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ENGLISH FOR INFORMATION TECHNOLOGIES

ПРАКТИКУМ ПО АНГЛИЙСКОМУ ЯЗЫКУ

для студентов специальности
1-40 05 01 «Информационные системы и технологии»

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English for information technologies: практикум по английскому языку для студентов специальности 1-40 05 01 «Информационные системы и технологии».

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Практикум содержит тексты из оригинальной литературы для развития навыков чтения и устной речи; учебные задания, способствующие совершенствованию грамматических навыков; тексты для развития навыков аудирования. Приобретенные языковые знания будут весьма полезны для уверенной ориентировки пользователя в мире информации и повышения его технологических возможностей при работе с компьютером в перспективе.

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СОДЕРЖАНИЕ

INTRODUCTION

Quiz-game "What do you know about computers?"

(Who is the first to give the right answers to the questions below?)

1. What does "a computer-literate" person mean?

2. What is the role of computers in our society?

3. What is electronics?

4. Where are electronic devices used?

5. What invention contributed to the appearance of electronics?

6. When and where was the transistor invented?

7. What advantages did transistor have over the vacuum tube?

8. When was the integrated circuit discovered?

9. What is the essence of the integrated circuit?

10. What is microelectronics?

11. What techniques does microelectronics use?

12. What scales of integration are known to you?

13. What do you understand by microminiaturization?

14. What was the very first calculating device?

15. Who gave the ideas for producing logarithm tables?

16. Who invented the first calculating machine?

17. How was the first calculating machine called?

18. What was the first means of coding data?

19. What Business Corporation was the first to produce computers?

20. In what fields were the first computers used?

21. When was the first analog computer build?

22. What was the name of the first digital computer?

23. Who built the first digital computer?

24. What is ENIAC? Decode it.

25. Who contributed the idea of storing data and instructions in binary code?

26. What does binary code mean?

27. What were computers of the first generation based on?

28. What invention contributed to the appearance of the second generation computers?

29. What was the essence of the third computer generation?

30. What is the basis of the fourth computer generation?

31. What is a computer?

32. What are the main functions of the computers?

33. What is a program?

34. What are data?

35. What is data processing?

36. Name four advantages of computer data processing.

37. What is capacity storage?

38. What is hardware?

39. What is software?

40. Who designs computers?

UNIT 1. HISTORY OF COMPUTERS

I. READING ACTIVITY

Read the text and do the tasks.

What life will be like in 2117

A new report shows what life might be like in 100 years from now. It describes skyscrapers that are much taller than today's buildings, underwater 'bubble' cities, and holidays in space. The report is from Samsung's Smart Things. It asked experts on space, architecture, and city planners to give their ideas on life in 2117. They said the way we live, work and play will be totally different to how we do these things today. The experts said that 25 years ago, people could not imagine how the Internet and smart phones would change our lives. The Internet has revolutionized the way we communicate, learn and do daily things. The experts said the changes in the next century would be even more unbelievable.

Researchers questioned 2,000 adults about the predictions they thought were most likely to happen in the future. They predicted that in the future, few people will go to an office but will work from home and have virtual work meetings. People will have advanced 3D printers that will let you download a design for furniture or a food recipe and then 'print' the sofa, table or pizza at home. There will also be less need for visits to the doctor. We will all have a home health capsule that will tell us what the problem is and give us treatment. We will also be going into space for holidays and to get resources that we have used up on Earth. A prediction that was missing was whether people would still need to study English.

1. TRUE / FALSE: Read the text. Guess if a-h below are true (T) or false (F).

a. Buildings in the future will be shorter than today's buildings.
b. Experts say people will be living in underwater cities.
c. The report is from the tech company Apple.
d. Experts say the changes to come by 2117 will be unbelievable.
e. Researchers asked 20,000 people about the future.
f. People will be able to print download and print pizzas.
g. People won't need to go to the doctor as much as they do now.
h. People predicted that we will still need to study English.

2. SYNONYM MATCH: Match the following synonyms from the article.

1. report;	a. futuristic;
2. experts;	b. completely;
3. totally;	c. transformed;

4. revolutionized;	d. finished;
5. unbelievable;	e. study;
6. questioned;	f. plan;
7. advanced;	g. specialists;
8. design;	h. medical care;
9. treatment;	i. asked;
10. used up	j. incredible

3. CHOOSE the right answer to complete the sentence.

1) A new report shows what life might be like in 100 _____.

a. years from now;

b. years from know;

c. years from known;

d. years from not.

2) It asked experts on space, architecture, and city planners to give _____.

a. their ideas in life;

b. their ideas on life;

c. their ideas at life;

d. their ideas by life;

3) 25 years ago, people could not imagine how the Internet and smartphones would _____.

a. changed our lives;

b. change your lives;

c. change our lives;

d. change our live.

4) The Internet has revolutionised the way we communicate, learn and _____.

a. does daily things;

b. do daily thing;

c. do daily things;

d. does daily thing.

5) The experts said the changes in the next century would be even _____.

a. more unbelievably;

b. more and believable;

c. more unbelievable;

d. most unbelievable.

6) Researchers questioned 2,000 adults about the predictions they thought were most _____.

a. likely to happens;

b. likely to happen;

c. likely too happen;

d. like to happen.

7) Few people will go to an office but will work from home and have virtual

_____.

a. work meetings;

b. work meeting;

c. works meetings;

d. works meeting.

8) Download a design for furniture or a food recipe and then 'print' the sofa, table or _____.

a. pizzas at home;

b. pizza to home;

c. pizzas to home;

d. pizza at homes .

9) We will all have a home health capsule that will tell us what the problem is _____.

a. and give us treatments;

b. and give us treatment;

c. and gives us treatment;

d. and gives us treatments.

10) A prediction that was missing was whether people would still _____.

a. need to study English;

b. needed to study English;

c. needs to study English;

d. needy to study English.

4. PUT THE WORDS IN THE RIGHT ORDER TO MAKE UP A SENTENCE.

1. 100 be what new years like life report in might shows A.

2. today's describes are than It that taller skyscrapers much.

3. today different we things Totally how these to do.

4. we has communicate revolutionised the The way Internet.

5. next be The the would more in century even changes.

6. were to The thought likely they most happen predictions.

7. work office go Few from but to people home will an will.

8. less be also will There doctor the to visits for need.

9. what the problem is and give us treatment Tell us.

10. study would English still need Whether to people.

5. ANSWER the questions.

A. 1. Where will the bubble cities in the future be?

2. What company made the report?

3. What kind of planners gave their ideas on life in 2117?

4. What could we not have imagined 25 years ago about the Internet?

5. What did the experts say the changes in the next century would be?

6. How many people did the researchers question?

7. What kind of meetings will we have at work in the future?

8. Who will people need to visit less in the future?

9. Where will we be going to on holiday?

10. What language did people not make a prediction about?

B. 1. What springs to mind when you hear the word 'future'?

2. What do you think about what you read?

3. Do you think the future will be good?

4. What do you think your future will be like?

5. What do you think of really tall skyscrapers?

6. What do you think of the idea of underwater cities?

7. Would you prefer to live in the future or in today's world?

8. What bad things do you think might be in the future?

9. What has the Internet changed for you?

6. BETTER: Rank these with your partner. Put the things that will be better about the year 2117 at the top.

• holidays	• peace
• food	• movies
• jobs	• friendships
• education	• pizza

7. ROLE PLAY: Choose a role and prepare a three-minute speech.
Role A – 1617.

You think the year 1617 is the best year. Tell the others three reasons why. Tell them things that aren't so good about their years. Also, tell the others which is the worst of these (and why): 1917, 2017 or 2117.

Role B – 1917.

You think 1917 is the best year. Tell the others three reasons why. Tell them things that aren't so good about their years. Also, tell the others which is the worst of these (and why): 1617, 2017 or 2117.

Role C – 2017.

You think 2017 is the best year. Tell the others three reasons why. Tell them things that aren't so good about their years. Also, tell the others which is the worst of these (and why): 1917, 1617 or 2117.

Role D – 2117.

You think 2117 is the best year. Tell the others three reasons why. Tell them things that aren't so good about their years. Also, tell the others which is the worst of these (and why):1917, 2017 or 1617.

8. ACADEMIC WRITING: The year 2117 will be better than the year 2017. Write your opinion.

II. GRAMMAR REVISION

Verbs + object + Infinitive; Verbs + object + to-Infinitive

a) New developments in computing are often designed to make something easier. These verbs are often used to describe such developments:
allow, enable, help, let, permit
b) Allow, enable and permit are used with the structure:
Verb + object + to-Infinitive
Let is used with the structure:
Verb + object + Infinitive
c) Help can be used with either structure.

1. Complete the gap in each sentence with the correct form of the verb in brackets.
1. The help facility enables users … (get) advice on most problems.
2. Adding more memory lets your computer … (work) faster.
3. Windows allows you … (display) two different folders at the same time.
4. The Shift key allows you … (type) in upper case.
5. The MouseKeys feature enables you … (use) the numeric keypad to move the mouse pointer.
6. ALT+TAB allows you … (switch) between programs.
7. The StickyKeys feature helps disabled people … (operate) two keys simultaneously.
8. ALT+PRINT SCREEN lets you … (copy) an image of an active window to the Clipboard.

2. Translate the sentences or phrases, containing the Infinitive.
A. 1. Computers were designed to perform thousands of computations per second. 2. To make computers more reliable transistors were used. 3. They were applied to reduce computational time. 4. To integrate large numbers of circuit elements into a small chip, transistors should be reduced in size. 5. To use integrated circuit technology new computers were built. 6. Analytical engine was invented to store data.

B. The problem to be solved; the work to be finished; the cards to be punched; calculations to be performed; the machine to be shown at the exhibition; the device to be provided with the necessary facts; computers to be used for data processing; efforts to increase reliability; electronics to connect systems and sub-systems; the speed of response to depend on the size of transistor; computers to perform thousands of calculations per second; vacuum tubes to control and amplify electric signals; these are circuits to use a large number of transistors; operations to be performed.

III. LISTENING PRACTICE

1. Listen to the introduction to the documentary on Computer history. Why is it difficult to name the inventor of the computer?

2. Listen again and answer the following questions.
2.1. When did Charles Babbage conceive of the 'analytical engine'?
2.2. Was the 'analytical engine' made?
2.3. What question became the base of theoretical computer science?
2.4. What was the first functioning program controlled machine?
2.5. Who contributed to the creation of ENIAC?
2.6. Why was the first patent application for a computer denied?
2.7. Was the general concept of a computer patentable?

IV. TRANSLATION

Translate into Russian in written form.

What is Information Technology

Information Technology (IT) is the application of computers and internet to store, retrieve, transmit, and manipulate information, often in the context of a business or other enterprise. **IT** is considered a subset of information and communications technology (ICT) and has evolved according to the needs.

It is worthwhile noting that the term **IT** is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones. Several industries are associated with information technology, including computer hardware, software, electronics, semiconductors, internet, telecom equipment, engineering, healthcare, e-commerce, and computer services.

Thanks to the continuous development of computers, the original computing systems became minicomputers and later personal computers took the lead. Nowadays, mobile phones are dethroning the personal computer and computing is evolving faster to become disembodied more like a **cloud**, becoming accessible more easily whenever needed. Information technology has transformed people and companies and has allowed digital technology to influence society and economy alike. It has, in this sense, shaped societies and adapted itself to people's needs.

History

If you want a brief history of Information Technology, here is one. Humans were the first "computers". Then, machines were invented to carry out the computational tasks. Now these machines have given way to new form of information technology. Information has become disembodied accessible from

anywhere through cloud technology. Recent advances in IT is the consequence of the development in computing systems.

Humans have been storing, retrieving, manipulating, and communicating information since the Sumerians in Mesopotamia developed writing in about 3000 BC, but the term *information technology* in its modern sense first appeared in a 1958 article published in the *Harvard Business Review*; authors Harold J. Leavitt and Thomas L. Whisler commented that "the new technology does not yet have a single established name. We shall call it information technology (**IT**)." Their definition consists of three categories: techniques for processing, the application of statistical and mathematical methods to decision-making, and the simulation of higher-order thinking through computer programs.

V. SPEAKING SKILLS

Prepare to speak on the topic "The history of computers" on the basis of the following texts.

A. A Short History of Computers and Computing

One of the earliest machines designed to assist people in calculations was the **abacus** which is still being used some 5000 years after its invention.

In 1642 Blaise Pascal (a famous French mathematician) invented an adding machine based on mechanical gears in which numbers were represented by the cogs on the wheels.

Englishman, Charles Babbage, invented in the 1830's a "Difference Engine" made out of brass and pewter rods and gears, and also designed a further device which he called an "Analytical Engine". His design contained the five key characteristics of modern computers:
- An input device
- Storage for numbers waiting to be processed
- A processor or number calculator
- A unit to control the task and the sequence of its calculations
- An output device

Augusta Ada Byron (later Countess of Lovelace) was an associate of Babbage who has become known as the first computer programmer.

An American, Herman Hollerith, developed (around 1890) the first electrically driven device. It utilised punched cards and metal rods which passed through the holes to close an electrical circuit and thus cause a counter to advance.

In 1936 Howard Aiken of Harvard University convinced Thomas Watson of IBM to invest $1 million in the development of an electromechanical version of Babbage's analytical engine. The Harvard Mark 1 was completed in 1944 and was 8 feet high and 55 feet long.

In the late 1940's John von Neumann developed the EDVAC (**E**lectronic

Discrete **V**ariable **A**utomatic **C**omputer) which pioneered the "stored program concept". This allowed programs to be read into the computer and so gave birth to the age of **general-purpose** computers.

B. The Generations of Computers

It used to be quite popular to refer to computers as belonging to one of several "generations" of computer. These generations are:

The First Generation (1943-1958): This generation is often described as starting with the delivery of the first *commercial* computer to a business client. This happened in 1951 with the delivery of the UNIVAC to the US Bureau of the Census. The main defining feature of the first generation of computers was that **vacuum tubes** were used as internal computer components.

The Second Generation (1959-1964): In the mid-1950's Bell Labs developed the transistor. The first transistor-based computer was produced in 1959. Transistors were not only smaller, enabling computer size to be reduced, but they were faster, more reliable and consumed less electricity.

The other main improvement of this period was the development of computer languages. **Assembler languages** or **symbolic languages** allowed programmers to specify instructions in words (albeit very cryptic words) which were then translated into a form that the machines could understand.

The Third Generation (1965-1970): In 1965 the first **integrated circuit (IC)** was developed in which a complete circuit of hundreds of components were able to be placed on a single silicon chip 2 or 3 mm square. Again, one of the major advantages was size, with computers becoming more powerful and at the same time much smaller and cheaper. Computers thus became accessible to a much larger audience. An added advantage of smaller size is that electrical signals have much shorter distances to travel and so the speed of computers increased.

Another feature of this period is that computer software became much more powerful and flexible and for the first time more than one program could share the computer's resources at the same time (multi-tasking).

The Fourth Generation (1971-1980): The boundary between the third and fourth generations is not very clear-cut at all. Most of the developments since the mid 1960's can be seen as part of a continuum of gradual miniaturisation. In 1970 **large-scale integration** was achieved where the equivalent of thousands of integrated circuits were crammed onto a single silicon chip. This development again increased computer performance (especially reliability and speed) whilst reducing computer size and cost. Around this time the first complete general-purpose **microprocessor** became available on a single chip.

During this period **Fourth Generation Languages (4GL's)** have come into existence. Such languages are a step further removed from the computer hardware in that they use language much like natural language. Many database languages can be described as 4GL's. They are generally much easier to learn than are 3GL's.

The Fifth Generation (the future): The "fifth generation" of computers were defined by the Japanese government in 1980 when they unveiled an optimistic ten-year plan to produce the next generation of computers. This was an interesting plan for two reasons. Firstly, it is not at all really clear what the fourth generation is, or even whether the third generation had finished yet. Secondly, it was an attempt to define a generation of computers before they had come into existence. The main requirements of the 5G machines was that they incorporate the features of **Artificial Intelligence, Expert Systems, and Natural Language**. The goal was to produce machines that are capable of performing tasks in similar ways to humans, are capable of learning, and are capable of interacting with humans in natural language and preferably using both speech input (speech recognition) and speech output (speech synthesis).

UNIT 2. SOFTWARE MANAGEMENT

I. READING ACTIVITY

Read the text and do the tasks.

Tech support scams on the rise

Fraudsters are using a new method to trick people into parting with their money. They are pretending to be technical support teams of people's ISP (Internet Service Provider). The new scam is very realistic and can trick even experienced Internet users. The fraudsters are targeting the IP (Internet Protocol) of computers – this is a particular computer's online ID number. Once they have the IP, the victim gets a pop-up window with a message that says the ISP has "detected malware" on the computer. The victim is then advised to call a phone number for help. The Internet security company Malwarebytes said: "The scammers are trying to get people to call them. People are literally paying to be scammed."

Malwarebytes said most of the scams so far have been detected in the USA and UK, but they will spread worldwide. Jerome Segura, a malware expert at Malwarebytes, told the BBC: "It caught me by surprise and I almost thought that it was real. It was a page from my ISP telling me my computer was infected. It was only when I looked in closer detail that I saw it was a scam." The fraudsters are infecting online adverts. Once an infected ad appears on your screen, the virus works out your IP number. You do not even need to click on the ad for the virus to do this. Malwarebytes' advice is to call the tech support number you received when you signed up for the Internet, and to not trust numbers in pop-up windows.

1. TRUE / FALSE: Read the text. Guess if a-h below are true (T) or false (F).
a. Fraudsters are using an old method to trick people out of their money.
b. The scam cannot not trick experienced Internet users.
c. Victims are asked to call a phone number in a pop-up window.
d. The article says people are trying to get the scammers to call them.
e. Most of the scams found have been in the USA and UK.
f. A malware expert said the new scam did not surprise him.
g. The fraudsters use online ads to try and get your IP number.
h. The expert advised people not to trust phone numbers in pop-ups.

2. SYNONYM MATCH: Match the following synonyms from the article.

1. method;	a. target;
2. realistic;	b. got;
3. detected;	c. specialist;

4. victim;	d. exactly;
5. literally;	e. globally;
6. worldwide;	f. way;
7. expert;	g. be sure of;
8. call;	h. authentic;
9. received;	i. found;
10. trust	j. phone

3. CHOOSE the right answer to complete the sentence.

1) Fraudsters are using a new method to trick people into _____ money.
a. partying with their;
b. part in with their;
c. patting with their;
d. parting with their.

2) The new scam is very realistic and can trick even experienced _____.
a. Internet uses;
b. Internet users;
c. Internet usages;
d. Internet use is.

3) a pop-up window with a message that says the ISP has "_____".
a. detected malware;
b. detective malware;
c. detect it malware;
d. detect ad malware.

4) The victim is then advised to call a phone _____.
a. number four help;
b. numbers for help;
c. numbers four help;
d. number for help.

5) The scammers are trying to get people _____.
a. to called them;
b. to call them;
c. to calls them;
d. to calling them.

6) Segura, a malware expert at Malwarebytes, told the BBC: "It _____."
a. caught me at surprise;
b. caught me of surprise;
c. caught me as surprise;
d. caught me by surprise.

7) It was only when I looked in closer detail that I _____ scam.
a. saw that was a;
b. saw it was a;

c. saw this was a;

d. saw I was a.

8) The fraudsters are infecting _____.

a. inline adverts;

b. offline adverts;

c. online adverts;

d. an line adverts.

9) Once an infected ad appears on your screen, the virus works _____ number.

a. out your IP;

b. in your IP;

c. over your IP;

d. up your IP.

10) Advice is to call the tech support number you received when _____.

a. you singed down;

b. you signed at;

c. you singed to;

d. you signed up.

4. PUT THE WORDS IN THE RIGHT ORDER TO MAKE UP A SENTENCE.

1. to using trick a people new Fraudsters method are.

2. online computer's particular a is This number ID.

3. message window - up a The victim gets a pop with.

4. number is to phone victim advised a The then call.

5. to to The trying people them are get call scammers.

6. have far so scams the of Most USA the in detected been.

7. was infected A page from my ISP telling me my computer.

8. fraudsters are infecting online adverts The.

9. virus ad click even You for on need do the the to not.

10. when up support received signed tech you you The number.

5. ANSWER the questions.

A. 1. Who is using a new method to trick people?

2. Who can the new scam trick?

3. What is the two-letter abbreviation for a computer's online ID?

4. What does a pop-up window say has been detected?

5. What does an expert say people are literally paying for?

6. Where have most cases of the scam been detected so far?

7. Who is Jerome Segura?

8. What are the fraudsters infecting to trick people?

9. Who did the company Malwarebytes advise people to phone?

10. What did an expert tell us not to trust?

B. 1. What springs to mind when you hear the word 'Internet'?

2. What do you think about what you read?

3. How worried are you about Internet security?

4. Have you ever had computer problems?

5. What do you do to keep your computer safe?

6. What risks are there of being online?

7. What do you think about pop-up windows?

8. What should you do if your computer is infected with malware?

9. Who is most at risk from scams like this?

6. COMPUTER HATES: Rank these with your partner. Put the things you most hate at the top.

• Pop-up windows	• Having no wi-fi
• Frozen screen	• Spam mail
• Lost data	• Slow downloads
• Ads on websites	• Sites asking you to login

7. ROLE PLAY: Choose a role and prepare a three-minute speech.

Role A – Pop-up windows.

You think a pop-up window is the worst thing about computers. Tell the others three reasons why. Tell them why their things aren't so bad. Also, tell the others which is the least annoying of these (and why): ads on websites, slow downloads or sites asking you to log in.

Role B – Ads on websites.

You think an ad on websites is the worst thing about computers. Tell the others three reasons why. Tell them why their things aren't so bad. Also, tell the others which is the least annoying of these (and why): pop-up windows, slow downloads or sites asking you to log in.

Role C – Slow downloads.

You think slow downloads is the worst thing about computers. Tell the others three reasons why. Tell them why their things aren't so bad. Also, tell the others which is the least annoying of these (and why): ads on websites, pop-up windows or sites asking you to log in.

Role D – Sites asking you to log in.

You think a site asking you to log in is the worst thing about computers. Tell the others three reasons why. Tell them why their things aren't so bad. Also, tell the others which is the least annoying of these (and why): ads on websites, slow downloads or pop-up windows.

8. ACADEMIC WRITING: The Internet is more dangerous than the real world. Write your opinion.

II. GRAMMAR REVISION

We use gerunds in the following ways:
a) As the subject of a verb
Compositing is combining parts of different images to create a single image.
b) As the complement of the subject
Compositing is combining parts of different images...
c) As the object of a verb
I enjoy editing pictures.
d) After a preposition
Designers start a project by making a wireframe.
e) As the complement of a verb
This course involves painting and drawing in various media.
f) Some verbs are followed by the gerund, not by the infinitive (e. g. avoid, fancy, finish, give up, hate, imagine, involve, keep, look forward to, mind, suggest, enjoy)

1. Translate the sentences into Russian. Define the functions of the Gerund.
1. At last our researchers succeeded in getting good results.
2. The teacher insists on carrying out this experiment in our laboratory.
3. Upon being heated, the molecules begin moving very quickly.
4. Increasing in temperature increases the kinetic energy of all molecules.
5. Freon is used in some refrigerating machines.
6. I enjoy using my laptop during business trips.
7. The designer found the aspect ratio by measuring the edges of the screen.
8. This course involves developing your problem solving skills.
9. Upon carrying out a number of experiments our students solved many urgent problems.

III. LISTENING PRACTICE

You are going to hear an interview between a systems analyst and a hotel owner who wants to introduce a better computer system. What questions do you think the analyst will ask? Make a list, then compare your list with others in your group.

1. Listen to the recording to compare your list of questions with those asked by the analyst.

2. Listen again to find the answers to these questions.
2.1. What system does the hotelier have at present?
2.2. What problem is there with the existing system?
2.3. What form of output does the hotelier want?

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2.4. Who will use the new system?
2.5. Which members of staff will require the most training?
2.6. What concerns has the hotelier about the new system?
2.7. What kind of hardware will be required?
2.8. What is the next step?

IV. TRANSLATION

Translate into English.

Software Project Manager

A software project manager is a person who undertakes the responsibility of executing the software project. Software project manager is thoroughly aware of all the phases of SDLC that the software would go through. Project manager may never directly involve in producing the end product but he controls and manages the activities involved in production.

A project manager closely monitors the development process, prepares and executes various plans, arranges necessary and adequate resources, maintains communication among all team members in order to address issues of cost, budget, resources, time, quality and customer satisfaction.

Let us see few responsibilities that a project manager shoulders:
Managing People
- Act as project leader
- Liaison with stakeholders
- Managing human resources
- Setting up reporting hierarchy etc.

Managing Project
- Defining and setting up project scope
- Managing project management activities
- Monitoring progress and performance
- Risk analysis at every phase
- Take necessary step to avoid or come out of problems
- Act as project spokesperson

Project Risk Management

Risk management involves all activities pertaining to identification, analyzing and making provision for predictable and non-predictable risks in the project. Risk may include the following:
- Experienced staff leaving the project and new staff coming in.
- Change in organizational management.
- Requirement change or misinterpreting requirement.
- Under-estimation of required time and resources.

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- Technological changes, environmental changes, business competition.

There are following activities involved in risk management process:

- **Identification -** Make note of all possible risks, which may occur in the project.

- **Categorize -** Categorize known risks into high, medium and low risk intensity as per their possible impact on the project.

- **Manage -** Analyze the probability of occurrence of risks at various phases. Make plan to avoid or face risks. Attempt to minimize their side-effects.

- **Monitor -** Closely monitor the potential risks and their early symptoms. Also monitor the effects of steps taken to mitigate or avoid them.

V. SPEAKING SKILLS

Prepare to speak on the topic "Software management" on the basis of the following text.

SOFTWARE MANAGEMENT

Management software is a general phrase used to describe a category of computer software designed to help streamline the complexity of large projects and tasks as well as facilitate team collaboration and project reporting. Most management software solutions can also handle resource and employee management, schedule coordination, task assignment, budgeting, time and risk analysis and more.

Management software is a broad term that can also apply to financial management software, network management software, customer relationship management software, asset management software or inventory management software.

We can identify several common activities which apply to most software management processes.

- versioning. Sane developers use a version control system such as subversion to keep track of the changes to source code, especially when there's multiple developers working on the same software.

- building. The wikipedia description talks about converting files from one form into another, which is one part of the process for constructing software. Since we're talking about a "directed transformation" (we're mostly looking at compilation, not decompilation), we use a term to indicate this. In analogy to what engineers working in the physical world do, we tend to talk about a "build tool" or "build system".

- testing. Usually considered part of "the build", there are often automated tests for software (and sometimes also manual tests) to verify that the software was built/installed/packaged/configured correctly. Sometimes, it is possible to skip the tests. Sometimes it is hard to run them or interpret the results.

- packaging. Once software has been built (or, also common, before it has been built), we often want to share it with others (or sell it). To this end, we tend to

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package up the software into some kind of "archive format".

- configuring. Source code is often written to be able to function in a variety of environments, such as on different operating systems or even on different kinds of hardware. Some software may also function differently depending on what other software is installed on the system already. Lastly, users may wish to customize how the software behaves or is instaleld. So we often have to configure "the build" to do the proper things for any particular environment.

installing. After software has been built and configured, we often copy it into specific locations on the target system, register it with the operating system as a service, or something simliar.

- distributing. After we package software (or, also common, before we package it), we share it with others by publishing it on the internet, a cd-rom or similar medium, or by submitting our changes to a centralized or decentralized version control system (called a "checkin").

UNIT 3. SOFTWARE LANGUAGES

I. READING ACTIVITY

Read the text and do the tasks.

13-year-old invents new Braille printer

A 13-year-old American has made a cheap machine that can help blind people read. People who cannot see can read by using Braille – a system of small bumps that people touch to read the letters. Machines that make these small bumps into words, sentences and paragraphs are very expensive. They are called Braille embossers and usually cost at least $2,000. The American teenager, Shubham Banerjee, made a new Braille embosser from a Lego kit that lets people create robots. It costs just $350. Banerjee has called his new device the Braigo – a combination of the words Braille and Lego. It works by translating electronic text into Braille and then printing it using a computer or mobile device.

Banerjee designed his Braigo last year for a school science fair. Since then, he has caught the interest of Silicon Valley in the USA. The technology giant Intel invested in Banerjee's machine last November, but they did not say how much money they put in. Banerjee also got $35,000 from his father to help him start the project. His father works as a computer engineer at Intel. He spoke about why he gave so much money to his son, saying: "We as parents started to get involved more, thinking that he's on to something and this innovation process has to continue." Banerjee told the AP news agency that: "My end goal would probably be having most of the blind people...using my Braille printer."

1. TRUE / FALSE: Read the text. Guess if a-h below are true (T) or false (F).

a. A 13-year-old British kid has made a machine to help the blind.
b. Traditional machines that print Braille are very expensive.
c. The machine the teenager made costs just $350.
d. People can use the new machine and print Braille from a computer.
e. The teenager made his machine for his school science fair.
f. The tech giant Intel wanted to invest in the machine, but didn't.
g. The teenager's father refused to give him any money to help him.
h. The teen's parents wanted their son to stop working on the machine.

2. SYNONYM MATCH: Match the following synonyms from the article.

1. cheap;	a. invented;
2 touch;	b. make;
3. at least;	c. attention;

4. create;	d. feel;
5. combination;	e. method;
6. designed;	f. inexpensive;
7. interest;	g. aim;
8. involved;	h. mixture;
9. process;	i. no less than;
10. goal	j. interested

3. CHOOSE the right answer to complete the sentence.

1) A 13-year-old American has made a cheap machine that can _____ read.
a. help blind people;
b. helped blind people;
c. helps blind people;
d. helping blind people.

2) A system of small bumps that people _____ the letters.
a. touch too read;
b. touch to read;
c. touch two read;
d. touch through read.

3) They are called Braille embossers and usually _____ $2,000.
a. cost that least;
b. cost most least;
c. cost at least;
d. cost as least.

4) a new Braille embosser from a Lego kit that _____ robots.
a. lets people creates;
b. lets people created;
c. lets people create;
d. lets people creating.

5) It works by translating electronic text into Braille and then printing _____ computer.
a. it using the;
b. it use in a;
c. it you sing a;
d. it using a.

6) Banerjee designed his Braigo last year for a school _____.
a. science flair;
b. science fare;
c. science fair;
d. science fear.

7) Since then, he has caught _____ Silicon Valley.
a. the interest of;

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b. the interests of;

c. the interesting of;

d. the interested of.

8) Banerjee also got $35,000 from his father to help him _____.

a. start a project;

b. start the project;

c. start this project;

d. start that project.

9) … thinking that he's on to something and this innovation _____ continue.

a. processed has to;

b. processed had to;

c. processed had to;

d. process has to.

10) My end goal would probably _____ of the blind people.

a. be have in most;

b. behaving most;

c. been having most;

d. be having most.

4. PUT THE WORDS IN THE RIGHT ORDER TO MAKE UP A SENTENCE.

1. cheap can people A that blind machine help read.

2. small bumps A that system people of touch.

3. these small Machines bumps that into make words.

4. robots that lets A people Lego create kit.

5. Braille translating electronic It text works into by.

6. fair Banerjee designed his Braigo last year for a science.

7. Valley Silicon of interest the caught has he , then Since.

8. his him from got help $35,000 also to , Banerjee father.

9. gave money about he much spoke why so He his.

10. Braille Most blind my the using printer of people.

5. ANSWER the questions.

A. 1. Where is the teenager from?

2. What is Braille?

3. How much do Braille embossers usually cost?

4. What is the name of Mr Banerjee's printer?

5. What does the new machine translate into Braille?

6. Why did Mr Banerjee design his device?

7. Which American company has invested in Mr Banerjee?

8. How much did Mr Banerjee's father give him?

9. What is Shubham Banerjee's father's job?

10. What is it that Mr Banerjee's parents wanted to continue?

B. 1. What springs to mind when you hear the word 'invention'?

2. What do you think about what you read?

3. What do you think about Braille?

4. What do you think about a 13-year-old inventing this?

5. What do you think of the name Braigo?

6. Would you like a translating device?

7. How difficult do you think it is to learn Braille?

8. How do you think you start learning to use Braille?

9. How might this device change the lives of blind people?

6. DEVICES: Rank these with your partner. Put the most useful at the top. Change partners often and share your rankings.

• laptop computer	• car GPS
• smart watch	• food processor
• mobile phone	• coffee maker
• gaming console	• barcode scanner

7. ROLE PLAY: Choose a role and prepare a three-minute speech.

Role A – Laptop computer.

You think a laptop computer is the best device ever. Tell the others three reasons why. Tell them why their devises aren't so good. Also, tell the others which is the least useful of these (and why): a gaming console, a food processor or a mobile phone.

Role B – Gaming console.

You think a gaming console is the best device ever. Tell the others three reasons why. Tell them why their devises aren't so good. Also, tell the others which is the least useful of these (and why): a laptop computer, a food processor or a mobile phone.

Role C – Food processor.

You think a food processor is the best device ever. Tell the others three reasons why. Tell them why their devises aren't so good. Also, tell the others which is the least useful of these (and why): a gaming console, a laptop computer or a mobile phone.

Role D – Mobile phone.

You think a mobile phone is the best device ever. Tell the others three reasons why. Tell them why their devises aren't so good. Also, tell the others which is the least useful of these (and why): a gaming console, a food processor or a laptop computer.

8. ACADEMIC WRITING: Teenagers should be given jobs in technology companies. Write your opinion.

II. GRAMMAR REVISION

a) -ing form as a noun; after prepositions

We can use the -ing form of the verb as a noun. It can be the subject, object, or complement of a sentence. For example:

Managing the computer's resources is an important function of the operating system.

The operating system starts *running* the user interface as soon as the PC is switched on.

Another function of the operating system is *executing* and *providing* services for applications software.

b) The -ing form is also used after prepositions. This includes *to* when it's a preposition and not part of the Infinitive. For example:

Without the user *being* aware of the details, the operating system manages the computer's resources.

We begin *by focusing* on the interaction between a user and a PC operating system.

We look forward to *having* cheaper and faster computers.

1. Rewrite each of these sentences like this:

One task of the supervisor program is to load into memory non-resident programs as required.

Loading into memory non-resident programs as required is one task of the supervisor program.

1. The role of the operating system is to communicate directly with the hardware.

2. One of the key functions of the operating system is to establish a user interface.

3. An additional role is to provide services for applications software.

4. Part of the work of mainframe operating systems is to support multiple programs and users.

5. The task in most cases is to facilitate interaction between a single user and a PC.

6. One of the most important functions of a computer is to process large amounts of data quickly.

7. The main reason for installing more memory is to allow the computer to process data faster.

2. Complete the sentences with the correct form of the verb: Infinitive or -ing from.

1. Don't switch off without (close down) your PC.

2. I want to (upgrade) my computer.

3. He can't get used to (log on) with a password.
4. You can find information on the Internet by (use) a search engine.
5. He objected to (pay) expensive telephone bills for Internet access.
6. He tried to (hack into) the system without (know) the password.
7. You needn't learn how to (program) in HTML before (design) webpages.
8. I look forward to (input) data by voice instead of (use) a keyboard.

III. LISTENING PRACTICE

Listen to an extract from the lecture and choose a right word from the box to complete the sentences. Listen carefully to the pronunciation of the verbs that end in -ed.

interpreted, animated, configured, used, pronounced, object-oriented, compiled

1. Java lets you watch _____ characters on web pages.
2. Java is an _____ language, similar to C++ but more dynamic.
3. First, the source code of a Java program is _____ into an intermediate format called bytecode. This is then   by any system possessing a Java interpreter.
4. The Java ME platform is widely...... in mobile devices.
5. Nowadays, most mobile phones are to use Java games.
6. Microsoft's C# is a simplified version of C and C++ for the Web. It's........'C sharp'.

IV. TRANSLATION

Translate into Russian in written form.

Which programming language should you learn for software development?
When starting on the path of programming, it's important you invest your time wisely in choosing to learn something that will both benefit you in the immediate future with visible results on your platform of choice, as well as getting you set up for any future languages. Your choice will depend upon a number of factors, so let's take a look at their characteristics, ease of learning, and likelihood of earning you a living.

Java is a full object-oriented language, strongly typed, with an extensive feature set focused on networking and cross-platform compatibility. If you can make an app worth charging for on the Android marketplace, then the world is yours for the taking. There are also a lot of enterprise-level Java jobs, but the competition is high and pay low.

C++ is the serious programmer's language of choice, forming the basis of most computer games and most advanced Windows software. It's high performance, but requires a lot more precision on the programmers part when it comes to memory

management and consequently has a steep learning curve. C++ programmers will always be in demand and paid well, especially in the games industry.

The truth is that once you have the basics down in any language, it's relatively easy to learn another; just as knowing Chinese kanji makes reading and writing Japanese easier – programming languages often cross over and borrow from each other, sharing the same set of basic characteristics and syntaxes.

The most in-demand programming languages

It's no surprise SQL (pronounced 'sequel') tops the job list since it can be found far and wide in various flavors. Database technologies such as MySQL, PostgreSQL and Microsoft SQL Server power big businesses, small businesses, hospitals, banks, universities. Indeed, just about every computer and person with access to technology eventually touches something SQL. For instance, all Android phones and iPhones have access to a SQL database called SQLite and many mobile apps developed Google, Skype and DropBox use it directly.

The tech community recently celebrated the 20th anniversary of Java. It's one of the most widely adopted programming languages.

JavaScript is another one of the world's most popular and powerful programming languages, and is used to spice up web pages by making them interactive. For example, JavaScript can be used to add effects to web pages, display pop-up messages or to create games with basic functionality.

C++ (pronounced C-plus-plus) is a general purpose object-oriented programming language based on the earlier 'C' language. It is the best language to learn for performance-critical applications such as "twitch" game development or audio/video processing.

Any great craftsman has a belt full of tools, each a perfect choice for certain situations. Similarly, there will never be just a single programming language, and each language will evolve and improve over time to keep pace with innovation.

V. SPEAKING SKILLS:

Prepare to speak on the topic "Programming languages" on the basis of the following text.

Programs and programming languages

Computers can deal with different kinds of problems if they are given the right instructions for what to do. Instructions are first written in one of the high-level languages, e.g. FORTRAN, COBOL, ALGOL, PL/I, PASCAL, BASIC, or C, depending on the type of problem to be solved. A program written in one of these languages is often called a source program, and it cannot be directly processed by the computer until it has been compiled, which means interpreted into machine code. Usually a single instruction written in a high-level language, when transformed into

machine code, results in several instructions. Here is a brief description of some of the many high-level languages:

FORTRAN acronym for FORmula TRANslatlon. This language is used for solving scientific and mathematical problems. It consists of algebraic formulae and English phrases. It was first introduced in the United States in 1954.

COBOL acronym for COmmon Business-Oriented Language. This language is used for commercial purposes. COBOL, which is written using English statements, deals with problems that do not involve a lot of mathematical calculations. It was first introduced in 1959.

ALGOL acronym for ALGOrithmic Language. Originally called IAL, which means International Algebraic Language, it is used for mathematical and scientific purposes. ALGOL was first introduced in Europe In 1960.

PL/I Programming Language I. Developed in 1964 to combine features of **COBOL and ALGOL**. Consequently, it is used for data processing as well as scientific applications.

BASIC acronym for Beginner's All-purpose Symbolic Instruction Code. Developed in 1965 at Dartmouth College in the United States for use by students who require a simple language to begin programming.

C developed In the 1970s to support the UNIX operating system. C is a highly portable general-purpose language.

Other such languages are **APL** (developed in 1962). **PASCAL** (named after Blaise Pascal and developed in 1971) and **LISP** and **PROLOG**, both of which are used for work in artificial intelligence. **LOGO** is a development of

LISP which has been used to develop computer-based training (CBT) packages.

When a program written in one of these high-level languages is designed to do a specific type of work such as calculate a company's payroll or calculate the stress factor on a roof. It is called an applications program.

Institutions either purchase these programs as packages or commission their own programmers to write them to meet the specifications of the users.

The program produced after the source program has been converted into machine code is referred to as an object program or object module. This is done by a computer program called the compiler, which is unique for each computer. Consequently, a computer needs its own compiler for the various high-level languages if it is expected to accept programs written in those languages. For example, in order that an IBM RS/6000 may process a program in FORTRAN, it needs to have a compiler that would understand that particular model and the FORTRAN language as well.

The compiler is a systems program which may be written in any language, but the computer's operating system is a true systems program which controls the central processing unit (CPU), the input, the output, and the secondary memory devices. Another systems program is the linkage editor, which fetches required systems routines and links them to the object module (the source program in machine code).

The resulting program is then called the load module, which is the program directly executable by the computer. Although systems programs are part of the software, they are usually provided by the manufacturer of the machine.

Unlike systems programs, software packages are sold by various vendors and not necessarily by the computer manufacturer. They are a set of programs designed to perform certain applications which conform to the particular specifications of the user. Payroll is an example of such a package which allows the user to Input data - hours worked, pay rates, special deductions, names of employees - and get salary calculations as output. These packages are coded in machine language (0s and 1s) on magnetic tapes or disks which can be purchased, leased, or rented by users who choose the package that most closely corresponds to their needs.

UNIT 4. GRAPHICS DESIGN AND MULTIMEDIA

I. READING ACTIVITY

Read the text and do the tasks.

Eye-tracking software will look at you shop

New computer software will soon be keeping an eye on you, or on your eyes, when you go shopping. It is called the Sideways project because it tracks the movement of your eyes as you glance at products on shelves. The researchers, from Britain's Lancaster University, told the BBC that the technology would be a common feature in stores before the end of the decade. Senior researcher Andreas Bulling said: "The system uses a single ordinary camera…[It] detects the faces of people walking by and calculates where the eyes are relative to the eye corners." This information is then used to flash up adverts related to what products you were looking at longest as you pass by video screens ahead of you.

Eye-tracking technology is being used in a number of different situations. One is to help motorists better identify cyclists on roads. Studies suggest drivers are five times likelier to spot pedestrians than people riding bicycles. This could significantly cut the number of road deaths. Eye-tracking can also be used to allow people to use their eyes as a mouse to scroll through and select content on screens. Disabled people are already using this technology to enhance their daily mobility. Last month the tech giant Samsung launched a smartphone that monitors what users look at on-screen. Mr Bulling said: "It is really gaining momentum. I fully expect this technology to become available widely in the near future."

1. TRUE / FALSE: Read the text. Guess if a-h below are true (T) or false (F).
a. Stores will use software to cut the amount of shoplifting by customers.
b. The software will monitor what products you look at.
c. Researchers say the software could be in wide use by 2020.
d. Information from your eyes will alert staff when you will pay for goods.
e. Eye-tracking could help reduce the number of cyclists hit by cars.
f. Software now lets the eyes do things the computer mouse does.
g. The technology has not yet been put to use with disabled people.
h. A researcher suggested the software would not be that mainstream.

2. SYNONYM MATCH: Match the following synonyms from the article.

1. keeping an eye on;	a. display;
2. tracks;	b. choose;
3. glance;	c. aspect;

4. feature;	d. recognise;
5. flash up;	e. follows;
6. situations;	f. improve;
7. identify;	g. circumstances;
8. select;	h. watching;
9. enhance;	i. believe;
10. expect	j. look

3. CHOOSE the right answer.
1) New computer software will soon be _____ on you.
a. keep in an eye;
b. keeping any eye;
c. key ping a nigh;
d. keeping an eye.
2) The technology would be a common feature in stores before the _____.
a. ends of the decade;
b. end of a decade;
c. end of the decade;
d. end of this decade.
3) It detects the faces of people walking by and calculates where the eyes are _____ corners.
a. relatively to the eye;
b. relative to an eye;
c. relatives to the eye;
d. relative to the eye.
4) This information is then used to _____
a. flash up adverts;
b. flashes up adverts;
c. flashed up adverts;
d. flashing up adverts.
5) What products you were looking at longest _____ video screens ahead of you.
a. as you passer by;
b. as you pass, bye;
c. as you pass by;
d. was you pass by.
6) Eye-tracking technology is being used _____ different situations.
a. in the number of;
b. in a number of;
c. in a number for;
d. in the number for.
7) Drivers are _____ to spot pedestrians than people riding bicycles.

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a. fifty timers likelier;
b. five times like liar;
c. five times likelier;
d. fifty times likelier.
8) Allow people to use their eyes as a mouse _____ and select content.
a. to scroll through;
b. to scroll though;
c. to scroll throughout;
d. to scroll thought.
9) Samsung launched a smartphone that monitors what users _____ .
a. looks at on-screen;
b. looked at on-screen;
c. looking at on-screen;
d. look at on-screen.
10) I fully expect this technology to become available widely _____ .
a. in a near future;
b. in the near future;
c. on the near future;
d. on a near future.

4. PUT THE WORDS IN THE RIGHT ORDER.
1. an you will keeping on Software be eye soon.
2. of as at movement eyes glance The your you products.
3. would common stores technology a in The be feature.
4. the eyes to corners the relative eye Where are.
5. you at related products looking Adverts what were to.
6. five pedestrians times likelier Drivers to are spot.
7. as to eyes mouse people their a Allow use.
8. daily this their Using enhance to mobility technology.
9. at look users what monitors that smartphone A on-screen.
10. fully become expect available this technology I to.

5. ANSWER the questions.
A. 1. What will watch shoppers as they walk through stores?
2. What does the software watch you looking at?
3. When did a researcher say the software would be common?
4. How many cameras are needed for this software?
5. What does the eye-tracker do with information it collects?
6. What might car drivers be better able to see?
7. How could eye-tracking software be used with computers?
8. What does the technology do for the disabled?
9. What does Samsung's new smartphone do?

10. What did the researcher say about the progress of the software?

B. 1. What springs to mind when you hear the word 'software'?

2. What do you think of the eye-tracking software?

3. Is the software an invasion of privacy?

4. Should people be able to choose if they want their eyes tracked?

5. Would the videos you see after eye-tracking make you spend more?

6. Do you think this software is like Big Brother in the book "1984"?

7. What will happen to the footage from cameras that tracked your eyes?

8. Do you like the idea of using your eyes as a mouse?

9. What other functions can you think of for eye-tracking?

6. EYES: How can we use them better with technology? Rank these and share your rankings with your partner. Put the best at the top.

• hands-free driving	• paint what we see
• open doors ahead of us	• look at words and hear them
• play games	• x-ray vision
• change TV channels	• photograph what we see

7. ROLE PLAY: Choose a role and prepare a three-minute speech.

Role A – Eye-tracking scientist.

You think eye-tracking is fantastic and will change many things in our lives. Tell the others three reasons why. Nothing can stand in the way of technology. Tell those who dislike the software they are livening in the past. Tell them also there is no lack of privacy with the software.

Role B – Store owner.

You think the eye-tracking software is the greatest invention since the computer. Tell the others three reasons why. You are sure it will make everyone's life much better when they go shopping. You don't understand people who are against it. Tell them all data from cameras will be confidential.

Role C – Average Jo.

You are shocked that eye-tracking software will be in stores. Tell the others three reasons why. You are fed up at being watched my cameras. This software really takes away our privacy. You do not want to be watched in a store and then told what to buy.

Role D – Dark glasses maker.

You think the eye-tracking software is a menace to society. Tell the others three reasons why. However, it is a great business opportunity for you. Sales of your dark glasses will skyrocket – people will wear dark glasses so the eye-tracker can't follow their eye movements.

8. ACADEMIC WRITING: Software that tracks what we look at is dangerous and should not be allowed in stores. Write your opinion.

II. GRAMMAR REVISION

a) We make simple instructions using the Infinitive:
Click on the appropriate tab.
Enter the search criteria.
b) We can add an explanation using the to-Infinitive or by+-ing:
To find patients click on the appropriate tab.
Click on the Find button *to start* the search.
Start the search by *clicking* on the Find button.
c) We can put the instructions in order using sequence words:
First click on the appropriate tab.
Then enter the selection criteria.
Finally click on the Find button.
d) We can link two instructions and emphasise their order like this:
Having entered the selection criteria, click on the Find button.
Once the selection criteria *have been entered,* click on the Find button.

1. Complete the gaps in these instructions for finding the records of all members of the Green family living in postcode WX14 3PH and registered with any doctor in the practice.
   1. First enter the search criteria by ……….
   2. To …, enter Green in the surname Box.
   3. Ensure both male and female members of the family are found by ……
   4. … select the Address tab.
   5. Having …, enter the postcode.
   6. … choose the Registration tab.
   7. Once …., select all doctors.
   8. …., click on Find to …..
d) We can use an -ing clause to explain how something happens.
Using MIDI, computers can communicate with synthesisers.
e) The -ing clause explanation can be placed before or after the main clause.
DVD drives read DVD discs by using blue laser light.
f) We can also use -ing clauses to link a cause and effect.
A WAV file may sample a song 44000 times a second, creating a huge mass of information.

2. Match each cause and effect. Then link them with an -ing clause.

1. Computers with MIDI interface boards can be connected to MIDI instruments	a. This permits extra information to be stored on the performer and other track details
2. Each side of a DVD can have two layers	b. You can create your own compilation

3. MP3 removes sounds we can't hear	c. This allows you to sample a new group before buying their CD
4. You can download single tracks	d. This gives an enormous storage capacity
5. Each MP3 file has a tag	e. This allows the music being played to be stored by the computer and displayed on the monitor
6. MP3 players contain several devices	f. This enables you to change the appearance of your player
7. You can download a skin program	g. These allow you to control the way the music sounds
8. You can legally download some music	h. This produces much smaller files

3. Translate the sentences with "for + Infinitive" and "Objective with the Infinitive" constructions into Russian.

1. It was not difficult *for the pupils to understand* the function of the mouse in computer operation. 2. There is no reason *for computer experts to use* computers of the first generation nowadays. 3. The mechanism is provided with special devices/or *the whole system to function* automatically. 4. The text was very interesting but rather difficult *for the students to translate* it without a dictionary. 5. It is not easy *for me to learn* to speak English fluently. 6. We know *the machine to react* to a series of electrical impulses that can be represented in binary numbers. 7. Scientists considered *silicon to be* one of the best materials for the creation of an 1C. 8. We know *all data to be translated* into binary code before being stored in main storage. 9. Engineers expect *these new devices to be tested* very soon. 10. They want *their son to become* a computer operator and to design new computer models.

III. LISTENING PRACTICE

1. Listen to a sales assistant in a computer shop explaining to a customer the system requirements needed to run multimedia software. Which answers (*a* or *b*) best describe what she says?

1.1. Multimedia is defined as
a) the integration of video and telecommunications with traditional computing,
b) the integration of text, graphics, audio, video and animation in a single application.

1.2. With multimedia encyclopedias,
a) you have more fun but you learn more slowly,
b) you get much more involved than with print encyclopedias.

1.3. Interactive games
a) use multimedia and virtual reality features,
b) do not require much RAM memory.

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2. Listen again and complete this diagram of a multimedia system.
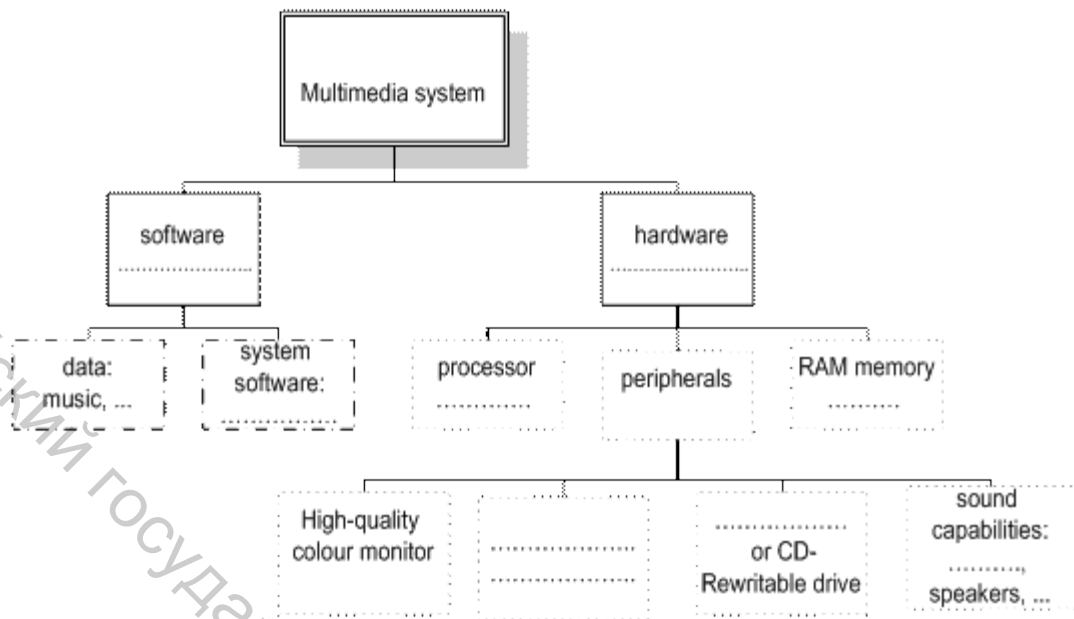
IV. TRANSLATION

Translate into Russian in written form.

What is computer graphics?

The term **computer graphics** includes almost everything on computers that is not text or sound. Today almost every computer can do some graphics, and people have even come to expect to control their computer through icons and pictures rather than just by typing.

Here in our lab at the Program of Computer Graphics, we think of computer graphics as drawing pictures on computers, also called *rendering*. The pictures can be photographs, drawings, movies, or simulations – pictures of things which do not yet exist and maybe could never exist. Or they may be pictures from places we cannot see directly, such as medical images from inside your body.

We spend much of our time improving the way computer pictures can simulate real world scenes. We want images on computers to not just look more realistic, but also to BE more realistic in their colors, the way objects and rooms are lighted, and the way different materials appear. We call this work "realistic image synthesis", and the following series of pictures will show some of our techniques in stages from very simple pictures through very realistic ones. Computer graphics uses several simple object rendering techniques to make models appear three-dimensional. Shading techniques extend the realistic appearance of objects and introduce features such as transparency and textures.

Careers in multimedia technology

There are a variety of job opportunities in multimedia technology spread along a wide horizon of industries. In this day and age, information presented to a large audience often contains digital and print images. The use of text and animation can often enhance the communication of an important message. With a strong back ground and skills in multimedia technology, you might find job opportunities in marketing and advertising. Or you could discover your work niche in the publishing industry, where there is the need for designing, managing or generating multimedia content for websites, newspapers or magazines. Even libraries, museums, cable TV, retailers, filmmakers and training departments offer jobs to people with skills in multimedia technology.

Typical Multi Media Job Titles:

- Web developer
- Graphic artist
- Digital photographer
- Instructional designer
- Production assistant
- Desktop publisher
- Film/Video animator

Multimedia degree programs provide training on using computer programs and creating interactive presentations or materials. Many programs will focus on teaching students how to use website development software like Cascading Style Sheet or the Adobe suite, which includes Photoshop, Flash, Illustrator and Dreamweaver.

A multimedia professional can look forward to applying a dynamic combination of website design basics, electronic imaging, animation, graphic design and digital editing. But most exciting, is the potential to integrate creativity and imagination with the cutting edge tools of technology.

V. SPEAKING SKILLS

Prepare to speak on the topic "Multimedia in our life" on the basis of the following text.

Multimedia applications

Multimedia applications are used in all sorts of fields. For example, museums, banks and estate agents often have information kiosks that use multimedia;

Companies produce training programs on optical discs; businesspeople use Microsoft PowerPoint to create slideshows; and teachers use multimedia to make video projects or to teach subjects like art and music. They have all found that moving images and sound can involve viewers emotionally as well as inform them, helping make their messaae more memorable.

The power of multimedia software resides in hypertext, hypermedia and

interactivity (meaning the user is involved in the programme). If you click on a hypertext link, you can jump to another screen with more information about a particular subject. Hypermedia is similar, but also uses graphics, audio and video as hypertext elements.

As long as your computer has a sound card, you can use it to capture sounds in digital format and play them back. Sound cards offer two important capabilities: a built-in stereo synthesizer and a system called MIDI, or Musical Instrument Digital Interface, which allows electronic musical instruments to communicate with computers. A Digital Audio Workstation (DAW) lets you mix and record several tracks of digital audio.

You can also listen to music on your PC, or transfer it to a portable MP3 player. MP3 is short for MPEG audio layer 3, a standard format that compresses audio files. If you want to create your own MP3 files from CDs, you must have a CD ripper, a program that extracts music tracks and saves them on disk as MP3s.

Audio is becoming a key element of the Web. Many radio stations broadcast live over the Internet using streaming audio technology, which lets you listen to audio in a continuous stream while it is being transmitted. The broadcast of an event over the Web, for example a concert, is called a webcast. Be aware that you won't be able to play audio and video on the Web unless you have a plug-in like RealPlayer or QuickTime.

Video is another important part of multimedia. Video computing refers to recording, manipulating and storing video in digital format. It you wanted to make a movie on your computer, first you would need to capture images with a digital video camera and then transfer them to your computer. Next, you would need a video editing program like iMovie to cut your favourite segments, re-sequence the clips and add transitions and other effects. Finally, you could save your movie on a DVD or post it on websites like YouTube and Google Video.

Multimedia is used to produce dictionaries and encyclopedias. They often come on DVDs, but some are also available on the Web. A good example is the

Grolier Online Encyclopedia, which contains thousands of articles, animations, sounds, dynamic maps and hyperlinks. Similarly, the Encyclopedia Britannica is now available online, and a concise version is available for iPods, PDAs and mobile phones. Educational courses on history, science and foreign languages are also available on DVD. Finally, if you like entertainment, you'll love the latest multimedia video games with surround sound, music soundtracks, and even film extracts.

UNIT 5. DATABASE

I. READING ACTIVITY

Read the text and do the tasks.

Google starts one-dollar charity app

The search engine giant Google has started a new app that lets people give just $1 to different charities. Its 'One Today' app shows users a variety of charities every day. The home page says: "Open the app, and you're presented with several projects to which you can donate $1 with one click. It's that simple. And most people can afford the occasional $1 donation." At the moment, it is only available in the USA to people with Android mobile phones. Google hopes to start providing the service around the world soon. Google spokeswoman Maya Amoils blogged: "We look forward to continuing to improve the One Today experience and to growing our dynamic community with incredible [non-profit organisations]."

The One Today website explained that: "Google has a long-standing commitment to supporting non-profits and to doing good. One Today makes fundraising easy for non-profits; it also makes giving simple and fun for users." Google believes the app will mean people can learn more about non-profits. It also hopes people will share their favourite projects on social media sites so that more people donate. It adds: "Do good daily! Engage with hundreds of non-profit projects each year and help contribute to their success." Ms Amoils wrote: "We're amazed by the great work non-profits do on a daily basis to make the world a better place, and we're thrilled to provide a new platform which helps [them]."

1. TRUE / FALSE: Read the text. Guess if a-h below are true (T) or false (F).
a. Google started a charity that cost just $1 to start.
b. An app shows users one new charity every day.
c. Google says most people have enough to give $1 every now and then.
d. The app is not yet available worldwide.
e. A website said Google has promised to help charities.
f. The article says the app does not have a share button for charities.
g. Google wants people to go online to visit hundreds of charities a year.
h. The article says Google wants to make the world more amazing.

2. SYNONYM MATCH: Match the following synonyms from the article.

1. lets;	a. excited;
2. donate;	b. odd;
3. occasional;	c. unbelievable;

4. dynamic;	d. promise;
5. incredible;	e. well-established;
6. long-standing;	f. allows;
7. commitment;	g. active;
8. engage;	h. technology;
9. thrilled;	i. give;
10. platform	j. join in

3. CHOOSE the right answer.
1) A new app that lets people give just $1 to _____.
a. different charity;
b. different charitable;
c. different charities;
d. different charismas.
2) You're presented with several projects to which you can donate $1 _____.
a. with one flick;
b. with one click;
c. with one lick;
d. with one slick.
3) Google hopes to start providing the service around _____.
a. the world soonish;
b. the world sooner;
c. the world soon;
d. the world soonest.
4) We look forward to continuing to improve the _____.
a. One Today experiences;
b. One Today experience;
c. One Today experiential;
d. One Today experienced.
5) … growing our dynamic community with incredible _____.
a. not-profit organisations;
b. no-profit organisations;
c. noon-profit organisations;
d. non-profit organisations.
6) Google has a long-standing commitment to _____.
a. supporting non-profit;
b. supporting non-profitable;
c. supporting non-profiting;
d. supporting non-profits.
7) It also makes giving simple and _____ .
a. fun for usages;
b. fun for users;

c. fun for user;
d. fun for using.
8) It also hopes people will share their favourite projects on _____.
a. social media sites;
b. socially media sites;
c. social medium sites;
d. socially medium sites.
9) Engage with hundreds of non-profit projects each year and help contribute _____.
a. to their successes;
b. to their success;
c. to their successful;
d. to their successfully.
10) We're thrilled to provide a new _____.
a. platform which helps;
b. platform witch helps;
c. platform that helps;
d. platform this helps.

4. PUT THE WORDS IN THE RIGHT ORDER.
1. a new app The search engine giant Google has started.
2. projects you $1 Several which donate to can.
3. moment the At USA the in available only is it.
4. the providing world the soon service around Start.
5. experience Today One the improve to Continuing.
6. commitment to supporting non - profits A long - standing.
7. fun makes and users also simple for It giving.
8. the app will mean people can learn more Google believes.
9. share projects media will favourite social People their on.
10. great The basis daily a on do profits - non work.

5. ANSWER the questions.
A. 1. How often can One Today users see different charities?
2. How many clicks does it take to donate?
3. Where is One Today available?
4. Who is Maya Amoils?
5. What is Google looking forward to making better?
6. What is Google committed to supporting?
7. What can people learn more about with the app?
8. Where can users share their favourite projects?
9. What is Google amazed by?
10. What is Google happy to provide?

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B. 1. What springs to mind when you hear the word 'charity'?

2. Is there a difference between a charity and a non-profit?

3. What are your favourite charities and why?

4. What do you think of Google's One Today app?

5. Is $1 too little?

6. Can most people afford the occasional $1 donation?

7. Will you be downloading the app and helping non-profits?

8. Are you happy with the work charities do?

9. How often do you donate to charity?

6. $1: Rank these and share your rankings with your partner. Put who would get your $1 first at the top at the top. Change partners often and share your rankings.

• guide dogs for the blind	• old people's homes
• AIDS research	• international peace project
• save the gorillas	• mental health project
• women's rights	• water conservation project

7. ROLE PLAY: Choose a role and prepare a three-minute speech.

Role A – Save the Panda.

You think Save the Panda is the most important charity. Tell the others three reasons why. Tell them things that are wrong with their charity. Also, tell the others which is the least important of these (and why): Clean Water For All, Protect The Pyramids or The World Peace Project.

Role B – Clean Water For All.

You think Clean Water For All is the most important charity. Tell the others three reasons why. Tell them things that are wrong with their charity. Also, tell the others which is the least important of these (and why): Save the Panda, Protect The Pyramids or The World Peace Project.

Role C – Protect The Pyramids.

You think Protect The Pyramids is the most important charity. Tell the others three reasons why. Tell them things that are wrong with their charity. Also, tell the others which is the least important of these (and why): Clean Water For All, Save the Panda or The World Peace Project.

Role D – The World Peace Project.

You think The World Peace Project is the most important charity. Tell the others three reasons why. Tell them things that are wrong with their charity. Also, tell the others which is the least important of these (and why): Clean Water For All, Protect The Pyramids or Save the Panda.

8. ACADEMIC WRITING: We should all give a dollar a day to different charities. Write your opinion.

II. GRAMMAR REVISION

a) We can use an if-sentence to link an action and its effect. For example:
If you click on that (action), that'll just compact your C drive (effect).

b) The action is in the Present Simple and the effect is in the Present Simple or described using will, can or may depending how certain it is to follow.
If you click on that, that opens it up and shows you all your folders.

We use the action part of if-sentences, especially in spoken English, to give instructions in a polite way. The effect part is assumed.

If you bring your cursor down to the very bottom (you'll find the Start button).

If you just hit Enter (that will activate the program).

c) We can use an if-sentence to describe the possible effect of an imagined action. For example:
If you spilled coffee on your keyboard, you could damage it.

d) To show this describes imagined, not real events, the action is in the Past Simple and the effect is described using would, could, and might depending how certain it is to follow.
If there were no other folders there, you wouldn't have a little box in there.

1. Match the actions in Column A with appropriate effects from Column B. Then join each action and effect using an if-sentence.

1. you press Print Screen	a. you can drag it across the screen
2. you press Ctrl+Alt+Del in Windows XP	b. it would speed up the computer
3. you added more memory	c. you may lose data
4. you installed a modem	d. you would have more space at your desk
5. you used a better search engine	e. you would be able to connect to a telephone line
6. you forget to save regularly	f. you can make a copy of the screen
7. you hold down the mouse button over an icon	g. you would find more relevant results
8. you used an LCD display	h. it displays the Windows security dialog box

2. Describe the effects of these actions using an if-sentence.
1. You don't virus-check floppies.
2. There was a power cut while you were using your computer.
3. You install a faster processor.
4. You forgot your password.
5. You press the delete key.
6. You use a search engine.

7. You double-click on an icon.

8. You use power-saving options.

III. LISTENING PRACTICE

1. Listen to Lucy Boyd giving a training course on basic Excel and answer to the following questions.

1.1. What is a spreadsheet?

1.2. What are spreadsheets used for?

1.3. What type of data can be keyed into a cell?

1.4. What happens if you change the value of a cell?

2. Listen again and decide whether these sentences are true or false. Correct the false ones.

2.1. A spreadsheet displays information in the form of a table with a lot of columns and rows.

2.2. In a spreadsheet you can only enter numbers and formulae.

2.3. You cannot change the width of columns.

2.4. Spreadsheet programs can generate a variety of charts and graphs.

2.5. Spreadsheets cannot be used as databases.

IV. TRANSLATION

Translate into Russian in written form.

Database software

Database software is the phrase used to describe any software that is designed for creating databases and managing the information stored in them. Sometimes referred to as database management systems (DBMS), database software tools are primarily used for storing, modifying, extracting, and searching for information within a database. Database software is used for a number of reasons in any industry - from keeping your bookkeeping on task, compiling client lists to running your online Web site.

Because they have so many uses, there are dozens of database software programs available. The options have gone beyond Oracle or Microsoft Access to encompass FileMaker, Avanquest and Delicious Monster Software for options tailored to a variety of needs. Some of the more popular database software applications include desktop solutions like Microsoft Access and FileMaker Pro and server solutions like MySQL, Microsoft SQL Server and Oracle.

A database application is a computer program whose primary purpose is entering and retrieving information from a computerized database. Early examples of database applications were accounting systems and airline reservations systems, such as SABRE, developed starting in 1957.

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A characteristic of modern database applications is that they facilitate simultaneous updates and queries from multiple users. Some of the most complex database applications remain accounting systems, such as SAP, which may contain thousands of tables in only a single module. Many of today's most widely used computer systems are database applications, for example, Facebook, which was built on top of MySQL.

The Top Free and Open Source Database Software Solutions

CUBRID is a great free and open source option optimized specifically for web applications, useful when complex web services process large amounts of data and generate huge concurrent requests. This solution is implemented in C.

Firebird has been used in production systems (under a variety of names) since 1981 and features many ANSI SQL standards. It is capable of running on Linux, Windows, and various Unix platforms.

Made by the original developers of MySQL, MariaDB is used by tech giants like Wikipedia, Facebook, and even Google. MariaDB is a database server that offers drop-in replacement functionality for MySQL. Security is a top concern and priority for MariaDB developers, and in each solution release, the developers also merge in all of MySQL's security patches and enhance them if need be.

MongoDB was founded in 2007 and is known as the "database for giant ideas." Developed by the people behind DoubleClick, ShopWiki, and Gilt Groupe, MongoDB is also backed by popular investors such as Fidelity Investments, The Goldman Sachs Group, Inc., and Intel Capital.

MySQL has been around since 1995 and is now owned by Oracle. While open source, there are also several paid editions available that offer additional features, like cluster geo-replication and automatic scaling. Because MySQL is an industry standard, it's also compatible with just about every operating system and written in both C and C++. This solution is a great option for international users since the server can provide error messages to clients in multiple languages, encompassing support for several different character sets.

Self-proclaimed as the most widely deployed database in the world, SQLite began in 2000 and has been used by notable companies like Apple, Facebook, Microsoft, and Google. Each release is carefully tested to ensure reliability. Even if there are bugs, the developers of SQLite are honest about potential shortcomings by providing bug lists and chronologies of code changes for every release.

V. SPEAKING SKILLS

Prepare to speak on the topic "Database software systems" on the basis of the following text.

Top 9 Database Software Systems

Database is the backbone of today's business. From public sectors to high tech industries, the infrastructure of enterprise is nothing but data, - the storage,

transaction, and analytic of data. For IT professionals, Database is ever a big deal. No matter what you do in IT, certain levels of database knowledge and skills are definitely required. This page provides an updated list of the most powerful database systems which empower today's enterprise businesses around the world:

Oracle Enterprise Server, designed for grid computing, is the best RDBMS, running on multiple platforms, with the latest version 12c, in which the "c" is for cloud computing. In the IT industry, Oracle is "THE DATABASE." If you want to become a database administrator (DBA), make sure you are the Oracle DBA, and you are all set for your career. Oracle has the unshakeable market share in database field with big corporations, government agencies, and mission-critical data centers running on Oracle database in the Real Application Cluster (RAC) environment. Job opportunities with Oracle database are always there.

DB1 is the database management system that delivers a flexible and cost-effective database platform to build robust on demand business applications. The DB2 Universal Database (UDB) Enterprise Server Edition (ESE) is one of the best RDBMS. IBM positions DB2 as the database of choice for robust, enterprise-wide solutions handling high-volume workloads. and optimized to deliver industry-leading performance while lowering costs. DB2 is used by many big insuance companies, for example, VSP, the leading vision insurance company, run its entire business on DB2. While DB2 is not likely to overperform Oracle in market share, it is definitely securred in the second position.

Microsoft SQL Server is a comprehensive database software platform providing enterprise-class data management and integrated business intelligence (BI) tools. Even though as a late starter in database, Microsoft has made strategic investments to push its SQLServer to the frontline to compete with Oracle and DB2 head-to-head. As the foundation of Microsoft's comprehensive data platform, SQL Server delivers breakthrough performance for mission-critical applications, using in-memory technologies, faster insights from any data to any user in familiar tools like Excel, and a resilient platform for building, deploying, and managing solutions that span on-premises and cloud. Microsoft offers deep discounts to education sectors including public schools, universities, and public agencies in education, which helped SQLServer gain user base significantly.

SAP Sybase ASE formerly Sybase, is a high-performance, mission-critical database management system that gives customers an operational advantage by lowering costs and risks. Sybase used to be one of the big 3 database giants (with Oracle and DB2) dominating the database field, but Sybase lost its momentum overtime, and eventually was sold out to SAP really cheap. Sybase database was widely used in banking industry, such as Wells Fargo Bank. It is unclear what would be the future outlook of SAP/Sybase database product since it depends on how SAP plan to position the ASE. Currently SAP Adaptive Server Enterprise (SAP Sybase ASE) is marketed as the affordable relational database management system (RDBMS) designed for high-performance transaction-based applications involving massive

volumes of data – and thousands of concurrent users. In short, SAP/Sybase database is still a significant player, but its future is unclear.

Teradata with an interesting tagline, - "When the world gets smaller, the data gets bigger," is the most powerful Very Large Database (VLDB) system. Nowadays the concept of VLDB has shifted to Big Data which focuses on the value of data for business decision-making. Many large scale data warehousing and business intelligence systems are powered by Teradata. Teradata database is often used by big retailers and telecom enterprises. Teradata offers some unique features: the intelligent optimizer to process queries and filter data to efficiently respond to any request, applying that query power to dynamic data without adding columns to your table to accept new data.

Software AG is the maker of Adabas. Adabas once was the most powerful mainframe database, now runs in multiple platforms, and provides superior reliability and performance. Software AG says that Adabas is the comprehensive and scalable enterprise database management system optimized for big data and designed for reliability, high performance and low total cost of ownership. Available for mainframe, Linux®, UNIX® and Windows® (LUW) platforms. ADABAS is integrated with NATURAL, - Software AG's application development and deployment environment known for ease of-use, cross-platform portability and developer productivity.

My SQL, an open source database, is the most popular database for web-based business applications, and is moving to enterprise level. MySQL is the most popular database for internet systems such as e-commerce and dynamic website. If you run your own blog with Wordpress, you are using MySQL. Many of the world's largest and fastest-growing organizations including Facebook, Google, Adobe, Alcatel Lucent and Zappos rely on MySQL to save time and money powering their high-volume Web sites, business-critical systems and packaged software. MySQL is now in Oracle's hands but still maintains its independence.

FileMaker was the #1-selling easy-to-use database software for Windows and Mac OS. However, on the rise of Microsoft Access, FileMake has lost its competitive edge in the Windows environment, which forced FileMaker strategically build strength on the Mac platform. FileMaker, Inc., is now an Apple subsidiary, which may secure FileMaker's future supported by the strength of Apple products. FileMaker Server maximizes performance of shared databases while increasing security.

Microsoft Access is the most used desktop database application in Windows. Coming with the Microsoft Office suite, Access is cheap and accessible from most Windows laptops and workstations. Although mainly considered as a desktop database, Access becomes ever popular database for internet systems, - many e-commerce and content management systems is powered by Access database running on the Microsoft's IIS web server platform. Skills of Microsoft Access are always in demand, although the pay may not be great.

UNIT 6. COMMUNICATION NETWORKS

I. READING ACTIVITY

Read the text and do the tasks.

Internet safety lessons for 5-year-olds

A British organisation has recommended that children as young as five should be given instruction on the dangers of the Internet. The U.K. Safer Internet Centre is co-funded by the European Commission and delivers a wide range of activities and initiatives to promote the safe and responsible use of technology. Britain's National Society for the Prevention of Cruelty to Children (NSPCC) welcomed the advice and urged schools to provide appropriate guidance on Internet use. The NSPCC's Claire Lilley warned of the dangers youngsters faced by being online. She said: "We are facing an e-safety time bomb. Young people tell us they are experiencing all sorts of new forms of abuse on a scale never seen before."

The Safer Internet Centre published an online survey of children's reflections on the Internet on February 5th, to coincide with the UK's Safer Internet Day. The report summarizes the opinions of 24,000 schoolchildren. It found that 31% of seven to 11-year-olds said that gossip or mean comments online had stopped them from enjoying the Internet. Children also said they had been exposed to online pornography, experienced cyber-bullying and had been forced into sending indecent images of themselves to others. The report said: "Promoting a safer and better Internet for children…involves promoting their online rights - to be safe online, to report concerns and to manage their privacy."

1. TRUE / FALSE: Read the text. Guess if a-h below are true (T) or false (F).

a. The UK Safer Internet Centre gets all its money from British taxpayers.
b. The NSPCC is an organization that fights cyber crime worldwide.
c. A childcare official likened the Internet to a bomb waiting to explode.
d. The scale of abuse detailed in the report is nothing new.
e. The U.K. Safer Internet Centre published its report on Children's Day.
f. The researchers questioned 24,000 British schoolchildren.
g. Around a third of kids said gossip stopped them enjoying being online.
h. The UK Safer Internet Centre wants to promote children's online rights.

2. SYNONYM MATCH: Match the following synonyms from the article.

1. recommended;	a. looking at;
2 initiatives;	b. x-rated;
3. appropriate;	c. thoughts;

4. facing;	d. strategies;
5. abuse;	e. nasty;
6. reflections;	f. suitable;
7. mean;	g. urged;
8. exposed to;	h. worries;
9. indecent;	i. shown;
10. concerns	j. wrong

3. CHOOSE the right answer.
1) Children as young as five should _____ the dangers of the Internet.
a. be forgiven instruction on;
b. be giving instruction on;
c. be given instructions on;
d. be given instruction on.
2) … delivers a wide range of _____.
a. activity sand initiatives;
b. activities and initiative;
c. actively and initiates;
d. activities and initiatives.
3) … welcomed the advice and urged schools to _____ on Internet use.
a. provide appropriate guidance;
b. provide a proper rated guidance;
c. provide appropriate guides;
d. provides appropriation guidance.
4) We are facing an _____.
a. e-safety time bomb;
b. i-safety time bomb;
c. i-safety clock bomb;
d. e-safety ticking bomb.
5) All sorts of new forms of _____ never seen before.
a. a views on a scale;
b. abuse on a sale;
c. beauties on a scale;
d. abuse on a scale.
6) … an online survey of children's _____ Internet.
a. reflection on the;
b. reflections in the;
c. reflections on the;
d. reflections of the.
7) … _____ online had stopped them from enjoying the Internet.
a. gossip or mean comments;
b. gossiping or mean comments;

c. gossip or meant comments;

d. gossip or mean commented.

8) Children also said they had been _____ pornography.

a. exposed at online;

b. exposed to online;

c. exposed on online;

d. exposed two online.

9) … forced into sending _____ themselves to others.

a. in decent images of;

b. in descent images of;

c. indecent images of;

d. indecent images for.

10) … report concerns and to _____.

a. manage their privacy;

b. manages that privacy;

c. manage their piracy;

d. manage their private.

4. PUT THE WORDS IN THE RIGHT ORDER.

1. given Children as be young should instruction as five.

2. the of safe technology and responsible Promote use.

3. appropriate provide to schools Urged guidance.

4. being The youngsters by online dangers faced.

5. never New abuse scale before of a seen forms on.

6. reflections children's of survey online an Published.

7. comments online Gossip had or stopped mean them.

8. images into of sending themselves indecent Forced.

9. and better Promoting Internet a for safer children.

10. privacy their manage to and concerns Report.

5. ANSWER the questions.

A. 1. What did an organization recommend for 5-year-olds?

2. Where does the U.K. Safer Internet Centre get some of its money from?

3. What is the NSPCC?

4. What did Claire Lilley say we face?

5. What are we experiencing on a never before seen scale?

6. When is Safer Internet Day?

7. How many kids participated in the survey?

8. What two things stopped kids from enjoying the Internet?

9. What have kids been forced into sending to other people?

10. What does the U.K. Safer Internet Centre want kids to manage?

B. 1. How was your very first experience of the Internet?

2. What are the good things about the Internet?
3. Have you had any bad experiences on the Internet?
4. From what age should children be allowed on the Internet?
5. What are the dangers of a child going online unsupervised?
6. What should children learn at school about the Internet?
7. What do you think the "e-safety time bomb" in the article referred to?
8. If a child gets in trouble online, is it the parents' fault?
9. What kind of online rights should children enjoy?

6. DANGERS: What are the dangers of the Internet? Rank these and share your rankings with your partner. Put the biggest at the top.

• identity theft	• indecent images
• loss of credit card information	• people posting gossip about you
• phishing	• sexual predators
• cyber-bullying	• bad eyesight

7. ROLE PLAY: Choose a role and prepare a three-minute speech.
Role A – 5-year-old.
You really want to use the Internet. Tell the others three reasons why. However, you are very worried about using the Internet. Tell the others three reasons why. You think it's very unfair if 5-year-olds are stopped from going online. You think it is probably safe enough.
Role B – Parent.
You do not want your 5-year-old to go online. Tell the others three reasons why. You think it is too young to go online. There are plenty of books and games for your child instead of the Internet. Your kid should also be outside playing with his/her friends. Your child's parent is wrong about everything.
Role C – 5-year-old's teacher.
You are worried that your 5-year-old student's parent won't let him/her online. Tell the others three reasons why. Tell the parent it is essential for the child to go online, but in a safely controlled environment. The Internet has benefits he/she cannot get from books.
Role D – Internet expert.
You think it is OK for kids as young as three to go online, as long as their parents are with them. Children need a trusting guide to cyberspace. Children who do not go online will be digitally illiterate and will not be successful in life. You think the parent's views are from the 19th century.

8. ACADEMIC WRITING: The Internet has the potential to teach five-year-olds many things. Write about the advantages and disadvantages if such young children being online.

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II. GRAMMAR REVISION

a) Relative clauses with a participle are often used in technical descriptions. They allow you to provide a lot of information about a noun using as few words as possible. For example:
Computers equipped with wireless NICs.
A modem providing access to the Internet.
b) We can use the passive participle. For example:
Computers which are equipped with wireless NICs.

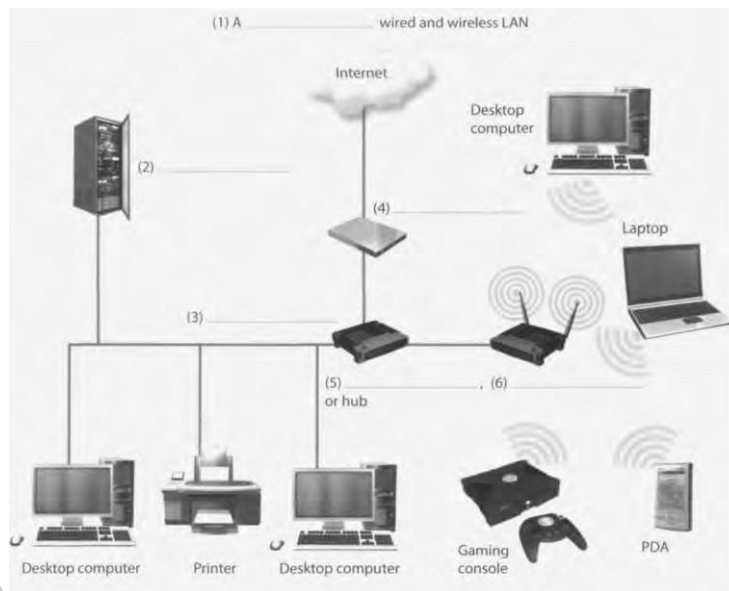**1. Complete the definitions with the correct participle of the verb given in brackets.**
1. A gateway is an interface (enable) dissimilar networks to communicate.
2. A bridge is a hardware and software combination (use) to connect the same type of networks.
3. A backbone is a network transmission path (handle) major data traffic.
4. A router is a special computer (direct) messages when several networks are linked.
5. A network is a number of computers and peripherals (link) together.
6. A LAN is a network (connect) computers over a small distance such as within a company.
7. A server is a powerful computer (store) many programs (share) by all the clients in the network.
8. A client is a network computer (use) for assessing a service on a server.
9. A thin client is a simple computer (comprise) a processor and memory, display, keyboard, mouse, and hard drives only.
10. A hub is an electronic device (connect) all the data cabling in a network.

III. LISTENING PRACTICE

1. Listen to an extract from a lecture on networks and answer these questions.
1.1. What does LAN stand for?
1.2. Where are LANs usually located?
1.3. What is the difference between a wired LAN and a wireless LAN.

2. Listen again and label the elements of this LAN.

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(1) A _____ wired and wireless LAN

Internet

Desktop computer

(2) _____

(4) _____

Laptop

(3) _____

(5) _____ , (6) _____
or hub

Desktop computer   Printer   Desktop computer   Gaming console   PDA

IV. TRANSLATION

Translate into Russian in written form.

Communication networks

Communication networks based on serial data transmission are the platform of up-to-date automation systems. Whether this is office automation or automation of manufacturing or process plants, the task remains always the same, exchanging data between different devices or participants within a system. Communication networks provide a number of advantages over systems in which a point-to-point line enables only two participants to communicate with each other.

Classification of communication networks depending on the application, i.e. manufacturing, process, office or building automation, the communication tasks to be performed vary in complexity and are sometimes even contradictory. The use of only one communication network would therefore not yield optimum results. So the market offers very different networks and bus systems that are more or less tailored to a specific application. A quite general classification criterion is the distance over which communication takes place. There are local networks, LANs (Local Area Networks), as well as widely distributed networks, WANs (Wide Area Networks). With LAN, emphasis is put on fast and powerful data exchange within a locally restricted area, whereas WAN must be able to transmit data on very different data media and over several thousand kilometers.

The Internet is an example for a wide area network. This network is a world wide group of greatly varying communication networks which in turn can comprise many subnetworks. Due to the increasing connection of LANs to the Internet, data which was only locally available is now available at any place in the world. Latest developments enable plants using field bus communication to be remotely monitored and operated via commercially available Internet browsers.

Selection criteria for communication systems

The communication ability of a device says nothing about its performance and versatility. It is only an indicator for the exchange of information between of two devices minimum. To exactly describe the performance and estimate the usability of a communication system, many more aspects must be taken into consideration. Technical and functional aspects alone are still not sufficient to select an appropriate communication system. Availability and exchangeability of the components as well as economic aspects need to be considered. The following criteria are essential when selecting a communication system: physical properties (e.g. transmission speed), functional aspects (e.g. noise immunity, exchangeability), application range (e.g. hazardous environments), popularity on the market (e.g. price, acceptance) and state of standardization (e.g. exchangeability). Depending on the respective application, each selection criterion must be analyzed and evaluated individually. The examples in the following list show how single requirements determine the necessary properties of the communication system: - Depending on the application, bidirectional (in both directions) or unidirectional (in one direction) data exchange could be necessary. - Processes with high dynamics require sufficiently high data rates. - To implement real-time capable process control units, appropriately short response times must be guaranteed (deterministic system). - Optimum use of the network can only be achieved when the size of the data telegrams matches the actual length of the message. - The processing of messages of varying importance can be simplified by using prioritized data transmission.

V. SPEAKING SKILLS

Prepare to speak on the topic "Communication networks" on the basis of the following texts.

The Internet

In a relatively short period of time, the Internet has had an amazing impact on almost every facet of our lives. With it, we are able access to new ideas, more information, unlimited possibilities, and a whole new world of communities. It has grown and evolved to influence how we interact, how we conduct business, how we learn, and how we proceed day to day. And as much as it has changed our lives, in the process, the Internet itself has changed too.

People have dreamt of a universal information database since late nineteen forties. In this database, not only would the data be accessible to people around the world, but it would also easily link to other pieces of information, so that only the most important data would be quickly found by a user. Only recently the new technologies have made such systems possible. The most popular system currently in use is the World-Wide Web (WWW) which began in March 1989. The Web is an Internet-based computer network that allows users on one computer to access

information stored on another through the world-wide network.

As the popularity of the Internet increases, people become more aware of its colossal potential. The World-Wide Web is a product of the continuous search for innovative ways of sharing information resources. The WWW project is based on the principle of universal readership; "if information is available, then any person should be able to access it from anywhere in the world." The Web's implementation follows a standard *client-server* model. In this model, a user relies on a program (the client) to connect to a remote machine (the server), where the data is stored. The architecture of the WWW is the one of clients, such as Netscape, Mosaic, or Lynx, "which know how to *present* data but not what its origin is, and servers, which know how to *extract* data", but are ignorant of how it will be presented to the user.

One of the main features of the WWW documents is their *hypertext* structure. On a graphic terminal, for instance, a particular reference can be represented by underlined text, or an icon. "The user clicks on it with the mouse, and the referenced document appears." This method makes copying of information unnecessary: data needs only to be stored once, and all referenced to it can be linked to the original document.

Types of communication networks

Various computer network configurations are possible, depending on the needs of an organization. Local area networks (LANs) join computers at a particular site, such as an office building or an academic campus. Metropolitan area networks (MANs) cover a limited densely populated area and are the electronic infrastructure of "smart cities." Wide area networks (WANs) connect widely distributed data centres, frequently run by different organizations. Peer-to-peer networks, without a centralized control, enable broad sharing of content. The Internet is a network of networks, connecting billions of computers located on every continent. Through networking, users gain access to information resources, such as large databases, and to other individuals, such as coworkers, clients, friends, or people who share their professional or private interests. Internet-type services can be provided within an organization and for its exclusive use by various intranets that are accessible through a browser; for example, an intranet may be deployed as an access portal to a shared corporate document base. To connect with business partners over the Internet in a private and secure manner, extranets are established as so-called virtual private networks (VPNs) by encrypting the messages.

A massive "Internet of things" has emerged, as sensors and actuators have been widely distributed in the physical environment and are supplying data, such as acidity of a square yard of soil, the speed of a driving vehicle, or the blood pressure of an individual. The availability of such information enables a rapid reaction when necessary as well as sustained decision making based on processing of the massive accumulated data.

UNIT 7. COMPUTERS AND BUSINESS

I. READING ACTIVITY

Read the text and do the tasks.

Don't use dangerous Galaxy Note

Samsung, the South Korean tech giant, has warned owners of the Galaxy Note 7 to turn off their phone after more reports of the device catching fire. The company will also stop shipping the flagship phone to stores. The device, launched in August, was set to rival Apple's iPhone. Samsung engineers must now conduct an investigation into what is causing so many phones to catch fire. Samsung had already been hit following a recall of 2.5 million phones in September after many burst into flames when their batteries exploded. This new episode further damages the company's credibility as many of the exploding phones are those that had batteries replaced in September and were deemed to be safe.

Industry analysts are now predicting how much the latest trouble will cost the company. South Korean media is reporting that the company could discontinue producing the phone. However, South Korea's finance minister Yoo Il-ho has warned that the country's exports would be damaged if it did this. He said: "Right now we can't tell what the impact will be in the long term.

It's up to the company and the government cannot interfere, but if they do scrap the model, it will have a negative impact on exports." The Korea Times said: "It is urgent that the company recover its brand image and the only way to do this is to place quality and customer satisfaction above anything else."

1. TRUE / FALSE: Read the text. Guess if a-h below are true or false.
a. The article says Samsung has phoned all Galaxy Note owners.
b. Samsung will stop sending the Galaxy Note to shops.
c. The Galaxy Note 7 was released in August.
d. Batteries that Samsung said were safe caught fire.
e. Analysts are predicting how much customers will have to pay Samsung.
f. South Koreas finance minister said exports would be unharmed.
g. The foreign minister said the government should get involved.
h. A newspaper said Samsung needed to work on customer satisfaction.

2. SYNONYM MATCH: Match the following synonyms from the article.

1. warned;	a. effect;
2. device;	b. blew up;
3. rival;	c. pressing;
4. exploded;	d. opponent;

5. deemed;	e. abandon;
6. predicting;	f. contentment;
7. impact;	g. cautioned;
8. scrap;	h. forecasting;
9. urgent;	i. gadget;
10. satisfaction	j. considered

3. CHOOSE the right answer to complete the sentence.
1) Samsung, the South Korean _____.
a. techie giant;
b. tech gigantic;
c. tech giant;
d. techno giant.
2) … turn off their phone after more reports of the device _____.
a. catch in fire;
b. catching fire;
c. catch chin fire;
d. catching fiery.
3) The device, launched in August, was set to _____ iPhone.
a. rivals Apple's;
b. rivalry Apple's;
c. libel Apple's;
d. rival Apple's.
4) This new episode further damages the _____.
a. company's incredulity;
b. company's credibility;
c. company's credit ability;
d. company's credible utility.
5) … those that had batteries replaced in September and were _____.
a. deemed to be safe;
b. doomed to be safe;
c. damned to be safe;
d. teamed to be safe;
6) Industry analysts are now predicting how much the latest _____.
a. troubled will cost;
b. trouble will costs;
c. trouble will cost;
d. troubling will cost.
7) Right now we can't tell what the impact will be _____.
a. in the long time;
b. in the long term;
c. in the long team;

d. in the long tram.

8) It's up to the company and the government _____.

a. cannot interference;

b. cannot interferes;

c. cannot interfered;

d. cannot interfere.

9) It is urgent that the company recover _____.

a. its bland image;

b. its brand image;

c. its braid image;

d. its bard image.

10) ... place quality and customer satisfaction above _____.

a. anything else;

b. anything ails;

c. anything ills;

d. anything easel.

4. PUT THE WORDS IN THE RIGHT ORDER.

1. off turn to 7 Note Galaxy the of owners Warned phone their.

2. phone stop The shipping company the will flagship also.

3. to phones many so causing is what into investigation An fire catch.

4. Many exploded batteries their when flames into burst.

5. new This credibility company's the damages further episode.

6. how will much cost the Now latest predicting trouble.

7. company the could phone discontinue The producing.

8. be it The would if this exports damaged did country's.

9. impact the what tell can't We term long the in be will.

10. is the its It that recover image urgent company brand.

5. ANSWER the questions.

A. 1. Where will Samsung stop sending the Galaxy Note?

2. What was the Samsung Galaxy Note meant to rival?

3. How many phones were recalled in September?

4. What does this new episode damage about Samsung?

5. What did Samsung deem phones that exploded in September to be?

6. Who is predicting how much the latest trouble will cost Samsung?

7. Who warned that South Korea's export industry could be damaged?

8. Who cannot interfere with what Samsung is doing?

9. What did the Korea Times say Samsung needs to recover?

10. What kind of satisfaction must Samsung place above anything else?

B. 1. What do you think of the company Samsung?

2. What do you think is the best smartphone and why?

3. What would life be like without a mobile phone?

4. What will Samsung's competitors think of this?

5. How damaging is this for Samsung?

6. What will the company do if it no longer makes the Galaxy Note?

7. Should Korea's government step in and help Samsung?

8. How dangerous is technology?

9. How can Samsung recover its brand image?

6. TECH COMPANIES: What are the strengths and weaknesses of these companies? What advice do you have for them? Complete this table with your partner(s).

	Strengths	Weaknesses	Advice
Samsung			
Apple			
Google			
Facebook			
Amazon			
Wikipedia			

7. ROLE PLAY.

Role A – Smartphone.

You think a smart phone is the best device. Tell the others three reasons why. Tell them things that are wrong with their devices. Also, tell the others which is the least useful of these (and why): a drone, a hover board or a microwave oven.

Role B – Drone.

You think a drone is the best device. Tell the others three reasons why. Tell them things that are wrong with their devices. Also, tell the others which is the least useful of these (and why): a smart phone, a hover board or a microwave oven.

Role C – Hover board.

You think a hover board is the best device. Tell the others three reasons why. Tell them things that are wrong with their devices. Also, tell the others which is the

least useful of these (and why): a drone, a smart phone or a microwave oven.

Role D – Microwave oven.

You think a microwave oven is the best device. Tell the others three reasons why. Tell them things that are wrong with their devices. Also, tell the others which is the least useful of these (and why): a drone, a hover board or a smartphone.

8. ACADEMIC WRITING.

Technology has made our lives a lot safer. What do you think?

II. GRAMMAR REVISION

a) We use would in conditional sentences. For example:

If you spilled coffee on the keyboard, you would damage it.

b) Often the condition is implied, not stated. For example:

(If I had time) I'd like to build in new links.

(If I had to make a choice) my favourite site would have to be the Internet Movie Database.

c) What is the implied condition in this sentence?

I would look at other sites too for good ideas.

1. Complete the gaps in this dialogue with *will* or *would*.

A. What … you do when you finish your diploma?

B. I … like to take a course in multimedia.

A. How long … that take?

B. If I choose the certificate, it … take 6 months but if I chose the master's, it … take a full year.

A. What … be the advantage of the master's?

B. I guess I … have better job prospects.

A. When … you decide?

B. It depends on my finals. If I do well, I … go for the master's.

d) We can show how actions are linked in time by using time clauses.

e) We can use *when* to show that one action happens immediately after another action.

When you click on a URL, your browser sends it to a DNS server.

f) We can use *once* in place of *when* to emphasize the completion of the first action. It often occurs with the Present Perfect. For example:

Once the DNS server has found the IP address, it sends the address back to the browser.

g) We can use *until* to link an action and the limit of that action:

The packets are passed from router to router until they rich the Web server.

h) We can use *before* to show that one action precedes another:

The packets may travel by different routes before they reach the Web server.

i) We can use as to link two connected actions happening at the same time:

As the individual packets reach the Web server, they are put back together again.

2. Link these sentences using an appropriate time clause.

1. a) you click the mouse pointer on the file.

b) It is highlighted.

2. a) You can't save a file.

b) You name it.

3. a) The files are transferred.

b) The transfer is graphically displayed.

4. a) Make sure you have all the details of your set up.

b) You phone the help line.

5. a) The OK button is clicked.

b) The copying process begins.

6. a) The percentage of file transferred is displayed.

b) Your browser downloads from the Internet.

7. a) The virus is not activated.

b) You open the infected file.

8. a) You repair a PC.

b) Ensure the machine is disconnected.

9. a) Don't open an e-mail attachment.

b) You have virus-checked it.

10. a) You add memory.

b) Change the BIOS settings.

III. LISTENING PRACTICE

1. Listen to Tony Clark, an expert in computer ergonomics, talking to some office workers about health and safety. What health problems associated with computer use do the office workers mention?

2. Listen again and complete these extracts.

2.1. Get a good chair, one that _____ your lower back and is _____.

2.2. Make sure your feet rest firmly _____ or on a footrest.

2.3. Position the keyboard ____ your elbows, with your arms _____ the work surface.

2.4. …position the monitor at, or just below_____.

2.5. You should sit at _____ from the front of the monitor, about 50 to 70 centimetres away.

2.6. … a kind of stand that lets you move the monitor____ so you can use it at the correct angle and height.

IV. TRANSLATION

Translate into Russian in written form.

Advantages of computers in business

Computers have tremendously improved the way businesses operate in their respective industries. Technology has advanced so remarkably that those who are not using computers in their business are at a major disadvantage against their

competitors. In particular, there are several important advantages that computers can provide to small businesses.

Computers allow the application of different types of software that can help businesses keep track of their files, documents, schedules and deadlines. Computers also allow businesses to organize all of their information in a very accessible manner.

Computers have made staff and companies more self-sufficient by allowing them to do tasks that previously had to be outsourced. For example, a company can now use office software to create their own training material. Desktop publishing software can be used to create marketing materials. Online tax and accounting programs allow companies to prepare their own taxes. This allows the dominant operations of a company to remain in-house and empowers the company to become more independent and less susceptible to errors committed by outside parties.

Emerging technology makes new tools and services more affordable and allows companies to save on their staff payroll and office equipment. Because computers allow work to be done faster and more efficiently, it is possible for a company to hire fewer staff.

Computers help speed up other business operations. The collecting of consumer feedback, ordering of raw materials, and inspection of products is made quicker through the use of computers, allowing companies to operate much faster and to produce better quality results. Research and development costs will also decrease with the help of computers. Scientific research can now be done using the Internet and computer software applications designed to develop and produce new products and services.

Importance of computers in business

In an age of booming technology, running a business without computers is like trying to breathe without lungs. Like it or not, technology has become an integral part of the way business is done. Retail and wholesale business have increasingly come to rely on computers' advanced ability to keep track of inventory and assist in ordering more when stocks get low.Personal computers have helped workers in business perform their jobs more efficiency, since their introduction in the 1980s. Routine functions such as sending memos can instead be done by email. Workers can research information from the Internet with a click of the button. The importance of computers in business also has many other positive benefits in the work force.

The importance of computers in business includes money saved for various business activities. For example, a small business can maintain a database of customers in its computer. The business can then send coupons or special promotions to these customers by email. Companies also save on paper costs when interacting through their computers.

Computers also help the businessman save time. For example, a businessman can write a report, do a spell check, edit it and distribute the report in just a few hours – even long distance.

Computers in business allow for greater interaction among employees, agencies, clients and customers. Managers can conduct conference calls, show training videos and even conduct webinars or web-based seminars online with computers.

Small companies and business owners can appear much more professional and even larger by using computers. Various publishing or document software enable small managers to type of professional-looking documents. Small companies can also create websites that rival those of large corporations. Consequently, a small business may sometimes acquire clients more easily because of the company's computer-enhanced image.

V. SPEAKING SKILLS

Prepare to speak on the topic "Computers and business" on the basis of the following text.

USES FOR COMPUTERS IN BUSINESS

Almost every business uses computers to complete daily tasks. From making contact with clients to inputting data for reports, computers allow businesses a more efficient way to manage affairs when compared to traditional paper and manila folders. Businesses use a variety of different types of computers such as desktops, laptops, servers, smartphones and tablets, depending on their needs. With computers, employees are able to work anytime, anywhere.

Communication is key when gaining and maintaining clients and other important contacts. Computers give businesses access to email, instant messaging and custom customer contact systems. Computerized phone systems allow for automated support during off hours and a virtual operator can quickly direct callers to the correct department for faster support.

Computers allow businesses to create websites, stunning ads and complete marketing campaigns. Marketing videos can be edited and custom ads created in-house with the use of specialized software. Businesses can completely develop and manage websites with their own servers or connect remotely to a third-party business to upload their latest content such as articles, product images and blog posts.

Accounting without computers presents a high risk for human error. Accounting software allows businesses to simply input their financial data and instantly see gains and losses. All necessary tax reports are available the moment the data is entered. Using computers for invoicing, managing expenses and calculating payroll is vital for ensuring financial data is as accurate as possible.

Instead of filing cabinets, businesses are able to store millions of files using computers and servers. Data can be stored centrally for easy access from multiple computers or stored locally for individual use. Computerized storage saves space and provides a far more efficient organization strategy. With encryption, passwords and replace keys, data remains secure.

Most businesses have some sort of productivity software which typically includes a word processor and spreadsheet application. These two programs allow businesses to create reports, memos, tutorials and even colorful ads for company events. Spreadsheet applications give businesses the chance to organize, manage and calculate both numeric and alphabetic data. With charts and graphs, reporting becomes visual instead of text-based.

Businesses use computers to help educate employees on software, company policy, standard procedures and safety. Instead of hiring teachers, computers can be used to educate employees at their own pace or through an online webinar with live questions and answers. This form of education fits the busy schedules of businesses without sacrificing the quality of the education.

From learning more about the competition to discovering what customers really want, research isn't as difficult as it once was, thanks to computers. Search engines, forums, social networks and industry specific websites provide businesses with a wealth of information and research data.

UNIT 8. COMPUTER COMMUNICATION

I. READING ACTIVITY

Read the text and do the tasks.

What is Wap?

Wap stands for 'wireless application protocol' which allows users to send emails and access information from the Internet on a mobile phone. This has been made possible by technological advances in 'bandwidths': the amount of data that can be received or sent within a fraction of a second. This means that it can be used for many more purposes than were previously imagined, including video transmission.

Spread

Some analysts reckon that Wap phones will overtake PC as the most common way of surfing the Internet, although PCs will still be used for more complex applications such as spreadsheets and video players.

Life span

Some industry experts believe that Wap will have a limited lifespan and will quickly be replaced by more sophisticated technology, such as General Packet Radio Service (GPRS) and the Universal Mobile Telecommunications System (UMTS). GPRS increases the bandwidth still further and allows you to send up to ten times more information than Wap technology. However, users will still be limited by the size and resolution of the screen on which the data is received.

One analyst, Jakob Nielsen, advises companies to forget Wap and plan, instead, for the next generation of phones. He believes that mobile phones are going to become more like palmtop computers.

Language

A Wap phone cannot dial into every website. The language of the Web is HTML – hypertext markup language. Wap operates on WML - wireless markup language, so Wap phone can only read pages written in WML, because the screen on a Wap phone is so small that you are unable to read a normal webpage. WML pages tend to consist of small chunks of information. Soon, however, most webpages will be written in XML – extensible markup language. This can be programmed to ensure that every phone or PC receives transmissions in the language it understands.

Internet

Wap allows you to deliver online services to a handheld computer. People are also expected to use Waps to access online news and financial services, sports scores and entertainment information, most of which you should be able to reach by scrolling down a set menu bar. You will also be able to book tickets by Wap.

E-mail

Sending email is likely to be the application that is used most often, as people will be able to pick up messages at anytime from anywhere in the world.

Games

Gambling and games, some of which can be downloaded, are also expected to be popular with users. But you can, of course, use the Wap to make regular phone calls.

1. TRUE / FALSE: Read the text. Guess if a-h below are true or false.

a. Wap allows users to send emails and access information from the Internet on a mobile device.

b. Bandload is the amount of data that can be received or sent within a fraction of a second.

c. Wap operates on WML - wireless markup language, because the screen size on a Wap phone.

d. Jakob Nielsen insists on companies to plan Wap for the next generation of phones.

e. A Wap phone is able to dial into every website.

f. Wap phones can be used to access online services.

g. XML-language enables every phone or PC to receive transmissions in the language it understands.

h. The Wap isn't designed to make regular phone calls.

2. SYNONYM MATCH: Match the following synonyms from the article.

1. application;	a. guarantee;
2. allow;	b. recommend;
3. ensure;	c. believe;
4. advise;	d. portable;
5. reckon;	e. program;
6. handheld;	f. move (up, down, across);
7. scroll;	g. standard;
8. regular;	h. connected to the Internet;
9. online;	i. section;
10. chunk	j. enable

3. CHOOSE the right answer to complete the sentence.

1. Bandwidth is the amount of data that can be received or sent _____ a fraction of a second.

a. for;

b. during;

c. within;

d. by.

2. GPRS increases the bandwidth still _____.

a. farther;

b. further;

c. father;

d. feather.

3. Wap allows you to deliver online services____ a handheld computer.

a. on;

b. for;

c. from;

d. to.

4. He believes that mobile phones are going to become more like____ computers.

a. palmtop;

b. laptop;

c. pulptopm;

d. lamptom.

5. Sending email is____ to be the application that is used most often.

a. like;

b. unlikely;

c. likely;

d. unlike.

6. Users will still be_____ by the size and resolution of the screen on which the data is received.

a. limiting;

b. limitless;

c. unlimit;

d. limited.

7. This means that it can be used for____ purposes.

a. many more;

b. much more;

c. more many;

d. much many.

8. Wap will quickly be replaced_____ more sophisticated technology.

a. on;

b. to;

c. with;

d. by.

9. People use Waps to____ online services.

a. assess;

b. access;

c. success;

d. possess.

10. People will be able to___ messages at anytime from anywhere in the world.

a. pick up;

b. pick on;

c. look up;
d. look at.

4. ANSWER the questions.

A. 1. What is the predicted Wap phone use by 2005?

2. What developments have made this technology possible?

3. How can you access a favourite website easily?

4. How can one time slot be shared by many users?

5. What peripheral can be attached to some phones?

6. Why cannot Wap phones access all websites?

B. 1. How much money do you spend on your mobile?

2. Can you send MMS (multimedia messages) from your mobile?

3. Do you access the Internet from your mobile? Which sites do you visit?

4. Can you listen to music and watch TV on your mobile?

5. Do you use your mobile phone for business? Do you think it is secure to carry out financial transactions via mobile phones?

6. Do you ever use your phone while driving?

7. Have you ever had to use your phone in an emergency?

8. Do you think that prolonged use of mobile phones can affect our health (for example cause fatigue and headaches, emit radiation, excite brain cells, etc.)?

5. ROLE PLAY.

In pairs, describe your mobile phone.

Use the Useful language box below to help you.

LCD screen, Brand, Built-in camera, Changeable faceplate, SIM card (Subscriber Identity Module), Wireless support, Keypad, Ringtone, The best feature is..., I never use the... I mostly use it for...

6. ACADEMIC WRITING: Write the description of the network in the picture.

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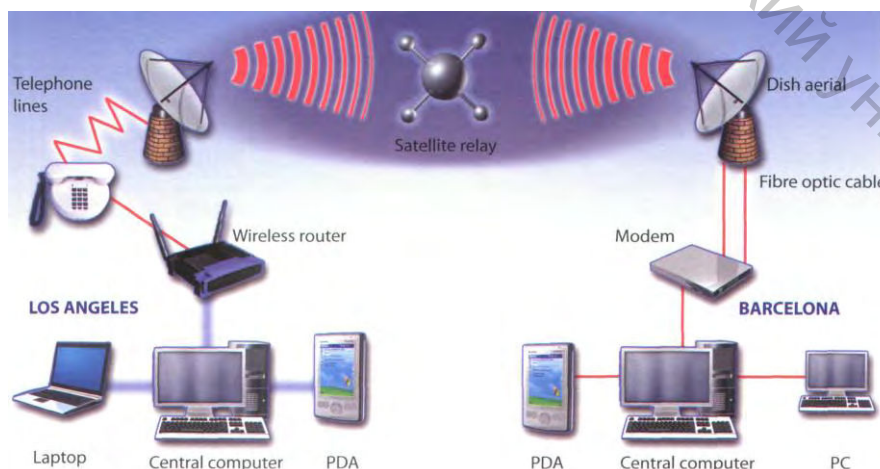
II. GRAMMAR REVISION

a) In the first conditional we use *if* plus the present simple to create the condition, and the future simple tense (*will* + bare infinitive) to describe a probable result of the condition.

Thus, the structure is: "*If* + present simple tense, *will* + infinitive."

"If I see him, I *will* tell him."

b) To create the second conditional, we use the past simple tense after the *if* clause, followed by *would* + the bare infinitive for the result of the condition.

"If I won the lottery, I could buy a new house."

c) To form the third conditional, we use the past perfect tense for the *if* conditional clause, and *would have* + the past participle of the verb for the hypothetical outcome.

"If I had been more prepared, I would have passed that test."

1. Translate the Conditional sentences.

A. 1. If you try very hard you can master any language. 2. If you want to master any language you must know at least three thousand words. 3. You will improve your pronunciation if you read aloud every day. 4. Time will be saved if one uses a computer. 5. If you learn all the words of the lesson you will write your test successfully. 6. If you or I add up two numbers of six figures without a calculator, it will take us a lot of time.

B. 1. It would be a good thing if you didn't smoke. 2. If the earth didn't rotate it wouldn't have the shape of a ball. 3. If I had the time I should help you to solve the problem. But I must be off. 4. I should translate the article without difficulty if I knew English well. 5. If I were in your place I should learn to speak English fluently. 6. Were you asked to explain why addition is performed the way it is, you would probably have to think for a while before answering.

C. 1. I decided to stay at home last night. I would have gone out if I hadn't been so tired. 2. Had he not been busy, he wouldn't have missed that conference. 3. Why didn't you phone me yesterday? I would have helped you. 4. If you had attended preliminary courses, you would have passed you examinations more successfully. 5. Had the manager had this information before, he would have acted differently. 6. The binary system is particularly appropriate to the nature of an electric machine; if it had not existed, computer designers would have had to invent it.

III. LISTENING PRACTICE

1. Listen to an interview with Sue Reid, a specialist in telecommunications. What is her prediction about the future of VoIP?

2. Listen again and answer these questions.
2.1. What exactly is VoIP?
2.2. Does the recipient need any special equipment?
2.3. What is an ATA? What is its function?
2.4. What is the advantage of Wi-Fi phones over mobile phones?
2.5. Do you need to have a VoIP service provider?
2.6. What is *spit*?

IV. TRANSLATION

Translate into Russian in written form.

Online Services

I'm frequently asked which online service is 'best', but the answer is there is no best. Rating a particular service over another is entirely subjective. Price is important to some people, while the number of files available for download is important to others. Because of these and so many other different judgments, there can be no absolute. It all comes down to individual needs and preferences.

Still, users tend to be fiercely loyal to their 'home' online service-which is usually the first online service they ever used. They tend to judge all other online services based on this first service - often preventing themselves from seeing the advantages of a specific service. For my part, I like all the services I use and I'm on two dozen.

Each offers one or more products or features that either do not exist elsewhere or are superior to the same features on other services. And I've a really subjective reason for being on one service – I use it to send monthly articles to magazines in Japan.

So, the real answer to the question is simple: the best online service is the service that has what you want and is easy for you to use. The point? Keep an open mind when checking out an online service. Judge it based on what it offers and how it meets your needs – not in comparison to what you're used to using. (It takes a couple of sessions to shake preconceived notions of what an online service 'should' be.)

Eventually, we're all going to be interlinked, no matter which service we use, in what DIALOG'S Richard Ream calls a 'network of networks'.

Until then, most of us have to go to more than one service to find everything we need.

Analog and digital transmission

The older telephone systems function on the basis of analog signals representing voice modulation patterns which are represented by variations in wave forms. When, using telephone lines for transmitting data by terminal to a computer, the digital signals from the terminal need to be converted to analog signals by an acoustic coupler or modem prior to transmission. A modem is a device which serves a dual

purpose because it acts as a MOdulator (digital to analog) and DEModulator (analog to digital), hence the name MODEM. An analog communication system requires a modem at either end of the communication line. When the signals are received by the distant computer, the signals are reconverted to digital form prior to being input for processing.

Analog transmission has been in use for many years as the basis of telephone technology and is very effective for this purpose, but it is not so suitable for high-speed transmission of information. Digital transmission consists of electrical pulses representing data in binary code as a series of on/off pulses. A number of different codes exist, some of which are based on a 6-, 7-, or 8-bit structure. ASCII Ls a 7-bit code and EBCDIC is an 8-bit code. The codes represent characters, transmission control signals, information separators, and device control. Digital technology has a number of advantages compared to analog, including higher transmission speed, lower incidence of errors, and the facility for mixing data consisting of voice, image, and text on the same circuit. It is for this reason that data transmissions will be increasingly digital in the future. A network structure known as Integrated Services Digital Network (ISDN) facilitates these aspects.

V. SPEAKING SKILLS

Prepare to speak on the topic "Computer Communication" on the basis of the following text.

What are telecommunications?

Telecommunications refers to the transmission of signals over a distance for the purpose of communication. Information is transmitted by devices such as the telephone, radio, television, satellite, or computer networks. Examples could be two people speaking on their mobile phone, a sales department sending a fax to a client, or even someone reading the teletext pages on TV. But in the modern world, telecommunications mainly means transferring information across the Internet, via modem, phone lines or wireless networks.

Because of telecommunications, people can now work at home and communicate with their office by computer and telephone. This is called teleworking it has been predicted that about one third of all work could eventually be performed outside the workplace. In call centres, assistance or support is given to customers using the telephone, email or online chats. They are also used for telemarketing, the process of selling goods and services over the phone.

Digital TV and radio

In recent years, TV and radio broadcasting has been revolutionized by developments in satellite and digital transmission. Digital TV is a way of transmitting pictures by means of digital signals, in contrast to the analogue signals used by traditional TV. Digital TV offers interactive services and pay multimedia - that is, it

can transmit movies and shows to TV sets or PCs on a pay-per-view basis. It is also widescreen, meaning programmes are broadcast in a native 16:9 format instead of the old 4:3 format. Digital TV provides a better quality of picture and sound and allows broadcasters to deliver more channels.

Digital Terrestrial TV is received via a set-top box, a device that decodes the signal received through the aerial. New technologies are being devised to allow you to watch TV on your mobile. For example, DMB (Digital Multimedia Broadcasting) and DVB-H (Digital Video Broadcast-Handheld) can send multimedia (radio, TV and data) to mobile devices. Audio programs (music, news, sports, etc) are also transmitted in a digital radio format called DAB (Digital Audio Broadcasting).

Mobile communications

Thanks to wireless connectivity, mobile phones and BlackBerrys now let you check your email, browse the Web and connect with home or company intranets, all without wires. The use of GPS in cars and PDAs is widespread, so you can easily navigate in a foreign city or find the nearest petrol station. In the next few years, GPS chips will be incorporated into most mobile phones. Another trend is wearable computers Can you imagine wearing a PC on your belt and getting email on your sunglasses? Some devices are equipped with a wireless modem, a keypad and a small screen; others are activated by voice. The users of wearable technology are sometimes even called cyborgs! The term was invented by Manfred Clynes and Nathan Kline in 1960 to describe cybernetic organisms - beings that are part robot, part human.

UNIT 9. INFORMATION SYSTEMS

I. READING ACTIVITY

Read the text and do the tasks.

Scientists test WiTricity – Wireless Electricity

A team of US researchers has come up with an electricity system that does not need wires. This is a breakthrough in what will hopefully be a wireless future. The scientists, from the Massachusetts Institute of Technology, lit a 60-watt light bulb using magnetic fields. In the test, the power source was just two metres away from the light, but the team hopes they will soon be able to send electricity longer distances through the air. They have dubbed their new invention "WiTricity", or wireless electricity. Although wi-fi has been around for some years now, it has been limited to the transmission of information, especially between computers and modems, printers and scanners. This is the first time electrical appliances have been powered wirelessly.

This new development means that our houses may be free from tangled wires. Gone will be the days of having to unplug the vacuum to go from room to room, and of having countless plugs hidden behind the TV and stereo. The new source of delivering power to gadgets remotely may also reduce the number of fires caused by poor wiring and overloaded sockets. It turns out the concept is not so new. A century ago, inventor Nikola Tesla struck upon the idea of building a huge tower in New York that would wirelessly beam power to the city. Unfortunately, his idea never came to fruition, until today, that is. It will still be a while before we have wireless homes and offices. Safety experts will be checking closely to ensure the power source causes us no harm.

1. TRUE / FALSE: Read the text. Guess if a-h below are true or false.
a. Scientists have tested a radio that doesn't have wires inside it.
b. In another test, scientists lit 60 different light bulbs.
c. Scientists have sent electricity two metres through the air.
d. Wi-fi is a concept that first originated at the end of last year.
e. The invention of WiTricity signals the end of vacuum cleaners.
f. WiTricity may reduce the number of household electrical fires.
g. An inventor struck upon the idea of WiTricity a hundred years ago.
h. Wireless offices and homes will be with us before the year is out.

2. SYNONYM MATCH: Match the following synonyms from the article.

1. come up with;	a. completion;
2. breakthrough;	b. gadgets;

3. dubbed;	c. spread;
4. transmission;	d. jumbled;
5. appliances;	e. faulty;
6. tangled;	f. invented;
7. poor;	g. send out;
8. struck upon;	h. called;
9. beam;	i. revolution;
10.fruition	j. thought of

3. CHOOSE the right answer to complete the sentence.
1. A team of US researchers has come____ with an electricity system that does not need wires.

    a. down;

    b. up;

    c. over;

    d. under.

2. This is a breakthrough____ what will hopefully be a wireless future.

    a. in;

    b. on;

    c. out;

    d. by.

3. They have ____ their new invention "WiTricity", or wireless electricity.

    a. duped;

    b. dabbled;

    c. daubed;

    d. dubbed.

4. Although wi-fi has been around for____ years now, it has been limited to the transmission of information.

    a. few;

    b. sometime;

    c. some;

    d. any.

5. This is the first time electrical appliances have been powered___.

    a. wired;

    b. wirelessly;

    c. wireless;

    d. wires.

6. The new source of delivering power to gadgets remotely may also reduce the number of fires caused by____ wiring and overloaded sockets.

    a. destitute;

    b. broke;

    c. meager;

d. poor.

7. A century ago, inventor Nikola Tesla struck _____ the idea of building a huge tower in New York that would wirelessly beam power to the city.

a. upon;

b. gold;

c. in;

d. up.

8. Unfortunately, his idea never came to _____, until today.

a. fruitiness;

b. fruitful;

c. fruition;

d. fruity.

9. Safety experts will be checking closely to_____ the power source causes us no harm.

a. pleasure;

b. censure;

c. reassure;

d. ensure.

4. ANSWER the questions.

A. 1. What do you think about the idea of WiTricity?

2. Is your room full of plugs, cables and wires?

3. How much of a breakthrough do you think WiTricity is?

4. Do you think WiTricity means we will be living in a science fiction world?

5. Will WiTricity make your daily life easier?

6. What else would you like to send through the air, besides electricity?

7. Do you already make use of wi-fi devices?

8. What do you think of the name "WiTricity"?

9. Do you think WiTricity will result in people using less power?

10. Do you ever get fed up with electric wires?

B. 1. How many plugs do you think there are in your house?

2. Would you sleep better at night knowing WiTricity has reduced the risk of electrical fires?

3. Why do you think Nikola Tesla's idea of wireless electricity never came to fruition?

4. What would you call your autobiography and why?

5. Are you looking forward to the age of wireless homes and offices?

6. Do you think WiTricity could cause problems to your health?

5. WI-TRICITY: With your partner(s), decide which of these things you would like to have no power cords. How would 'wirelessness' make using these things better? Change partners and share your findings.

- lamps
- vacuum cleaners
- fridges
- TVs

- computers
- games consoles
- telephones/fax machines
- other _____

6. ROLE PLAY.

Your government wants to give \$100,000,000 to a company to research WiTricity. Should the company get the money?

Team up with classmates who have the same role as you. Develop your roles and discuss ideas and "strategies".

Role A – WI-TRICITY INVENTOR.

You think your invention is one of the greatest ever. It will revolutionize the way we live. There will be huge energy savings. Fewer people will die in house fires. Old and disabled people will be able to move around more.

THINK OF MORE REASONS WHY YOU SHOULD GET THE CASH

Role B – OLD PERSON.

You can't wait for WiTricity. You have great trouble bending down to put plugs in sockets. You have tripped over wires many times and broken bones. There was nearly an electrical fire in your house last year.

THINK OF MORE REASONS WHY WI-TRICITY WILL HELP YOU

Role C – SAFETY EXPERT.

You are 100% convinced that WiTricity is a huge danger. The amount of electricity in the air will cause many health problems. It will also cause more fires as the WiTricity builds up in heat patches. The idea should be abandoned.

THINK OF MORE REASONS WHY WI-TRICITY IS BAD

Role D – ENVIRONMENTALIST.

You think the government should not waste money on making the lives of rich people more comfortable. This will only encourage laziness and poor health. This grant should go to aid poor people in developing countries.

THINK OF REASONS WHY THE INVENTORS SHOULD NOT GET THE CASH

Change roles and repeat the role play. Comment in groups about the differences between the two role plays.

7. ACADEMIC WRITING: Write an article about wireless electricity. Discuss the merits of having wireless homes and offices.

II. GRAMMAR REVISION

a) One of the most straightforward ways of using the subjunctive mood is when we want to describe a wish for something to be different than it is or was. We generally construct these sentences using the word *wish*, followed by the verb of the desired action.

b) For a wish about a situation in the present, we use the past tense equivalent of the verb:

"I wish it weren't Monday. I wish I didn't have to go to work."

c) For past wishes, we go back in the past one tense further.

Situation: "I'll miss my appointment because I left the house late." (past simple tense)

"I wish I had left the house earlier." (past perfect tense)

d) When we talk about someone's continued behavior that we wish were different, we either use would + the desired verb, or simply the past tense of the verb.

Situation: Your son is always leaving his clothes lying around the bedroom floor.

"I wish he would pick up his clothes off the floor when I asked him to."

1. Translate the sentences containing the Subjunctive Mood.

1. I should like to be a top specialist in computer technology. 2. It is necessary that the program should be debugged (отлажена) by a programmer. 3. It is required that the programmer should code the instructions of the program in the appropriate sequence. 4. The manager demanded that the work should be performed in time. 5. Write down the algorythm of computer operations lest you should make errors. 6. Our teacher speaks English as if he were a real Englishman. 7. Without the Sun there would be no light, no energy of any kind. 8.1 wish it were summer now and we could go to the seaside. 9. American scientists suggested that the quantum generator should be called *laser,* which is the acronym for fight amplification by stimulated emission of radiation. 10.1 wished you had mentioned these facts while the subject was being discussed.

III. LISTENING PRACTICE

1. Listen to two extracts from a monthly podcast called Money Matters. What is each speaker talking about?

Speaker 1_____. Speaker 2_____.

2. Listen again and make notes under these headings.

Speaker 1	Speaker 2
Things people buy online	Things you can do with online banking
Steps for buying online	Biggest issue with online banking
Precautions	Precautions

3. Listen again and complete the extracts with words from the box:

authorization, fake, internet auction, shopping cart, browse, log in, steal

3.1. Occasionally I also buy things on_____ sites such as eBay, where people offer and sell things to the highest bidder.

3.2. First you enter a site dedicated to e-commerce and_____ their products.

3.3. Then you put the items you want to buy into a virtual_____ – a program that lets you select the products and buy with a credit card.

3.4. You may have to____ with a username and a password ...

3.5. ... for some transactions, you will be required to use a TAN, a transaction_____ number.

3.6. Be aware of phishing - you may receive_____- emails claiming to be from your bank and asking for personal information or account details in an attempt to_____ your identity.

IV. TRANSLATION

Translate into Russian in written form.

Types of information systems

Information systems support operations, knowledge work, and management in organizations. Such systems can be more effective in the development and delivery of the firm's products and can be evaluated more closely with respect to the business outcomes.

Transaction Processing System are usually operated directly by shop floor workers or front line staff, which provide the key data required to support the management of operations. This data is usually obtained through the automated or semi-automated tracking of low-level activities and basic transactions.

Management Information Systems are management-level systems that are used by middle managers to help ensure the smooth running of the organization in the short to medium term. The highly structured information provided by these systems allows managers to evaluate an organization's performance by comparing current with previous outputs.

A Decision Support System can be seen as a knowledge-based system, used by senior managers, which facilitates the creation of knowledge and allow its integration into the organization. These systems are often used to analyze existing structured information and allow managers to project the potential effects of their decisions into the future.

Executive Information Systems are strategic-level information systems that are found at the top of the Pyramid. They help executives and senior managers analyze the environment in which the organization operates, to identify long-term trends, and to plan appropriate courses of action.

What is an ICT System?

An ICT system is a set-up consisting of hardware, software, data and the people who use them. It commonly includes communications technology, such as the Internet.ICT and computers are not the same thing. Computers are the hardware that is often part of an ICT system.

It is the power of computers and communications that has allowed ICT systems to become so important. Like any piece of equipment, the important thing about it is what it lets us do. ICT Systems are used in a number of environments, such as:offices, shops, factories, aircraft and ships. They're also used in fields such as: communications, medicine, farming.ICT Systems are everyday and ordinary, yet extraordinary in how they can add extra power to what we do and want to do.

The three main types of ICT system are:

Information systems

This type of ICT system is focused on managing data and information. Examples of these are a sports club membership system or a supermarket stock system.

Control systems

These ICT systems mainly control machines. They use input, process and output, but the output may be moving a robot arm to weld a car chassis rather than information.

Communications systems

The output of these ICT systems is the successful transport of data from one place to another.

V. SPEAKING SKILLS

Prepare to speak on the topic "Information System" on the basis of the following texts.

INFORMATION SYSTEM

Information system, an integrated set of components for collecting, storing, and processing data and for providing information, knowledge, and digital products. Business firms and other organizations rely on information systems to carry out and manage their operations, interact with their customers and suppliers, and compete in the marketplace. Information systems are used to run interorganizational supply chains and electronic markets. For instance, corporations use information systems to process financial accounts, to manage their human resources, and to reach their potential customers with online promotions. Many major companies are built entirely around information systems. These include eBay, a largely auction marketplace; Amazon, an expanding electronic mall and provider of cloud computing services; Alibaba, a business-to-business e-marketplace; and Google, a search engine company that derives most of its revenue from keyword advertising on Internet searches.

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Governments deploy information systems to provide services cost-effectively to citizens. Digital goods—such as electronic books, video products, and software—and online services, such as gaming and social networking, are delivered with information systems. Individuals rely on information systems, generally Internet-based, for conducting much of their personal lives: for socializing, study, shopping, banking, and entertainment.

As information systems enabled more diverse human activities, they exerted a profound influence over society. These systems quickened the pace of daily activities, enabled people to develop and maintain new and often more-rewarding relationships, affected the structure and mix of organizations, changed the type of products bought, and influenced the nature of work. Information and knowledge became vital economic resources. Yet, along with new opportunities, the dependence on information systems brought new threats. Intensive industry innovation and academic research continually develop new opportunities while aiming to contain the threats.

Main components of information systems

The main components of information systems are computer hardware and software, telecommunications, databases and data warehouses, human resources, and procedures. The hardware, software, and telecommunications constitute information technology (IT), which is now ingrained in the operations and management of organizations.

Today throughout the world even the smallest firms, as well as many households, own or lease computers. Individuals may own multiple computers in the form of smartphones, tablets, and other wearable devices. Large organizations typically employ distributed computer systems, from powerful parallel-processing servers located in data centres to widely dispersed personal computers and mobile devices, integrated into the organizational information systems. Sensors are becoming ever more widely distributed throughout the physical and biological environment to gather data and, in many cases, to effect control via devices known as actuators. Together with the peripheral equipment – such as magnetic or solid-state storage disks, input-output devices, and telecommunications gear – these constitute the hardware of information systems. The cost of hardware has steadily and rapidly decreased, while processing speed and storage capacity have increased vastly. This development has been occurring under Moore's law: the power of the microprocessors at the heart of computing devices has been doubling approximately every 18 to 24 months. However, hardware's use of electric power and its environmental impact are concerns being addressed by designers. Increasingly, computer and storage services are delivered from the cloud – from shared facilities accessed over telecommunications networks.

Computer software falls into two broad classes: system software and application software. The principal system software is the operating system. It manages the hardware, data and program files, and other system resources and provides means for

the user to control the computer, generally via a graphical user interface (GUI). Application software is programs designed to handle specific tasks for users. Smartphone apps became a common way for individuals to access information systems. Other examples include general-purpose application suites with their spreadsheet and word-processing programs, as well as "vertical" applications that serve a specific industry segment – for instance, an application that schedules, routes, and tracks package deliveries for an overnight carrier. Larger firms use licensed applications developed and maintained by specialized software companies, customizing them to meet their specific needs, and develop other applications in-house or on an outsourced basis. Companies may also use applications delivered as software-as-a-service (SaaS) from the cloud over the Web. Proprietary software, available from and supported by its vendors, is being challenged by open-source software available on the Web for free use and modification under a license that protects its future availability.

Telecommunications are used to connect, or network, computer systems and portable and wearable devices and to transmit information. Connections are established via wired or wireless media. Wired technologies include coaxial cable and fibre optics. Wireless technologies, predominantly based on the transmission of microwaves and radio waves, support mobile computing. Pervasive information systems have arisen with the computing devices embedded in many different physical objects. For example, sensors such as radio frequency identification devices (RFIDs) can be attached to products moving through the supply chain to enable the tracking of their location and the monitoring of their condition. Wireless sensor networks that are integrated into the Internet can produce massive amounts of data that can be used in seeking higher productivity or in monitoring the environment.

Extensive networking infrastructure supports the growing move to cloud computing, with the information-system resources shared among multiple companies, leading to utilization efficiencies and freedom in localization of the data centres. Software-defined networking affords flexible control of telecommunications networks with algorithms that are responsive to real-time demands and resource availabilities.

Many information systems are primarily delivery vehicles for data stored in databases. A database is a collection of interrelated data organized so that individual records or groups of records can be retrieved to satisfy various criteria. Typical examples of databases include employee records and product catalogs. Databases support the operations and management functions of an enterprise. Data warehouses contain the archival data, collected over time, that can be mined for information in order to develop and market new products, serve the existing customers better, or reach out to potential new customers. Anyone who has ever purchased something with a credit card – in person, by mail order, or over the Web – is included within such data collections.

Massive collection and processing of the quantitative, or structured, data, as well

as of the textual data often gathered on the Web, has developed into a broad initiative known as "big data." Many benefits can arise from decisions based on the facts reflected by big data. Examples include evidence-based medicine, economy of resources as a result of avoiding waste, and recommendations of new products (such as books or movies) based on a user's interests. Big data enables innovative business models. For example, a commercial firm collects the prices of goods by crowdsourcing (collecting from numerous independent individuals) via smartphones around the world. The aggregated data supplies early information on price movements, enabling more responsive decision making than was previously possible.

The processing of textual data – such as reviews and opinions articulated by individuals on social networks, blogs, and discussion boards – permits automated sentiment analysis for marketing, competitive intelligence, new product development, and other decision-making purposes.

Qualified people are a vital component of any information system. Technical personnel include development and operations managers, business analysts, systems analysts and designers, database administrators, programmers, computer security specialists, and computer operators. In addition, all workers in an organization must be trained to utilize the capabilities of information systems as fully as possible. Billions of people around the world are learning about information systems as they use the Web.

Procedures for using, operating, and maintaining an information system are part of its documentation. For example, procedures need to be established to run a payroll program, including when to run it, who is authorized to run it, and who has access to the output. In the autonomous computing initiative, data centres are increasingly run automatically, with the procedures embedded in the software that controls those centres.

UNIT 10. COMPUTER AND ITS USERS

I. READING ACTIVITY

Read the text and do the tasks.

IBM to invest in cloud services

International Business Machines (IBM) plans to invest \$1.2 billion to expand its cloud services. The computing and technology giant wants to bolster its presence in the next generation of cloud storage and other services. The project includes building 15 state-of-the-art data centres across the world. IBM is having to adapt quickly to move from a predominantly hardware-based company into one providing online services. It has experienced declining revenues for the past six quarters and urgently needs to reverse this trend. An IBM spokesman told reporters: "This is fundamental because this allows us global coverage." He added: "We are continuing to invest in where we think the growth areas are going to be."

Wikipedia says: "Cloud computing is a phrase used to describe a variety of computing concepts that involves a large number of computers connected through a real-time communication network such as the Internet." In reality, "the cloud" is a metaphor for the Internet. Clever marketing has created the concept of the cloud to create more sellable services. Users of cloud services keep their data and software on a server (a huge computer) of the company offering the cloud service. There is no need to download anything or store information on a home or work computer. Wikipedia outlines several deterrents to the widespread adoption of cloud computing, including security, reliability and issues surrounding privacy.

1. TRUE / FALSE: Read the text. Guess if a-h below are true (T) or false (F).
1. IBM is investing in new technology to bring rain to dry areas.
2. IBM will build 15 new high-tech data centres in the USA.
3. The company's revenue has been falling for the past 18 months.
4. A spokesman said IBM's plans will give them greater global reach.
5. Cloud computing has little to do with real-time communication.
6. Companies have exploited the concept of the cloud as something new.
7. Users of cloud computing keep their information on their own server.
8. Wikipedia said privacy was a problem with cloud computing.

2. SYNONYM MATCH: Match the following synonyms from the article.

1. expand;	a. mainly;
2. bolster;	b. disincentives;
3. state-of-the-art;	c. strengthen;

4. predominantly;	d. figure of speech;
5. fundamental;	e. grow;
6. variety;	f. requirement;
7. metaphor;	g. basic;
8. concept;	h. cutting-edge;
9. need;	i. idea;
10. deterrents	j.assortment

3. CHOOSE the right answer to complete the sentence.
1) The computing and technology giant wants to _____.
a. bolster its presents;
b. bolster its pretense;
c. bolster its presence;
d. bolster its pretenses.
2) … adapt quickly to move from a predominantly _____.
a. hardware-baste company;
b. hardware-biased company;
c. hardware-basted company;
d. hardware-based company.
3) It has experienced declining revenues for the _____.
a. past six quarterlies;
b. past six quota;
c. past six quarters;
d. past six quotas.
4) This is fundamental because this allows _____.
a. us global coverage;
b. us globe all coverage;
c. us globally coverage;
d. us glow ball coverage.
5) We are continuing to invest in where we think the _____.
a. growths areas are;
b. grow the areas are;
c. growth areas are;
d. grow with areas are.
6) A phrase used to describe a variety of _____.
a. computing concepts;
b. computing concept;
c. computing conceptions;
d. computing conceptions.
7) A large number of computers connected through a _____.
a. really-time communication;
b. reality-time communication;

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c. realism-time communication;

d. real-time communication.

8) Clever marketing has created _____.

a. this concept;

b. that concept;

c. the concept;

d. a concept.

9) Wikipedia outlines _____

a. several deterrence;

b. several deterrents;

c. several deter rants;

d. several deter ants.

10) … including security, reliability and issues _____.

a. surrounded privacy;

b. surround in privacy;

c. surround ding privacy;

d. surrounding privacy.

4. PUT THE WORDS IN THE RIGHT ORDER TO MAKE UP A SENTENCE.

1. expand invest its $1.2 cloud services IBM billion plans to to.

2. next generation of cloud storage Bolster its presence in the.

3. -the Building -art 15 data state centres across -of the world.

4. past It declining the quarters experienced for 6 has revenues.

5. we Invest to areas think in be are the where going growth.

6. - time communication network such as the Internet A real.

7. "the reality for cloud" In metaphor the a Internet is ,.

8. the Clever created of has concept cloud marketing the.

9. download to need no is There anything.

10. the computing widespread adoption Deterrents of to cloud.

5. ANSWER the questions.

A. 1. What does IBM want to expand?

2. What does IBM want to bolster?

3. What kind of company is IBM changing from?

4. What has declined in the past six quarters?

5. Where will IBM continue to invest?

6. What kind of communication is associated with cloud computing?

7. What is a metaphor for the Internet?

8. What is there no need to do with cloud computing?

9. What did Wikipedia outline?

10. How many deterrents are mentioned in the last sentence?

B. 1. What springs to mind when you hear the word 'cloud'?

2. What do you know about cloud computing?

3. Do you use or want to use any cloud services?

4. What do you think of IBM?

5. Why do you think IBM's revenues have been declining?

6. Is it important to you where you keep your data?

7. Where do you think growth areas will be in computing in the future?

8. What are the differences between the Internet and "the cloud"?

9. What will come after cloud computing?

6. ONLINE STUFF: Rank these and share your rankings with your partner. Put the most important at the top. Change partners often and share your rankings.

• privacy	• reliability
• storage space	• hacker-proof
• password security	• no ads
• download/upload speed	• easy to share

7. ROLE PLAY: Choose a role and prepare a three-minute speech.

Role A – Privacy.

You think privacy is the most important point for a cloud service. Tell the others three reasons why. Tell them things that are wrong with their points. Also, tell the others which is the least necessary of these (and why): storage space, protection against hackers or download speed.

Role B – Storage space.

You think storage space is the most important point for a cloud service. Tell the others three reasons why. Tell them things that are wrong with their points. Also, tell the others which is the least necessary of these (and why): privacy, protection against hackers or download speed.

Role C – Hacker-proof.

You think protection against hackers is the most important point for a cloud service. Tell the others three reasons why. Tell them things that are wrong with their points. Also, tell the others which is the least necessary of these (and why): storage space, privacy or download speed.

Role D – Download speed.

You think download speed is the most important point for a cloud service. Tell the others three reasons why. Tell them things that are wrong with their points. Also, tell the others which is the least necessary of these (and why): storage space, protection against hackers or privacy.

8. ACADEMIC WRITING: Compare and contrast storing your data on your computer or on "the cloud". Write your opinion.

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II. GRAMMAR REVISION

a) The present participle is the "-ing" form of a verb. This verb form is always the same, whether the verb is regular or irregular.

b) Unlike the present participle, the past participle form changes depending on the verb. The past participle of regular verbs ends in "-ed," and is generally the same as the simple past tense of the verb.

1. Translate the phrases, containing:
A. Participle I (Present Participle)

Computers using vacuum tubes; the machine calculating mathematical problems; the computer keeping instructions in its memory; binary code storing data and instructions; the vacuum tube controlling and amplifying electronic signals; computers performing computations in milliseconds; electronic . pulses moving at the speed of light; students coding the information by using a binary code; devices printing the information; keyboard terminals replacing vacuum tubes.

B. Participle II (Past Participle)

The given information; the name given to the machine; the coded data; the device used in World War II; the invention named ENIAC; the machine called EDVAC; instructions kept in the memory; the engine designed for storing data; data stored in a binary code; vacuum tubes invented by J. Neumann; the general-purpose machine proposed by Ch. Babbage; the ma-chine provided with the necessary facts.

2. Translate the sentences containing Participle I and Participle II as an adverbial modifier.

1. When entering the Internet, I always find a lot of interesting information. 2. Though never built Babbage's analytical engine was the basis for designing today's computers. 3. When written in a symbolic language programs require the translation into the machine language. 4. While operating on the basis of analogy analog computers simulate physical systems. 5. When used voltage represents other physical quantities in analog computers. 6. Being discrete events commercial transactions are in a natural form for a digital computer. 7. As contrasted with the analyst, the computer system architect designs computers for many different applications. 8. While dealing with discrete quantities digital computers count rather than measure. 9. When using a microcomputer you are constantly making choice — to open a file, to close a file, and so on. 10. As known all computer systems perform the functions of inputting, storing, processing, controlling, and outputting.

3. Open the brackets using the right form of the verb.

1. Computing is a concept (embraced; embracing; for embracing) not only arithmetics, but also computer literacy. 2. We can make the computer do what we want (inputted; to input; by inputting) signals (turning; turned; without turning)

switches on and off. 3. Computers have a means (by communicating; of communicating; communicated) with the user. 4. Computers work according to the instructions (giving; given; to give) to it by users. 5. The transistor (inventing; invented; for inventing) in 1948 completely changed the vacuum tubes.

III. LISTENING PRACTICE

1. Listen to four people talking about how they use computers at work. Write each speaker's job in the table.

Electrical engineer, secretary, librarian, composer.

Speaker	Job	What they use computers for
1		
2		
3		
4		

2. Listen again and write what each speaker uses their computer for.

IV. TRANSLATION

Translate into Russian in written form.

Memory

It is interesting to note that memory, one of the basic components of the computer, is often called storage. It stores calculation program, the calculation formulae, initial data, intermediate and final results. Therefore, the functions of the computer memory may be classified in the following way. Firstly, the computer memory must store the information transmitted from the input and other devices. Secondly, memory should produce the information needed for the computation process to all other devices of the computer.

Generally, memory consists of two main parts called the main, primary or internal, memory and the secondary, or external memory. The advantage of the primary memory is an extremely high speed. The secondary memory has a comparatively low speed, but it is capable of storing far greater amount of information than the main memory. The primary storage takes a direct part in the computational process. The secondary storage provides the information necessary for

a single step in the sequence of computation steps.

The most important performance characteristics of a storage unit are speed, capacity and reliability. Its speed is measured in cycle time. Its capacity is measured by the number of machine words or binary digits. Its reliability is measured by the number of failures per unit of time.

Output devices. Printers

Printers provide information in a permanent, human-readable form. They are the most commonly used output devices and are components of almost all computer systems. Printers vary greatly in performance and design. Printers are divided into character printers, line printers and page printers in order to identify three different approaches to printing, each with a different speed range.

Character printers print only one character at a time. A type-writer is an example of a character printer. One more example is an ink-jet printer. It sprays small drops of ink onto paper to form printed characters. The ink has a high iron content, which is affected by magnetic fields of the printer. These magnetic fields cause the ink to take the shape of a character as the ink approaches the paper.

Line printers are electromechanical machines used for high-volume paper output on most computer systems. Their printing speeds are such that to an observer they appear to be printing a line at a time. They are impact printers. Line printers have been designed to use many different types of printing mechanisms. Two of the most common print mechanisms are the drum and the chain. Drum printers use a solid, cylindrical drum, rotating at a rapid speed. Chain printers have their character set on a rapidly rotating chain called a print chain. Speeds of chain printers range from 400 to 2400 lines per minute.

Page printers are high-speed nonimpact printers. Their printing rates are so high that output appears to emerge from the printer a page at a time. A variety of techniques are used in the design of page printers. These techniques, called electrophotographic techniques, have developed from the paper copier technology. Laser-beam printers use a combination of laser beam and electrophotographic techniques to create printer output at a rate equal to 18000 lines per minute.

V. SPEAKING SKILLS

Prepare to speak on the topic "Computer and its users" on the basis of the following text.

APPLICATION OF PERSONAL COMPUTERS

Personal computers have a lot of applications, however, there are some major categories of applications: home and hobby, word processing, professional, educational, small business and engineering and scientific.

Home and hobby. Personal computers enjoy great popularity among

experimenters and hobbyists. They are an exciting hob-by. All hobbyists need not be engineers or programmers. There are many games that use the full capabilities of a computer to provide many hours of exciting leisure-time adventure.

The list of other home and hobby applications of PCs is almost endless, including: checking account management, budgeting, personal finance, planning, investment analyses, telephone answering and dialing, home security, home environment and climate control, appliance control, calendar management, maintenance of address and mailing lists and what not.

Word processing. At home or at work, applications software, called a word processing program, enables you to correct or modify any document in any manner you wish before printing it. Using the CRT monitor as a display screen, you are able to view what you have typed to correct mistakes in spelling or grammar, add or delete sentences, move paragraphs around, and replace words. The letter or document can be stored on a diskette for future use.

Professional. The category of professional includes persons making extensive use of word processing, whose occupations are particularly suited to the desk-top use of PCs. Examples of other occupations are accountants, financial advisors, stock brokers, tax consultants, lawyers, architects, engineers, educators and all levels of managers. Applications programs that are popular with persons in these occupations include accounting, income tax preparation, statistical analysis, graphics, stock market forecasting and computer modeling. The electronic worksheet is, by far, the computer modeling program most widely used by professionals. It can be used for scheduling, planning, and the examination of "what if situations.

Educational. Personal computers are having and will continue to have a profound influence upon the classroom, affecting both the learner and the teacher. Microcomputers are making their way into classrooms to an ever-increasing extent, giving impetus to the design of programmed learning materials that can meet the demands of student and teacher.

Two important types of uses for personal computers in education are computer-managed instruction (CMI), and computer-assisted instruction (CAI). CMI software is used to assist the instructor in the management of all classroom-related activities, such as record keeping, work assignments, testing, and grading. Applications of CAI include mathematics, reading, typing, computer literacy, programming languages, and simulations of real-world situations.

FINAL TEST

1. Choose the right word to fill in the gap.

1. The most common _____ for planning the program logic are flowcharting and pseudocode.

a) technologies;   b) technics;   c) techniques.

2. _____ was designed for dealing with the complicated mathematical calculations of scientists and engineers,

a) COBOL;   b) FORTRAN;   c) PL/I.

3. _____ is the foundation of any programming languages.

a) a set of rules;   b) a group of numbers;   c) a lot of instructions.

4. I / O _____ match the physical and electrical characteristics of input-output devices.

a) interchanges;   b) interfaces;   c) interpretations.

5. Letter-quality, dot-matrix and ink-jet printers are all _____ printers.

a) line;   b) page;   c) character.

6. The most common device used to transfer information from the user to the computer is the _____ .

a) keyboard;   b) printer;   c) modem.

7. Input-output units link the computer to its external

a) requirement;   b) development;   c) environment.

8. I / O devices can be classified according to their speed, visual displays being _____ devices.

a) high-speed;   b) medium-speed;   c) low-speed.

2. Match the word with its definition.

1. Computer	a) an electronic device accepting data processing results from the computer system;
2. Input	
3. Output	b) the unit performing arithmetic operations called for in the instructions;
4. Software	
5. Hardware	c) the unit coordinating all the activities of various components of the computer. It reads information, interprets instructions, performs operations, etc.;
6. Storage	
7. CPU	
8. CU	d) a set of programs designed to control the operation of a computer;
9. ALU	
10. Program	e) lists of instructions followed by the control unit of the CPU;
	f) an electronic device keying information into the computer;
	g) the unit holding all data to be processed, intermediate and final results of processing;
	h) visible units, physical components of a data processing system;
	i) the unit that directs the sequence of system operations,

	selects instructions and interprets them; j) a device with a complex network of electronic circuits that can process information, make decisions, and replace people in routine tasks

3. Translate the sentences containing the Infinitive, Gerund, Participle I, and Participle II.

1. The problems to be studied are of great importance. 2. The problem studied helped us understand many things. 3. To study the problem we must make some experiments. 4. To study the problem means to give answers to many questions. 5. Having studied the problem we could answer many questions. 6. The problem studied is unlikely to be of great interest. 7. Scientists studying the problem made a lot of experiments to get answers to the required questions. 8. The problem to have been studied last year will not help us to solve our task now. 9. Having been well prepared for the examination the pupils could answer all the questions the teacher asked them. 10. The problem to be discussed at the meeting requires careful consideration. 11. A printer is an example of a device to produce output in a human-readable format. 12. The high-speed devices to be used as secondary storage are both input and output devices. 13. The progress of electronics to have resulted in the invention of electronic computers was a breakthrough of the second part of the 20lh century. 14. When output is available, output interfaces must be designed to reverse the process and to adopt the output to the external environment. 15. The memory stores the instructions and the data to be quickly retrieved on demand by the CPU. 16. Computers to have been designed originally for arithmetic purposes are applicable for great variety of tasks at present. 17. The CPU of a computer to be arranged in a single or very small number of integrated circuits is called a microprocessor.

Final Quiz-game "Do you know more about computers"?

1. What are the main functional units of a digital computer?
2. What types of storage do you know?
3. What is a binary number system?
4. What is storage media?
5. How is storage capacity measured (in what units)?
6. What do you know of electronic memories?
7. What can you say about electromechanical memories?
8. How do you understand the term "access time"?
9. What is RAM/ROM?
10. What storage devices do you know?
11. What is the function of the CPU?

12. What two functional units does the CPU consist of?
13. What components does control unit include?
14. What devices have the arithmetic-logical unit?
15. What is the ALU function?
16. What is the function of CU?
17. What is the heart (brain) of a microprocessor?
18. What is the purpose of input devices?
19. How do you understand the term "input-output environment"?
20. What groups can I/O devices be classified according to their speed?
21. Name devices used for inputting information.
22. What is touch pad?
23. What is a scanner used for?
24. What types of printers do you know?
25. When did the first personal computer appear?
26. What differs PC from large computer systems?
27. What is a personal computer?
28. What are the main spheres of PC applications?
29. What professions are in great need of computers?
30. What is modem and what is it used for?
31. What is programming?
32. What is a program?
33. What techniques for planning the program logic do you know?
34. What do you understand by pseudocode?
35. What is a code?
36. What is the foundation of any programming language?
37. What programming languages do you know?
38. What is FORTRAN used for? Decode it.
39. What does COBOL serve for? Decode it.
40. What is WWW?

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