the infrared light, and special sensor chip analyzes the location of the intended keystroke. The device then sends this information to the computer receiving the commands.

Virtual laser keyboards are comparable in size to a pack of gum, and can slip into your pocket.

Once powered up, the keyboard can connect to a smartphone or laptop via USB cable or, more commonly, Bluetooth wireless technology. These two connection options allow the virtual laser keyboard to send keystroke information to a word processing document, e-mail or any other program in question.

Adapted from: <<http://electronics.howstuffworks.com/gadgets/travel/virtual-laser-keyboards.htm/>>.



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## Task IV

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**Read the text about computer keyboard by Jeff Tyson and Tracy V. Wilson and decide which of the given words best fits each space.**

attached; cursor; integrated; input device; extras and options; wireless; numeric; ergonomic; key matrix; design; entry; monitored; keycaps; arrangements; shortcuts; operating systems

When you look at all the **1)**\_\_\_\_\_ that are available for new computer keyboards, it can be hard to believe that their original **2)**\_\_\_\_\_ came from mechanical typewriters. Now, you can buy **3)**\_\_\_\_\_ keyboards that bear little resemblance to flat, rectangular models with ordinary square keys. Some flashier models offer options for programming your own commands and **4)**\_\_\_\_\_.



A keyboard's primary function is to act as an **5)**\_\_\_\_. Using a keyboard, a person can type a document, use keystroke shortcuts, access menus, play games and perform a variety of other tasks. Keyboards can have different keys depending on the manufacturer, the operating system they're designed for, and whether they are **6)**\_\_\_\_ to a desktop computer or part of a laptop. But for the most part, these keys, also called **7)**\_\_\_\_, are the same size and shape from keyboard to keyboard.

Keyboards can also use a variety of other typing key **8)**\_\_\_\_. The **9)**\_\_\_\_ keypad is a more recent addition to the computer keyboard. As the use of computers in business environments increased, so did the need for speedy data **10)**\_\_\_\_. Since a large part of the data was numbers, a set of 17 keys, arranged in the same configuration found on adding machines and calculators, was added to the keyboard.

In 1986, IBM further extended the basic keyboard with the addition of function and control keys. Applications and **11)**\_\_\_\_ can assign specific commands to the function keys. Control keys provide **12)**\_\_\_\_ and screen control. Four arrow keys arranged in an inverted T formation between the typing keys and numeric keypad move the cursor on the screen in small increments.

As you type, the processor in the keyboard analyzes the **13)**\_\_\_\_ and determines what characters to send to the computer. Whether it's through a cable or **14)**\_\_\_\_, the signal from the keyboard is **15)**\_\_\_\_ by the computer's keyboard controller. This is an **16)**\_\_\_\_ circuit (IC) that processes all of the data that comes from the keyboard and forwards it to the operating system.



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## Task V

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**Put the verbs in brackets into correct tense form.**

Every year at this time I **1)**\_\_\_\_ (**make**) my pilgrimage to Macworld Expo in San Francisco. It **2)**\_\_\_\_ (**be**) more than 20 years since I first **3)**\_\_\_\_ (**set**) eyes on a Macintosh, as an editor at a new publication in stealth mode called Macworld. After several years of green screens and arcane keyboard commands, the Macintosh **4)**\_\_\_\_ (**be**) a revelation. Most people should acknowledge that Apple **5)**\_\_\_\_ (**continue**) to sustain innovation despite heated competition in every sector and many imitators.

The Mac **6)**\_\_\_\_ (**grow**) up along with the rest of the industry. The revolution that began in 1984 as a “computer for the rest of us”, **7)**\_\_\_\_ (**evolve**) into a lifestyle icon. Processor speed **8)**\_\_\_\_ (**go**) from 8MHz to 2GHz, memory from 128KB to 256MB, and storage from 400KB floppy drives to 40GB drives. The much vaunted graphical user interface **9)**\_\_\_\_ (**continue**) to improve over the years, the hand-made operating system replaced by a sturdy, enhanced Unix derivative, and fit and finish of the products touched by Apple CEO Steve Jobs continue to set the standard for design.

Unquestionably, Apple and the Macintosh **10)**\_\_\_\_ (**have**) a profound influence on computing in the last two decades. But leading with innovation doesn't necessarily translate into market leadership and survival in coming decades.

At this juncture, it's difficult to see how Apple can continue to out innovate and out market competitors enough to gain significant share of the desktop or laptop PC market.



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## Task VI

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**For questions 1–10 read the text below. Use the word given in capitals to form a word that fits in the space. Words are given in the correct order.**

virtuality; use; apply; combine; convention; possible; vary; detect; translate; availability

A **1)**\_\_\_\_ keyboard is an on-screen keyboard, wherein you can type by point and click method using pointing devices such as a mouse, graphic tablet or a trackball. The **2)**\_\_\_\_ has to simply click on the keys of the keyboard displayed on-screen and the function is sent to active **3)**\_\_\_\_. It can also handle various key **4)**\_\_\_\_. The **1)**\_\_\_\_ keyboard is considered to have an edge over **5)**\_\_\_\_ computer keyboard, as it wipes out the **6)**\_\_\_\_ of hardware breakage related issues as well as infection transfer. As **1)**\_\_\_\_ keyboards don't have sophisticated wires or switches, it doesn't require thorough cleaning like its **5)**\_\_\_\_ counterparts. There are **7)**\_\_\_\_ types of **1)**\_\_\_\_ keyboards. Some keyboards are available in the form of touch screen keyboard layouts, while some work on the basis of optical **8)**\_\_\_\_ of

human hand and finger motion. Some JavaScript virtual keyboards also facilitate the 9)\_\_\_\_\_ of the data input. These JavaScript keyboards which allow the users to type in their own languages are also 10)\_\_\_\_\_ online on the web.



## Task VII

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### Render the following Russian article into English.

Почти все современные клавиатуры произошли от первоначально созданной клавиатуры компании IBM — «IBM Enhanced 101 Key Keyboard», которую компания провозгласила стандартом в 1987 г. Этот тип клавиатуры стал наиболее подходящим для пользователей ПК.

Первоначальная модель IBM — клавиатура XT — имела 83 кнопки. 10 функциональных клавиш располагались слева, а с правой стороны находились клавишные панели с цифрами и указателями. Так называемые кнопки Control (Ctrl), левый Shift и Alt, Escape (Esc) были слева от чисел в главном ряду. Справа от правой клавиши Shift находилась клавиша звездочки, позволяющая печатать всем известный символ \*.

Рассмотрим некоторые необычные модели, на которых очень удобно работать.

Компания Kensington поставила на рынок разборную клавиатуру SlimBlade Media Notebook. Она состоит из трех отдельных модулей: клавиатуры ноутбука, цифровой клавиатуры и пульта управления медиаплеером. Их можно либо скрепить в одно целое, либо разбросать по квартире или офису.

Не менее интересна клавиатура от компании Brando. Отличие этой клавиатуры состоит в том, что ее можно свернуть в трубочку и положить в карман. Она похожа на резиновый массажный коврик с выпуклостями клавиш.

Клавиатура Thanko Silent Keyboard ничем не отличается от обычных клавиатур, но есть в ней изюминка. На ней можно работать сразу на двух компьютерах — она оснащена двумя кабелями USB и переключается с одного ПК на другой с помощью дополнительной клавиши. Во всем остальном это обычная клавиатура.

Стеклянная сенсорная клавиатура, представленная дизайнером Конгом Фанфеном, — взгляд в будущее. Смотрится она футуристически: легкая, воздушная, выполненная из обычного стекла с выгравированными на поверхности клавишами. Просто стучишь по стеклу и набираешь текст. Под стеклом установлена камера, фиксирующая касания.

Лазерная клавиатура компании iTech имеет те же плюсы и минусы, что и стеклянная. Но смотрится она еще более необычно. Небольшая коробочка с лазерным проектором ставится на стол и проецирует изображение клавиш на столешницу. Стучишь по светящемуся красным столу, нажатия фиксируются и передаются в компьютер. К сожалению, эта клавиатура часто ошибается или вовсе не печатает нажатую букву.

Как видим, эволюция клавиатуры осуществляется крайне интересно. Даже трудно вообразить, что же еще придумают производители, чем смогут удивить уже столь искушенного пользователя. Может быть, это будет невидимая клавиатура, управляемая с помощью мыслей?

Adapted from: <<http://forum.diagservice.ru/>>.

**Task III**

people have always been intrigued of...; basic needs; the feeling of being appreciated and loved; everyday living; predict; is a great and exciting concept; simultaneously; an artificial vacation; billion solar systems; help those in need

**Task IV**

1) A (sleep); 2) D (take); 3) B (routine); 4) A (artificial); 5) D (monitor); 6) B (have); 7) C (assets); 8) A (projects); 9) C (making); 10) C (developing)

**Task V**

1) upon; 2) nothing; 3) from; 4) will; 5) due; 6) than; 7) with; 8) of; 9) solar; 10) like

**Task VI**

1) consciousness; 2) conservation; 3) facial; 4) efficiently; 5) transportation

**Task VII**

1) will experience; 2) will look like; 3) will have appeared; 4) are going to see; 5) will help; 6) will have been working; 7) know; will be able; will have been developed; 8) will be destroyed; 9) will get; is solved/has been solved; 10) will/may catch up; will have caught up

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