ФЕДЕРАЛЬНОЕ АГЕНТСТВО ЖЕЛЕЗНОДОРОЖНОГО ТРАНСПОРТА
Федеральное государственное бюджетное образовательное учреждение
высшего образования
Иркутский государственный университет путей сообщения
Сибирский колледж транспорта и строительства

МЕТОДИЧЕСКИЕ УКАЗАНИЯ К ПРАКТИЧЕСКИМ ЗАНЯТИЯМ
СГЦ.03 Иностранный язык в профессиональной деятельности
(очной формы)
3 курс
для обучающихся по специальности
09.02.01 Компьютерные системы и комплексы
базовая подготовка
среднего профессионального образования

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путей сообщения».

ПОЯСНИТЕЛЬНАЯ ЗАПИСКА

Практические занятия направлены на экспериментальное подтверждение теоретических положений, отнесены наряду с другими к основным видам учебных занятий.

В результате изучения дисциплины «Иностранный язык в профессиональной деятельности» обучающийся должен:

знать: лексический (1200-1400 лексических единиц) и грамматический минимум, необходимый для чтения и перевода (со словарём) иностранных текстов профессиональной направленности.

уметь:

понимать общий смысл четко произнесенных высказываний на известные темы (профессиональные и бытовые), понимать тексты на базовые профессиональные темы.

-участвовать в диалогах на знакомые общие и профессиональные темы;

- строить простые высказывания о себе и о своей профессиональной деятельности, кратко обосновывать и объяснять свои действия (текущие и планируемые);

-писать простые связные сообщения на знакомые или интересующие профессиональные темы, правила построения простых и сложных предложений на профессиональные темы.

Обучающийся должен обладать общими и профессиональными компетенциями:
ОК 01. Выбирать способы решения задач профессиональной деятельности применительно к различным контекстам;
ОК 02. Использовать современные средства поиска, анализа и интерпретации информации, и информационные технологии для выполнения задач профессиональной деятельности;
ОК 03. Планировать и реализовывать собственное профессиональное и личностное развитие, предпринимательскую деятельность в профессиональной сфере, использовать знания по финансовой грамотности в различных жизненных ситуациях;
ОК 04. Эффективно взаимодействовать и работать в коллективе и команде;
ОК 05. Осуществлять устную и письменную коммуникацию на государственном языке Российской Федерации с учетом особенностей социального и культурного контекста;
ОК 06. Проявлять гражданско-патриотическую позицию, демонстрировать осознанное поведение на основе традиционных общечеловеческих ценностей, в том числе с учетом гармонизации межнациональных и межрелигиозных отношений, применять стандарты антикоррупционного поведения;
ОК 07. Содействовать сохранению окружающей среды, ресурсосбережению, применять знания об изменении климата, принципы бережливого производства, эффективно действовать в чрезвычайных ситуациях;
ОК 08. Использовать средства физической культуры для сохранения и укрепления здоровья в процессе профессиональной деятельности и поддержания необходимого уровня физической подготовленности;
ОК 09. Пользоваться профессиональной документацией на государственном и иностранном языках.
На 3 курсе изучаются следующие темы и усваиваются следующие компетенции:

Наименование тем	Кол-во часов	Усвоенные компетенции
Системы обработки информации.	8 часов	ОК 06, ОК 04
Компьютерные системы	6 часов	ОК 06, ОК 04, ОК 01,
Свойства цифровых компьютеров	6 часов	ОК 01, ОК 02, ОК 04, ОК 05
Организация микрокомпьютерной системы	10 часов	ОК 01, ОК 02, ОК 04, ОК 06
Запоминающие устройства	10 часов	ОК 01, ОК 02, ОК 04, ОК 06

Тема 1. Системы обработки информации. Information processing systems.

Цель: изучить лексику по теме Системы обработки информации, повторить грамматический материал.
Содержание работы: тексты для чтения по данной теме, упражнения на усвоение и закрепление лексико-грамматического материала.
Задание: прочитать, перевести тексты, выписать и выучить новые лексические единицы, выполнить ряд предложенных упражнений на закрепление лексики и грамматического материала.

Практическая работа 1.

WHAT IS A COMPUTER?

A computer is a machine with an intricate network of electronic circuits that operate switches or magnetize tiny metal cores. The switches, like the cores, are capable of being in one or two possible states, that is, on or off; magnetized or demagnetized. The machine is capable of storing and manipulating numbers, letters, and characters (symbols).

The basic idea of a computer is that we can make the machine do what we want by inputting signals that turn certain switches on and turn others off, or magnetize or do not magnetize the cores.

The basic job of computers is processing of information. For this reason computers can be defined as devices which accept information in the form of instructions, called a program, and characters, called data, perform mathematical and/or logical operations on the information, and then supply results of these operations. The program, or part of it, which tells the computers what to do and the data, which provide the information needed to solve the problem, are kept inside the computer in a place called memory.

It is considered that computers have many remarkable powers. However, most computers, whether large or small, have three basic capabilities.

First, computers have circuits for performing arithmetic operations, such as: addition, subtraction, division, multiplication and exponentiation.

Second, computers have a means of communicating with the user. After all, if we couldn't feed information in and get results back, these machines wouldn't be of much use. Some of the most common methods of inputting information are to use terminals, diskettes, disks and magnetic tapes. The computer's input device (a disk drive or tape drive) reads the information into the computer. For outputting information two common devices used are: a printer, printing the new information on paper, and a cathode-ray-tube display, which shows the results on a TV-like screen.

Third, computers have circuits which can make decisions. The kinds of decisions which computer circuits can make are not of the type: "Who would win the war between two countries?" or "Who is the richest person in the world?" Unfortunately, the computer can only decide three things, namely: Is one number less than another? Are two numbers equal? And, Is one number greater than another?

A computer can solve a series of problems and make thousands of logical decisions without becoming tired. It can find the solution to a problem in a fraction of the time it takes a human being to do the job.

A computer can replace people in dull, routine tasks, but it works according to the instructions given to it. There are times when a computer seems to operate like a mechanical 'brain', but its achievements are limited by the minds of human beings. A computer cannot do anything unless a person tells it what to do and gives it the necessary information; but because electric pulses can move at the speed of light, a computer can carry out great numbers of arithmetic-logical operations almost instantaneously. A person can do the same, but in many cases that person would be dead long before the job was finished.

Exercise 1. Study the vocabulary. Put down the following words into your notebooks:
intricate – сложный, запутанный;
electronic circuit – электронная цепь/схема;
to operate switches – приводить в действие переключатели;
to store numbers – запоминать числа;
to manipulate – управлять/преобразовывать;
to input / to feed in – вводить (информацию);
to turn on = to switch on – включать;
to turn off = to switch of – выключать;
to process data – обрабатывать данные;
to supply – вводить/обеспечивать;
addition [s'difn] – сложение;

subtraction – вычитание;
division – деление;
multiplication – умножение;
exponentiation – возведение в степень;
user – пользователь;
input device – устройство ввода;
disk drive – дисковое запоминающее устройство, дисковод;
tape drive – запоминающее устройство на магнитной ленте;
cathode-ray tube – электроннолучевая трубка;
to make decisions – принимать решения;
instantaneously – мгновенно.

Exercise 2. Answer the following questions according to the text:
What is a computer?
What are the main functions of a computer?
In what way can we make the computer do what we want?
What is the basic task of a computer?
In what form does a computer accept information?
What is a program?
What are data?
What is memory?
What three basic capabilities have computers?
What is the function of an input device?
What devices are used for outputting information?
What decisions can the computer make?

Exercise 3. Find English equivalents in the text and put it down:
сложная сеть электронных цепей;
приводить в действие;
хранить (запоминать) числа;
обрабатывать символы;
размагничивать сердечники;
обработка информации;
символы, называемые данными;
выполнять математические операции;
сложение, вычитание, деление, умножение;
возведение в степень;
устройство ввода;
дисковод;
нудная рутинная работа;
электрические импульсы.

Практическая работа 2.

Exercise 1. Обсудите следующие вопросы в группах или парах.

- What can computers do?
- What can computers do that people can't?
- What can people do that computers can't?

Exercise 2. Просмотрите текст, найдите ответ на следующий вопрос: *«Почему **Персональный** компьютер называется устройством общего назначения?»* и расскажите об **ЭТОМ** на русском языке.

The computer that everyone thinks of first is typically the personal computer, or PC. Here is one way to think about your PC: "A PC is a general-purpose information processing device. It can take information from a person (through input devices like the keyboard and mouse), from a device (like a floppy disk or CD) or from the network (through a modem or a network card) and process it. Once processed, the information is shown to the user (on the monitor), stored on a device (like a hard disk) or sent somewhere else on the network (back through the modem or network card)."
A PC is a general-purpose tool built around a microprocessor. It has lots of different parts — memory, a hard disk, a modem, etc. — that work together. We have lots of special-purpose processors in our lives. An MP3 Player is a specialized computer for processing MP3 files. It can't do anything else. A GPS is a specialized computer for handling GPS signals. It can't do anything else. A Gameboy is a specialized computer for handling games, but it can't do anything else.
A PC can do it all because it is general purpose. "'General purpose" means that you can do many different things with a PC. You can use it to type documents, send e-mail, browse the Web and play games.

Exercise 3. Данные слова и выражения встречаются в тексте. Соедините английские слова и выражения с их русскими эквивалентами,

1. a general-purpose device	a. гибкий диск
2. a processing device	b. хранить информацию
3. a special-purpose processor	c. использовать
4. input devices	d. управлять, регулировать, манипулировать
5. a floppy disk	e. показывать информацию
6. a hard disk	f. устройство общего назначения
7. a keyboard	g. обрабатывающее устройство
8. to take information	h. означать
9. to process information	i. обрабатывать информацию
10. to show information	j. брать, принимать информацию
11. to store information	k. клавиатура
12. to send information	1. процессор специального назначения
13. to handle	m. устройства ввода
14. to mean	n. пользователь
15. to use	o. жесткий диск
16. a user	p. посылать информацию

Exercise 4. В следующих предложениях отсутствуют некоторые слова. Заполните пропуски словами, приведенными в упр. 3.

1. U ... is a person who uses a computer.
2. People can ... information on different devices like a hard or floppy disk.
3. A computer is a .... device.
4. MP3 Player is a
........device.
5. Our company produces different …..................., like keyboards and

mice.
6. The main computer function is to ... information.
7. A monitor is used to ... information to the user.
8. A computer ... a device that processes information.

Exercise 5.

а) Переведите следующие слова и выражения на русский язык, пользуясь текстом и упр. 3.

Персональный компьютер, устройство, устройство общего назначения, устройство специального назначения, принимать информацию, через устройства ввода, обрабатывать информацию, показывать информацию. посылать информацию, хранить информацию, жёсткий диск, гибкий диск, клавиатура, пользователь, процессор, сеть, специализированный компьютер, печатать документы, играть в игры.

б)   В парах потренируйтесь в переводе вышеуказанных слов и

выражений. Студент 1 называет слова по-русски, а студент 2

переводит их на английский язык. Потом можно поменяться.

Exercise 6. Сравните следующие предложения с предложениями, приведенными в тексте, и исправьте выделенные грамматические ошибки. Попробуйте дать объяснение данным ошибкам. Переведите предложения на русский язык.

 1. A P<u>C general</u>-purpose device. 2. The information <u>is show</u> to the user, <u>store</u> on device or send somewhere else on the network. 3. A P<u>C general</u> purpose tool building around microprocessor 4. An MP3 Player is specialized computer for process MP3 files. 5. It can't do not<u>hing</u> else. 6. "General purpose" <u>mean</u> that you can ilo many different things with a PC. 7. You can use it type documents, send e-mail, browse the Web and play in games.

Exercise 7. Переведите предложения на английский язык, обращая внимание на грамматические явления из упр. 6.
1. Персональный компьютер — это устройство общего назначения, а Winamp - это программа специального назначения. 2. Информация хранится на гибких и жестких дисках. 3. Информация может пересылаться по сети. 4. Персональный компьютер - это устройство общего назначения, построенное па основе микропроцессора.
5. Клавиатура - это устройство, используемое для ввода информации.
6. MP4 Player является специализируемой программой для обработки MP4 файлов. 7. Это означает, что он больше ничего не может делать. 8. Вы можете использовать это устройство для того, чтобы вводить информацию.

Exercise 8. Прочитайте текст ещё раз и определите, являются ли следующие предложения верными по смыслу. Если нет - исправьте.

1. When someone thinks of a computer it is usually a personal computer.
2. A PC is a general-purpose device and it can process only information. 3. A computer can't take information from a device. 4. A PC is a general purpose tool built round a microprocessor. 5. There are a lot of special-purpose devices in our life. 6. A PC can do a lot of things because it is special purpose.

Exercise 9.

а) Пользуясь текстом, составьте вопросы так, чтобы получились следующие ответы.
1. A general-purpose device.
2. From a person, from a device, from the network.

3. It is shown to the user, stored on a device or sent on the network.
4. Special purpose devices.
5. An MP3 player.
6. Because you can do a lot of things with it.
7. You can use it to type documents, send e-mail, browse the Web and play games.

б) Используйте полученные вопросы и ответы для составления диалога. Разыграйте следующую ситуацию. Представьте, что вы -студент одного из английских университетов. Вы обедаете в университетском кафе, к вам Подходит ваш друг с просьбой помочь в подготовке к семинару. Он задает вопросы по теме «Персональный компьютер - устройство общего назначения», вы отвечаете.

Exercise 10.
а) Закончите начатые предложения, пользуясь текстом.

1. A personal computer is a ...
2. It can take information from   from ..., from..., and ...
3. Once processed, the information is ...
4. A personal computer is a general purpose tool...
5. We have a lot of... in our lives, for example ...
6. They are called special-purpose devices because ...
7. Л PC can do it all because ...
8. "General purpose" means that ...
9. You can ...

б) Перескажите текст " A Personal Computer is a General-Purpose Device", представив, что вы - участник студенческой конференции по проблемам компьютерных технологий. Вам дали слово. Что бы вы ответили?
в) Ситуацию в упр. 106 можно повторить. Теперь можно добавить переводчика, который будет переводить вашу речь с английского языка на русский или с русского на английский.

Exercise 11. Переведите следующий текст на английский язык.

Сегодня компьютер используется во многих областях человеческой деятельности.
Компьютер рассчитывает конструкцию космического корабля, управляет его полетом. Компьютер предсказывает погоду. Он обрабатывает массу информации, получаемую как на Земле, так и из космоса - с искусственных спутников Земли.
Компьютер помогает проектировать новые автомобили, самолеты, заводы. Компьютер рассчитывает заработную плату на предприятиях.
Компьютер применяется и в школе. Он может заменить химическую лабораторию. С его помощью легко продемонстрировать, как работает паровой двигатель или как взлетает ракета. Он облегчает изучение иностранного языка.

Практическая работа 3.

Internet in daily life.

More and more people nowadays are interested in all events and getting some information very quickly. With the help of Internet, you can make it easily.
Back in the 1960th, at the time of cold war, Pentagon asked a question: "How can orders be issued to the armed forces in the U.S. were ravaged by a nuclear assault?" The communication ways at that time were telephone, which connected offices, radio and TV stations. They were very vulnerable to attack. Pentagon needed military systems that would continue to work even the

phones and radiohad broken down. In 1964 Paul Baran connected 4 computers in different parts of the USA and posted a message. You couldn't destroy Internet if some computers will be broken down, the rest will work well.

Nobody owns the Internet, and there is no organization which controls its use. Now millions of people around the world are logging into libraries, call up satellite weather photos, download computer programs and music, take part in discussion groups. Even the Presidents have their own Internet accounts.

In fact, anyone with modem connected to the phone line can enjoy Internet. The total number of people in Russia, who get into Internet, due the Putin's statistics, is 10 million. In the modern Europe this number is more than 200 million Internet users.

Internet users are unimpressed by television promise of 500 channel future. The Internet already delivers 100.000 channels for all interests. In future all techniques will be connected to the Internet. Now we can connect with Internet through mobile phones, palm computers etc.

Now we can be connected with all worlds everywhere: in the bus, underground and even on rth Pole.

Exercise 1.Choose the right answer:
1. Why do people use Internet?
    a) they want to get information quickly
    b) they are interested in all events
    c) they don't like watching TV
    d) there is no information about it
2. By the help of what organization internet appeared?
    a) Pentagon
    b) Arm Forces of the USA
    c) Military System
    d) Paul Baran
3. What did Paul Baran do?
    a) invented 4 computers
    b) linked 4 computers
    c) send a message
    d) went to different parts of the USA
4. The communication devices in 1960 were very…
    a) secure devices
    b) vulnerable to attack
    c) connected offices
    d) at the time of cold war
5. What organization controls Internet use?
    a) Pentagon
    b) Arm Forces of the USA
    c) Military System
    d) There is no organization controls it

Exercise 2. Find the equivalents to the following words and word-combinations from the text and use them in the sentences of your own:

интересуются всеми событиями –

получать некоторую информацию –во

времена холодной войны –

отдавать приказы вооруженным силам – разрушены в

результате ядерного нападения –очень уязвимы для

атаки –

будет сломан –

спутниковые фотографии погоды –

скачать компьютерные программы –

не впечатлило телевизионное обещание –

подключаться к Интернету –

через мобильные телефоны – карманные

компьютеры и т. д. – связаны со всеми

мирами повсюду –

Exercise 3. Ask 5-10 your own questions to the text.

Exercise 4. Translate the text and say whether these statements are true or false:

a) Nowadays people aren't interested in events and any information around theworld.

b) In 1964 Paul Baran connected 4 computers in different parts of the USA andposted a message.

c) The communication ways used nowadays are telephone, which connectedoffices, radio and TV stations.

d) It's impossible to destroy Internet if some computers will be broken down, therest will work.

e) In future all techniques will be connected to the Internet.

d) Now we can be connected with all worlds everywhere: in the bus, undergroundand even on the North Pole.

Exercise 5. **Retell the text.**

Exercise 6. Make a situation, using these words and expressions:
Types of computers
Three types of computers, mini-, micro-, mainframe computers, desktop, portable,multimedia computer, data, to process, powerful, expensive, small, large, to run, cheap, education, business.

Exercise 7. Role play: "You are at computer club"

Тема 2. Компьютерные системы. Computer systems.

Цель: изучить лексику по теме **Компьютерные системы**, повторить грамматический материал.

Содержание работы: тексты для чтения по данной теме, упражнения на усвоение и закрепление лексико-грамматического материала.

Задание: прочитать, перевести тексты, выписать и выучить новые лексические единицы, выполнить ряд предложенных упражнений на закрепление лексики и грамматического материала.

Практическая работа 1.

COMPUTER SYSTEMS

Computer can be divided into three main types, depending on their size and power.

Mainframe computers are the largest and most powerful. They can handle large amounts of information very quickly and can be used by many people at the same time. They usually fill a whole room and are sometimes referred to as mainframes or computer installations. They are found in large institutions like universities and government departments.

Minicomputers, commonly known as minis, are smaller and less powerful than mainframes. They are about the size of an office desk and are usually found in banks and offices. They are becoming less popular as microcomputers improve.

Microcomputers, commonly known as micros, are the smallest and least powerful. They are about the size of a typewriter. They can handle smaller amounts of information at a time and are slower than the other two types. They are ideal for use as home computers and are also used in education and business. More powerful microcomputers are gradually being produced; therefore they are becoming the most commonly used type of computers.

A computer can do very little until it is given some information. This is known as the input and usually consists of program and some data.

A program is a set of instructions, written in a special computer language, telling the computer what operations and processes have to be carried out and in what order they should be done. Data, however, is the particular information that has to be processed by the computer, e.g. numbers, names, measurements. Data brought out of the computer is known as the output.

When a program is put into operation, the computer executes the program step by step to process the data. The same program can be used with different sets of data.

Information in the form of programs and data is called software, but the pieces of equipment making up the computer system are known as hardware.

The most important item of hardware is the CPU (Central Processing Unit). This is the electronic unit at the center of the computer system. It contains the processor and the main memory.

The processor is the brain of the computer. It does all the processing and controls all the other devices in the computer system.

The main memory is the part of the computer where programs and data being used by the processor can be stored. However, it only stores information while the computer is switched on and it has a limited capacity.

All the other devices in the computer system, which can be connected to the CPU, are known as peripherals. These include input devices, output devices and storage devices.

An input device is a peripheral, which enables information to be fed into the computer. The most commonly used input device is a keyboard, similar to a typewriter keyboard.

An output device is a peripheral, which enables information to be brought out of the computer, usually to display the processed data. The most commonly used output device is a specially adapted television known as a monitor or VDU (Visual Display Unit). Another common output device is a printer. This prints the output of the CPU onto paper.

A storage device is a peripheral used for the permanent storage of information. It has a much greater capacity than the main memory and commonly uses magnetic tape or magnetic disks as the storage medium.

These are the main pieces of hardware of any computer system whether a small "micro" or a large mainframe system.

Vocabulary

divide into – разделить
depend on – зависеть от
size – размер
mainframe computer – универсальная вычислительная машина
powerful – мощный
handle – обрабатывать
fill – занимать
referred to – относиться к
installations – системы
institution – организация
Government departments – государственные учреждения
minicomputer – мини-ЭВМ
microcomputers – микро-ЭВМ
typewriter – печатная машинка
commonly know – широко известный
input – вводная информация
data – данные
a set of – набор
carry out – выполнять
to be processed by – обрабатываться
measurements – измерения
brought out – выдает
output – производительность
capacity – производительность
put into operation – запустить
execute – выполнять
software – программное обеспечение

pieces of equipment – единица оборудования
hardware – аппаратное оборудование
item – элемент
Central Processing Unit – центральный процессор
contain – включать в себя
main memory – оперативная память
brain – мозг
store information – хранить информацию
switch on – включать
limited capacity – ограниченные возможности
peripherals – второстепенное оборудование
input device – вводное устройство
lead into – вводить
keyboard – клавиатура
output device – выводное устройство
display the processed data – отображать на дисплее получ. данные
storage device – запоминающее устройство
permanent – длительное хранение
magnetic tape – магнитная лента
storage medium – носитель информации
mainframe system – универсальная система

Exercise 1. Answer the following questions:
1. What type of computer is most suitable for home use?
2. What is a program?
3. What are the functions of main memory, input device and storage device?
4. What data is?
5. What are the functions of processor and output device?
6. What are peripherals?
7. What is hardware?
8. What is software?
9. What are the main types of computers?

Exercise 2. Match each component in column A with its function in column B:

a) storage device
b) input device
c) output device
d) main memory
e) processor

2) it holds the programs and data being used by the processor
3) it does all the processing and controls the peripherals
4) it allows data to be entered
5) it provides permanent storage for programs and data

1) displays the processed data

Exercise 3. Complete the table:

	Mainframe	Minicomputer	Microcomputer
Size			
Power			
Use			

Exercise 4. Find the English equivalents for these word combinations:

Самый важный элемент аппаратного оборудования; запоминающее устройство – это второстепенное оборудование; одна и та же программа может использоваться с разными данными; компьютерная система; размером с печатную машинку, зависит от размера и мощности, самый широко распространенный, хранить информацию, вводная информация.

Практическая работа 2.

SOFTWARE. TYPES OF SOFTWARE

A computer to complete a job requires more than just the actual equipment or hardware we see and touch. It requires Software – programs for directing the operation of a computer or electronic data.

Software is the final computer system component. These computer programs instruct the hardware how to conduct processing. The computer is a general-purpose machine which requires specific software to perform a given task. Computers can input, calculate, compare, and output data as information. Software determines the order in which these operations are performed.

Programs usually fall in one of two categories: system software and applications software.

System software controls standard internal computer activities. An operating system, for example, is a collection of system programs that aid in the operation of a computer regardless of the application software being used. When a computer is first turned on, one of the systems programs is booted or loaded into the computer's memory. This software contains information about memory capacity, the model of the processor, the disk drives to be used, and more. Once the system software is loaded, the applications software can start to work.

System programs are designed for the specific pieces of hardware. These programs are called drivers and coordinate peripheral hardware and computer activities. User needs to install a specific driver in order to activate his or her peripheral device. For example, if you intend to buy a printer or a scanner you need to worry in advance about the driver program which commonly go along with your device. By installing the driver you «teach» your mainboard to «understand» the newly attached part.

Applications software satisfies your specific need. The programmers nowadays tend to include all kinds of gimmicks in one program to make software interface look more attractive to the user. This class of programs is the most numerous and perspective from the marketing point of view.

Vocabulary:
to direct – управлять
to conduct – проводить
general purpose – многоцелевой
to require – требовать
system software – системное программное обеспечение
application software – прикладное программное обеспечение
internal – внутренний
to load – загружать

specific – конкретный, определенный
regardless of – несмотря на
to install – устанавливать
to boot – запускать
to develop – развивать, проявлять, разрабатывать
to provide with – обеспечивать чем-либо
to attach – присоединять

Exercise 1. Translate from Russian into English:

1) управление работой компьютера,
2) электронные данные,
3) проводить обработку,
4) многоцелевая машина,
5) программное обеспечение,
6) вводить,
7) считать,
8) сравнивать,
9) выводить данные,
10) определять порядок,
11) системное программное обеспечение.

Exercise 2. Instructions: Fill in the blanks with the appropriate form of the verb provided in parentheses. Choose either the participle 1 (-ing form) or participle 2 (-ed form) based on the context given in each sentence.

1. The software upgrade _____ (release) last night is expected to enhance the system's performance significantly.
2. With the files _____ (encrypt) using advanced algorithms, unauthorized access to sensitive data is highly unlikely.
3. The computer program _____ (design) for simplicity can be easily navigated even by novice users.
4. After the files are _____ (compress), they occupy less storage space, which improves overall system efficiency.
5. The antivirus software _____ (update) regularly ensures protection against the latest security threats.
6. The data _____ (backup) every night is stored on an external server for disaster recovery purposes.
7. The error message _____ (display) on the screen indicates a potential hardware malfunction.
8. The email attachment _____ (scan) for viruses before it was opened to ensure safe browsing.
9. The software _____ (install) on all computers in the office simplifies workflow management.
10. The website _____ (develop) with user experience in mind loads quickly on various devices.

Exercise 2. Find English equivalents in the text:

1. Программное обеспечение – программы для управления работой компьютера или электронными данными.
2. Программное обеспечение определяет порядок выполнения операций.
3. Прикладные программы удовлетворяют вашу потребность.
4. Системное программное обеспечение контролирует стандартные внутренние деятельности компьютера.
5. Программисты сегодня имеют тенденцию включать все виды приманок в одну программу.

Exercise 3. Complete the sentences:

1. Software – programs for directing … .
2. Computers can … .
3. Software determines … .
4. Programs usually fall in one of two categories … .
5. System software controls … .
6. An operating system, for example, is a collection … .
7. System programs are designed … .
8. By installing the driver you … .
9. Applications software satisfies … .
10. This class of programs is … .

Exercise 4. Make up the sentences:

1. The computer is …   a) requires more than just the actual equipment or hardware we see and touch.

2. Software determines …   b) your specific need.
3. System programs are designed …   c) a general-purpose machine which requires specific software to perform a given task.

4. Applications software satisfies …   d) for the specific pieces of hardware.
5. A computer to complete a job …   e) the order in which these operations are performed.

Exercise 5. Answer the questions:

1. In what two basic groups software could be divided?
2. What is system software for?
3. What is software?
4. What is an operating system?
5. What is application software?
6. What is application software for?

Exercise 6. Say if the following sentences are True or False:

1. Computer programs only instruct the hardware how to handle data storage.
2. System software controls standard internal computer activities.
3. The computer is a general-purpose machine which requires specific software to perform a given task.
4. Computers can only input, calculate data as information.
5. Programs usually fall in one of two categories: system software and applications software.

Тема 3. Свойства цифровых компьютеров. Properties of digital computers.

Цель: изучить лексику по теме **Свойства цифровых компьютеров**, повторить грамматический материал.

Содержание работы: тексты для чтения по данной теме, упражнения на усвоение и закрепление лексико-грамматического материала.

Задание: прочитать, перевести тексты, выписать и выучить новые лексические единицы, выполнить ряд предложенных упражнений на закрепление лексики и грамматического материала.

Практическая работа 1.

Analog and digital computers

There are two fundamentally different types of computers – analog and digital. (Hybrid computers combine elements of both types.)

An analog computer solves problems by using continuously changing data (such as temperature, pressure, or voltage) rather than by means of manipulating binary digits as a digital computer does.

People design analog computers for specialized fields (hydrodynamics, aerodynamics, industrial control, etc.). For example, an automobile speedometer is a mechanical analog computer that measures the rotations per minute of the **drive shaft**[1] and translates that measurement into a display of kilometers (or miles) per hour. Electronic analog computers in chemical plants monitor temperatures, pressures, and **flow rates**[2] of chemicals. Although digital computers have replaced most analog computers, analog computers are still being used for flight control systems in aviation and space vehicles.

Digital computers solve problems by manipulating discrete binary digits. A computer can represent any type of data – from numbers and letters to musical notes and other symbols – in the binary code (i.e, using only the two digits 0 and 1 instead of the ten digits, 0–9, that are usually used in everyday life). This process is called digitization. In computer terms, binary digits are called bits. For example, if a number must have seven digits for its binary representation, we say that it contains seven bits. The term "bit" is an abbreviation for "**B**inary dig**IT**". An 8-bit string is called a byte.

A desk lamp can serve as an example of the difference between analog and digital. If the lamp has a simple on/off switch, then the lamp system is digital, because the lamp either produces light at a given moment or it does not. If a **dimmer**[3] replaces the on/off switch, then the lamp is analog, because the amount of light can vary continuously from on to off and all intensities in between.

Digital computers are generally more effective than analog computers for three main reasons: they are not as susceptible to signal interference; they can transmit data with more precision; and their coded binary data are easier to store and transfer than are analog signals.

Notes: [1]drive shaft – ведущий вал;
[2]flowrate– скорость потока;
[3]dimmer– регулятор силы света.

Exercise 1. Practice the reading of the following words and phrases:

mechanical, organization, cable, parallel, decoder, to regulate, component, to coordinate, functional, result, arithmetic, logic, technology, to interpret, procedure, cycle, synchronized, hertz, gigahertz, physical, type, aluminum, ceramic, standard, encyclopedia, ideal, variation, version, command, alphabet, cursor, stationary, vertical, special, microphone, module;

audio reproduction, multimedia format, graphical object, television program, visual information, analog signal.

Exercise 2. Revise the following words from your school active vocabulary:

to differ, to change, to press, to follow, to show, to draw, to lose (information); button, dictionary, button, example, sound, level; square, rectangular, circular, most, sometimes.

Exercise 3. Memorize the following words.

1. **to compose** – составлять, формировать
to be composed of – состоять из *Syn*: **to consist of**
2. **wire –** провод
wireless – беспроводной
3. **to receive** – получать, принимать *Syn:* **to obtain**
4. **to activate** – активизировать, приводить в действие, включать
activity – действие, работа, операция
5. **to cause** – быть причиной, вызывать, заставлять
cause – причина, основание
6. **value** – значение, величина
7. **to time** – синхронизировать; согласовывать во времени
8. **order** – 1) порядок, последовательность; 2) заказ
9. **to compare –** сравнивать
comparison – сравнение
comparatively – сравнительно, относительно
10. **surface** – поверхность
11. **to reach**–1)достигать, доходить; 2) связаться [с кем-л., напр. по телефону]
12. **medium** (*pl.* **media**) – 1) носитель (данных), среда; 2) средство, способ
13. **to locate** – 1) располагать(ся); 2) определять место (местоположение)
location – место(положение), размещение
14. **advantage** – преимущество *Ant:* **disadvantage**
15. **to attach** – подсоединять, прикреплять, подключать
16. **intermediate**–промежуточный
17. **to retrieve** – отыскивать, находить [информацию];извлекать[хранимую информацию]
retrieval – поиск, извлечение
18. **to introduce** – внедрять, вводить в эксплуатацию[новую технологию, новое оборудование и т. п.]
introduction – ввод, внедрение
19. **to reproduce** – воспроизводить, копировать

reproduction – воспроизведение
    20. **to distribute**–распространять
distribution – распространение
    21. **to erase** – стирать, удалять
erasure – стирание, удаление
    22. **to recognize** – 1) распознавать; 2) узнавать, признавать
recognition – распознавание
    23. **although** – хотя *Syn: though*
    24. **to view** – просматривать
    25. **to increase** – возрастать, увеличивать(ся) *Ant: to decrease, to reduce*
increase – рост, увеличение *Ant: decrease, reduction*
    26. **via** – через

Практическая работа 2.

Exercise 4. Translate the sentences, paying attention to the italicized words.

1. *Viewing* and editing documents on screen can be much quicker than working on paper.
2. If you want *to retrieve* a file from the computer, press FIND and then enter the name of the file you need.
3. The *surface* of a floppy disk is divided into concentric circles or tracks, which are then divided into sectors.
4. There are door keys that *activate* the air-conditioning equipment and turn on an entry light, so guests never enter a dark and stuffy room.
5. About 25 % of manufacturers use the Net *to introduce* new products on the market.
6. The demo versions of various programs are *distributed* free *via* the Internet.
7. Arithmetic progression is a series of numbers that *decrease* or *increase* by the same amount each time, for example 2, 4, 6, 8.
8. DVDs have quickly become an extremely popular *medium* for film *viewing*.
9. Most people say they spend about 50% of their time online on work *activities*.
10. WAP [протокол приложений для беспроводной связи, протокол WAP] technology is a system that enables people to enter the Internet, using a mobile phone or other *wireless* device.
11. Fax machine is a machine that sends and *receives* documents in an electronic form along telephone *wires* and then prints them.
12. The computer experts are working now on improving the speech *recognition* systems i.e. the ability of a computer *to recognize* natural languages.

Exercise 5. Fill in the gaps with the required words.

1. In ___ to other recent video games, this one isn't very exciting.	1. activates 2. although
2. The advantage of a database is that information can be stored in and quickly ___ from it.	3. attach 4. comparison
3. CD-ROM technology has one ___: one cannot write anything onto a CD-R disk.	5. disadvantage 6. distributed
4. We'll need a flat ___ to play the game on.	7. erased
5. If the software doesn't ___ a word, a pull-down menu of possible alternatives will be displayed on the	8. introduced 9. locate

screen.	10. receive
6. The computer crashed, and all our records were ___.	11. recognize
7. We ___ mail in two forms: on paper or electronically on our computers.	12. reproduction
8. The video tape costs $19.95 and is ___ by American Video.	13. retrieved
9. To ___ to the Internet, you must have a modem and a connection via an Internet Service Provider.	14. surface
10. Nearly 60 notebook computer models were ___ in 1991.	15. values
11. Unauthorized ___ of this software is strictly forbidden.	
12. You can copy down my answers, ___ I'm not sure they're right.	
13. Smoking in the house ___ fire alarm system.	
14. Email is a system that allows you to send and ___ messages by computer.	
15. A binary digit might take only two ___: 0 and 1.	

Exercise 6. Give English equivalents to the italicized words. Mind your grammar!

1. We *получаем* the latest news programmes *через* satellite.
2. A typical PC has components to *выводить* and *распечатывать* information (monitor and printer); *вводить* commands and data (keyboard and mouse); *извлекать* and *хранить* information (CD-ROM and disk drives); and communicate with other computers (modem).
3. The *сбор* of statistical *данные* is an *неотъемлемый* part of medical *исследование*.
4. *Тебе следует сравнить* at least three or four computers before buying one.
5. *У нас есть* an exclusive license to *распространять* Microsoft's software products in Japan.
6. One *недостаток* of mobile phones is that in some areas the series of sound waves that carry information is very weak.
7. Visits to our website *увеличились* threefold last week.
8. The *внедрение* of semiconductor technology revolutionized the computer industry.
9. *Способность распознавания речи* has been added to the latest version of the software.
10. *Цифровая запись* gives excellent *воспроизведение звука*.
11. In memory, bits are grouped together so they can *представлять* larger *значения*.
12. The user *выбирает* operations, *активизирует* commands, *создаёт* or *изменяет* images on the screen by pressing buttons on the mouse.

Exercise 7. Choose the required variant to complete each sentence.

1. It is particularly interesting to *[install, compare, erase, compose]* the two versions of the Windows operating system.
2. Video cameras with night vision can be *[attached, distributed, activated, increased]* by the movement of something or somebody.
3. A few journalists were allowed to *[reproduce, reach, locate, view]* the art exhibition the day before it opened.
4. The paragraphs in your essay are not arranged in logical *[increase, reproduction, order, introduction]*.
5. The software company is going to *[introduce, increase, compare, erase]* a new series of educational games for children.
6. The cable is made of many twisted *[media, wires, surfaces, locations]*.
7. The second half of the game was dull by *[advantage, comparison, introduction, reproduction]* with the first.

8. The person who *[receives, reproduces, distributes, retrieves]* the e-mail message may reply to it, forward it, delete it, or save it.
9. The main *[disadvantage, distribution, order, advantage]* of computer simulation is that it can be repeated over and over again under different conditions.
10. With a good set of audio speakers, you can *[activate, reproduce, compare, erase]* the orchestra's sound in your own home.
11. It's easy to transport your data to another *[location, activity, introduction, retrieval]* if it is stored on a disk.

Практическая работа 3.

Exercise 8. (A) Search a dictionary for the meaning of the adjectives given in the box. Arrange them in pairs of antonyms. Convert adjectives into adverbs, if possible. Memorize their meanings.

> long-term rigid permanent frequent inside static dynamic considerable flexible subsequent temporary previous slight outside short-term rare

(B) Replace the underlined words by their antonyms and translate the sentences.

1. The answers to some of the most <u>rarely</u> asked questions about the Internet will be published in the next issue of our journal.
2. Customers will not return to the website if the information is <u>dynamic</u>.
3. There were <u>considerable</u> changes in the timetable.
4. Hard disk is a fixed disk <u>outside</u> a computer, which may not be removed.
5. System software is a <u>temporary</u> component of the computer that controls its standard activities.
6. These figures are given for comparison with the results of <u>subsequent</u> research.
7. This method is <u>frequently</u> used in modern laboratories.
8. The operating system called Vista was introduced by Microsoft in 2006. It aroused [вызывать] <u>slight</u> interest among both computer experts and users.
9. CD-ROM is a <u>flexible</u> plastic disk that stores a large amount of data, using laser optics technology.
10. The scientists failed to duplicate these results in <u>previous</u> experiments.
11. By means of supercomputers, meteorologists can make a <u>short-term</u> weather forecast.
12. Input hardware includes external devices (i.e. components located <u>inside</u> the CPU) that provide information and instructions to the computer.
13. Voice-recognition systems are becoming more sophisticated and <u>rigid</u> now, thus keyboards might be unnecessary in the future.

Exercise 9. Give English equivalents to the italicized words and translate the sentences.

1. New bank employees will be provided with *временный* identity cards.
2. Technology in this field has improved *значительно* over the last decade.
3. The results of the research are summarized at the *предыдущий* chapter.
4. Most phones now have memories for storing numbers, which are *часто* used.
5. She was called away from the meeting to take an *срочный* phone call.
6. It might be necessary to make a few *незначительный* modifications to the design.
7. We obtained a *краткосрочный* credit at a bank to buy "the coolest" notebook computer.
8. She *редко* brings work home with her from the office. But these documents must be *срочно* typed and copied.
9. A floppy is a round, flat, *гибкий* disk coated with a magnetic material that hold information recorded in digital form.
10. There is *значительный* disagreement among archaeologists as to the age of the sculpture.

Exercise 10. Fill in the gaps with one of the adverbs or adjectives given in Ex. 8.

1. Thirteen is ___ considered an unlucky number.
2. You must register if you want to use the software on a ___ basis.
3. It is not ___; you can make a copy of these documents next week or whenever.
4. A good knife must have a ___ blade.
5. SIM card is a plastic card ___ a mobile phone that stores personal information about the person using the phone.
6. Economists predict that house prices will remain ___ for a long period.
7. I've got a ___ secretarial job, but I'm hoping to find something more permanent.
8. There is a ___ chance that he will be back in time.
9. No ___ experience is necessary for this job.
10. A hard disk consists of one or more ___ platters [пластина] coated with magnetic material that allows the recording of computer data.

<div align="center">

Практическая работа 4.
Computers and modern technologies

</div>

Computers have become an important part of our everyday life. We use computers every day, though not everyone realizes it. Even smartphones that are hidden in our bags and pockets are actually small computers. Most people think that a computer is a big thing with a display, a keyboard and a mouse. Old computers of the 1990-th really looked like this. Computers contain a bunch of useful programs such as Word, Excel, an Internet browser with e-mail boxes and social networks. You can install video games and play all day long.
Modern computers are not very big; laptops are actually small and light. But they are as fast as desktop computers or even faster. I like laptops because they are portable and you don't need to replace and upgrade hardware.
But if you look closer, you will see that there are computers in modern cars, in every supermarket or a café at the cash desk. They are used in airplanes and all kinds of vessels. Computers control infrastructure of big cities. Computers are widely used in factories and in all modern equipment. Computers help to make our life easier and safer. Of course, it doesn't mean that computers control our life, though some people truly believe that it will happen with mankind sooner or later. If all the world's computers suddenly stopped, there would be a great collapse and a terrible catastrophe.

Vocabulary
though – хотя
realize – осознавать
even – даже
be hidden – быть спрятанным
pocket – карман
display – экран
keyboard – клавиатура
a bunch of – куча
social network – социальная сеть
install – установить
all day long – весь день напролет
laptop – ноутбук
light – легкий
desktop computer – стационарный компьютер
portable – переносной
replace - заменять
upgrade – обновлять
hardware – «железо»
cash desk – касса
vessel – судно, большой корабль

equipment – оборудование
truly – на самом деле
mankind – человечество
collapse – крах
catastrophe – катастрофа

Exercise 1. Vocabulary Matching:
Match the following words with their meanings:
- a. Infrastructure
- b. Upgrade
- c. Catastrophe
- d. Portable
- e. Vessels

Meanings:
1. A sudden and widespread disaster.
2. The basic physical and organizational structures and facilities needed for the operation of a society or enterprise.
3. Capable of being easily carried or moved.
4. To improve the quality or performance of something.
5. A ship or large boat.

Exercise 2. True or False:
Indicate whether the following statements are true or false based on the text.
- a. Computers are only the big devices with a display, keyboard, and mouse. (False)
- b. Laptops are not as fast as desktop computers. (False)
- c. There are no computers in modern cars. (False)
- d. Computers are not used in factories. (False)
- e. If all the world's computers suddenly stopped, it would not cause any significant impact. (False)

Exercise 3. Discussion Questions:
Discuss the following questions in pairs or groups:
- a. How have computers become an integral part of our daily lives?
- b. What are the advantages of using laptops over desktop computers?
- c. In what ways are computers used in different sectors such as transportation, retail, and manufacturing?
- d. Do you agree that computers make our lives easier and safer? Why or why not?
- e. What do you think would happen if all the world's computers suddenly stopped working?

Exercise 4. Fill in the Blanks:
Fill in the blanks with the appropriate words from the text:
- a. Even smartphones, which we carry in our bags and pockets, are actually small _____.
- b. Modern computers are not very big; laptops are _____ and light.
- c. Computers are widely used in factories and in all modern _____.
- d. If all the world's computers suddenly stopped, there would be a great collapse and a terrible _____.

Exercise 5. Critical Thinking Exercise:
Imagine a scenario where all computers suddenly stopped working. Discuss with your classmates or write a short paragraph about how this event would impact various aspects of society, such as communication, transportation, economy, etc.

Тема 4. Организация микрокомпьютерной системы. Organization of a microcomputer system.

Цель: изучить лексику по теме Организация микрокомпьютерной системы, повторить грамматический материал.

Содержание работы: тексты для чтения по данной теме, упражнения на усвоение и закрепление лексико-грамматического материала.
Задание: прочитать, перевести тексты, выписать и выучить новые лексические единицы, выполнить ряд предложенных упражнений на закрепление лексики и грамматического материала.

<div align="center">

Практическая работа 1.
HOW MICROPROCESSORS WORK.

</div>

Exercise 1.

В парах или в группах обсудите следующие вопросы.

- What is the most important hardware part in any computer?
- What do you know about the history of microprocessors?
- What processor is the most powerful?

Exercise 2.

а) Прочитайте текст и выберите 3 предложения, максимально описывающие работу процессора.

The microprocessor, or CPU, is the heart of any normal computer, whether it is a desktop machine, a server or a laptop. It is a single computer chip about the size of a matchbox. Its many legs or pins are inserted into the motherboard. The CPU, which does the bulk of your PC's thinking, is the motor behind your software.
The CPU is a kind of a traffic cop. The information is constantly flowing back and forth between the various parts of the PC and the CPU. The CPU stands in the middle, deciding what goes where. One of the CPU's jobs is to connol the information flow. When you type at the keyboard, the CPU receives every keystroke and redirects it to the right place. When you print a letter, the CPU takes the characters from the screen or the disk and sends them through the cable that connects your PC to your printer. The CPU gets its orders from the software programs that are loaded into the computer memory. A microprocessor executes a collection of machine instructions that tell the processor what to do. Based on the instructions, a microprocessor does three basic things:
- Using its ALU (Arithmetic/Logic Unit), a microprocessor can perform mathematical operations like addition," subtraction, multiplication and division.
- A microprocessor can move data from one memory location to another.
- A microprocessor can make decisions and jump to a new set of instructions based on those decisions.

б) Используйте полученные вопросы и ответы для составления диалога. Разыграйте следующую ситуацию. Представьте, что вы учитесь в одном из американских колледжей. Вы готовитесь к экзамену по компьютерному аппаратному обеспечению. Вы обсуждаете с другим студентом один из вопросов к экзамену.

Exercise 3.

а) Закончите начатые предложения, пользуясь текстом.

1. The microprocessor, or CPU ...
2. It is a single computer chip ...
3. Its many legs or pins are ...
4. The CPU is a kind of like *a* ...
5. The information is constantly ...
6. One of the CPU's jobs is to ...
7. When you type at the keyboard, ...
8. When you print a letter, ...
9. The CPU gets its orders from ...
   10.   Based on the instructions, a microprocessor...
   11.   A microprocessor can ...

б) Перескажите текст " A Personal Computer is a General-Purpose Device", представив, что вы - участник студенческой конференции по проблемам компьютерных технологий. Вам дали слово. Что бы вы ответили?
в) Ситуацию в упр. 10б можно повторить. Теперь можно добавить переводчика, который будет переводить вашу речь с английского языка на русский или с русского на английский.

Exercise 4.

Переведите следующий текст на английский язык.

Компания AMD собирается к концу этого года прекратить производства процессоров Duron, которые предназначаются для недорогих компьютеров. Во всяком случае, в планах компании на 2003 год Duron'bi не значатся. Такое решение принято в связи с надвигающимся выпуском процессоров семейства Hammer. Первый чип этого семейства под названием Claw Hammer должен как раз появиться в конце года. AMD приготовила ему роль основного своего процессора для настольных ПК и ноутбуков. А нынешний лидер Athlon займет место Duron'a, то есть станет процессором для дешевых компьютеров.

Практическая работа 2.

COMPUTER HARDWARE

Exercise 1.

В парах или в группах обсудите следующие вопросы.

- What are the main parts of computer hardware?
- What are the functions of the main computer parts?
- What part is the "brain" of the computer system?
- What part is used to hold data?

Exercise 2.

Просмотрите текст и проверьте, насколько вы были правы в ответах на вопросы из упр. 1.

The physical components that make up a computer are called hardware. Every PC has basically the same hardware. The differences in size and power of that hardware makes one PC more expensive or powerful than another. Let's take a look at the main components of a typical desktop computer.
Motherboard - The motherboard is a thin, rectangular circuit board that forms the foundation of your computer. It contains many computer "chips and connections. The CPU and memory are usually on the motherboard. Other systems may be found directly on the motherboard or connected to it through a secondary connection.

For example, a sound card can be built into the motherboard or connected through PCI. The motherboard allows users to personalize a computer system depending on their applications and needs.

Central processing unit (CPU) - The microprocessor, "brain" of the computer system, is called the central processing unit. Everything that a computer does is overseen by the CPU.

Memory - This is very fast storage used to hold data. It must be fast because it connects directly to the microprocessor. There are several specific types of memory in a computer: Random-access memory (RAM) - Used to temporarily store information that the computer is currently working with. Read-only memory (ROM) - A permanent type of memory storage used by the computer for important data that does not change.

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

Server - A computer that has been optimized to provide services to other computers over a network. Servers usually have powerful processors, lots of memory and large hard drives.

Mainframe - In the early days of computing, mainframes were huge computers that could fill an entire room or even a whole floor! As the size of computers has diminished while the power has increased, the term mainframe has fallen out of use in favor *of enterprise server.* You'll still hear the term used, particularly in large companies to describe the huge machines processing millions of transactions every day. *Supercomputer* - This type of computer usually costs hundreds of thousands or even millions of dollars. Although some supercomputers are single computer systems, most comprise multiple high performance computers working in parallel as a single system."

Exercise 3.

а) Данные слова и выражения встречаются в тексте. Соедините их с русскими эквивалентами.

1.versatility	уменьшать
2.portability	возможность
3.capability	средний, обычный
4.power	мощный
5.to imply	подразумевать
6.to comprise	портативность
7.to provide services	переносной
8.to fall out of use	мощность
9.to rely on	увеличивать
	универсальность
10.to diminish	определять
11.to increase	конструировать
12.to define	предоставлять услуги
13.to design	постоянный
14.powerful	состоять из
15.huge	основываться
16.permanent	выйти из употребления
17.portable	огромный
	уменьшать
18.average	возможность

б) Чтобы быстрее запомнить эти слова (упр. За), расположите их в порядке появления в тексте.

в) В парах потренируйтесь в переводе этих слов и выражений. Студент 1 называет слова по-русски, а студент 2 переводит их на английский язык.

Exercise 4.

В следующих предложениях отсутствуют некоторые слова. Заполните пропуски словами, приведенными в упр. За.

1. An average computer consists of different ... .2. The ... is the heart of any computer. 3. Computer is nothing without ... .4. The CPU is based on the ... . 5. There are two main types of computer memory: ... and ... .6. The information processed by a computer is called .... 7. It is very ... to
establish new types of hardware. 8. The computer performance . the
quality of its hardware and software. 9. The motherboard is a .... that
forms the ... of any computer. 10. The motherboard ... many chips and connections.

Exercise 5.

Сравните следующие предложения с предложениями, приведенными в тексте, и исправьте выделенные грамматические ошибки. Попробуйте дать объяснение данным ошибкам. Переведите предложения на русский язык.

1. The physical components that make computer call hardware. 2. The differences in size and power make one PC more expensive or powerful another. 3. Motherboard thin, rectangular circuit board that form the foundation of your computer. 4. It contain many computer chips and connections. 5. A sound card can build into the motherboard. 6. The motherboard allows users personalize a computer system depend from their applications and needs. 7. Everything that a computer does oversee the CPU. 8. This_yery fast storage use hold data. 9. It must be fast because it connect direct to the microprocessor.

Практическая работа 3.

Exercise 6.

Переведите предложения на английский язык, обращая внимание на грамматические явления из упр. 5.

1. Видео и звуковая карты подсоединяются к материнской плате. 2. Блок питания используется для регуляции электричества. 3. Устройство, которое используется для хранения информации, называется жестким диском. 4. Жесткий диск - это часть компьютера, которая используется для хранения информации. 5. Процессор может быть разной мощности в зависимости от его стоимости. 6. Звуковая карта преобразует аналоговый звук в цифровую информацию и обратно. 7. Память может быть оперативной и постоянной.

Exercise 7.

Представьте, что вы - переводчик, и вам поручили
перевести текст "Computer Hardware". Как бы вы перевели этот
текст? Подготовьте хороший письменный перевод на русский язык.

Exercise 8.

Пользуясь текстом, соедините колонки так, чтобы получились верные предложения.

temporarily store information,
establish basic communication, permanently store data that does not
The motherboard   change.
The central   permanently hold programs and
processing unit   documents.
Random-access   regulate the electricity,
memory   record and play audio.
Read-only memory' j   _j_____
Basic input/output system Power supply The hard disk
operating system The sound card
The graphics card

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Exercise 9.

а) В парах выполните следующее задание, используя упражнение 8. Студент I описывает часть компьютера, не называя се. Студент 2 угадывает. Потом можно поменяться.

Например:

St. 1: - *This device is used to record and play audio.*

St.2: - *The sound card is used to record and play audio.*

St.l: - *This device is called the microprocessor "brain".*

St.2: - *The central processing unit is called the microprocessor "brain".*

б) Поменяем задание. Студент 1 загадывает часть компьютера. Студент 2 отгадывает при помощи общих вопросов. Студент I может только отвечать «да» или «нет». Например:

St.l: - *I'm ready.*

St.2: - *Does this device form the foundation of a computer?* St.l: - *No, it doesn't.*

St.2: - *Is it the basic software?* St.l:- *Yes, it is.* St.2: - *Is it BIOS?* St.l: - *Yes, it is.*

Exercise 10.

Разыграйте следующую ситуацию. К вам обращается ваш друг, начинающий пользователь, с просьбой помочь разобраться в аппаратном обеспечении компьютера. Как бы вы это сделали? Вы можете выполнить это задание в форме диалога или монолога.

Exercise 11.

Переведите следующий текст на английский язык.

В состав любого компьютера входят процессор, память, устройства ввода и вывода информации.

Процессор занимается обработкой информации - это своего рода «мозг» компьютера. В оперативной памяти (ОЗУ) компьютера в двоичном виде запоминается обрабатываемая информация, программа ее' обработки и результаты работы. Кроме оперативной памяти, у компьютера может быть постоянная память (ПЗУ). Основной характеристикой является ее' объем.

Устройства ввода и вывода обеспечивают ввод информации в память компьютера и выдачу ее наружу.

and memory- are usually on the motherboard, is the basic software, is very fast storage used to hold data, is called the microprocessor "brain", is fast as it connects directly to the microprocessor, allows users to personalize a computer system, contains many computer chips and connections, forms the foundation of your computer, translates image data to be displayed by the monitor.

Тема 6. Запоминающие устройства. Storage devices

Цель: изучить лексику по теме **Запоминающие устройства**, повторить грамматический материал.
Содержание работы: тексты для чтения по данной теме, упражнения на усвоение и закрепление лексико-грамматического материала.
Задание: прочитать, перевести тексты, выписать и выучить новые лексические единицы, выполнить ряд предложенных упражнений на закрепление лексики и грамматического материала.

Практическая работа 1.

COMPUTER MEMORY

Exercise 1. Copy out words in bold and translate them into Russian:

Software gives instructions that tell computers what to do. There are two kinds of **software**. The first is **System Software** and includes programs that run the computer system or that **aid** programmers in **performing** their work. The second kind of software is **Application Software**, which directs the computer to perform specific tasks that often **involve** the user.

Memory is the general term used to describe a **computer system's storage facilities**. Memory's job is to store the instruction or programs and **data** in the computer. Memory can be divided into two major categories: 1 – **main memory**, 2 – **auxiliary storage**. Main memory is also called main storage, **internal storage** or primary storage and is a part of the CPU. Main memory is usually on chips or a **circuit board** with the other two components of the CPU. RAM for **Random Access Memory**, is the storage area directly controlled by the computer's CPU. Main Memory assists the **control unit** and the ALU by serving as a **repository** for the program being executed and for data as it passes through. RAM or **Volatile memory** so called because its contents are replaced when new instructions and data are added, or when electrical power to the computer is **shut off**. RAM is **read-write memory**, in that it can **receive** or read data and instructions from other sources such as auxiliary storage.

Another type of memory is ROM or **Read Only Memory**. ROM holds instructions that can be read by the computer but no written over. ROM is sometimes called **firmware** because it holds instructions from the firm or manufacturer.

Auxiliary storage, also called auxiliary memory or secondary storage, is memory that **supplements** main storage. This type of memory is **long-term, Nonvolatile Memory**. Nonvolatile means that computer is turned off or on.

Exercise 2. Fill in the blanks necessary words:

1. ... gives instructions that tell computers what to do.

2. ... directs the computer to perform specific tasks that often involve the user.

3. Memory's job is to store ... .

4. ... can be divided into two main categories.

5. Main memory is usually on ... .

6. ... is read-write memory.

7. ... holds instructions that can be read by the computer but no written over.

8. ... is memory that supplements main storage.

9. ... means that the computer is turned off or on.

Exercise 3. Fill in the prepositions:

1. Memory can store instructions, programs, data ... the computer.

2. Main memory is usually ... chips or a circuit board ... the other two components of the CPU.

3. RAM ... random access memory is the storage area controlled ... the computer's CPU.

4. Memory so called because its contents are replaced, when instructions are added or when electrical power is shut ... .

5. ROM holds instructions that can be read, but no written ... .

Exercise 4. Find the synonyms for the following words:

A storage device, to perform, to handle, to process, a portion, to transmit, to store, a routing.

Exercise 5. Find the antonyms to the following words:

To take away, to break down, secondary, external, old instructions, switch on, short-term.

Exercise 6: Perfect Participle Active vs. Perfect Participle Passive.

Objective: Differentiate between Perfect Participle Active and Perfect Participle Passive forms in sentences related to computer systems.

Instructions: Fill in the blanks with the appropriate form of the verb provided in parentheses. Choose between the Perfect Participle Active or Perfect Participle Passive based on the context given in each sentence.

1. The program _____ (develop) by our team has revolutionized data management practices.
2. The files, once _____ (backup), can be restored in case of system failure.
3. After the security patch _____ (install), the network vulnerabilities were significantly reduced.
4. The data _____ (encrypt) by the administrator is now secure from unauthorized access.
5. Once the software update _____ (complete), users will experience improved functionality and performance.
6. The firewall _____ (configure) by the IT department prevents unauthorized access to the company's network.
7. The website _____ (design) by our team has won several awards for its user-friendly interface.
8. The files, once _____ (compress), occupy minimal storage space on the server.
9. The antivirus software _____ (update) regularly to ensure protection against emerging threats.
10. The email server _____ (configure) to automatically filter spam messages before they reach users' inboxes.

Exercise 7: Fill in the Blanks. Objective: Practice using Perfect Participle Active and Perfect Participle Passive forms in the context of computer systems.

Instructions: Fill in the blanks with the appropriate form of the verb provided in parentheses.

1. The software _____ (update) regularly to ensure optimal performance.
2. Once the files _____ (transfer), they can be accessed from any device connected to the network.
3. The database _____ (backup) every night to prevent data loss.
4. The files _____ (delete) permanently cannot be recovered without a backup.
5. After the program _____ (install), users need to restart their computers to apply the changes.
6. The system _____ (scan) for viruses every hour to detect any potential threats.
7. The new feature _____ (introduce) in the latest software update has received positive feedback from users.
8. The email _____ (send) successfully, confirming the completion of the transaction.
9. The security measures _____ (implement) after the data breach occurred have strengthened the network defenses.
10. The website _____ (optimize) for mobile devices loads quickly and displays content seamlessly.

Exercise 8: Sentence Transformation. Objective: Rewrite the given sentences using either Perfect Participle Active or Perfect Participle Passive.

Instructions: Rewrite each sentence, replacing the underlined part with the appropriate form of the verb provided in parentheses.

1. The IT team has configured the server to automatically update software. (configure)
   **Rewritten: ** The server _____ to automatically update software by the IT team.
2. The software developer has designed the application to be compatible with various operating systems. (design)
   **Rewritten: ** The application _____ by the software developer to be compatible with various operating systems.
3. The network administrator has installed antivirus software on all computers in the office. (install)
   **Rewritten: ** Antivirus software _____ by the network administrator on all computers in the office.
4. The system administrator has backed up important files to an external hard drive. (back up)
   **Rewritten: ** Important files _____ to an external hard drive by the system administrator.
5. The programmer has written a script to automate repetitive tasks. (write)
   **Rewritten: ** A script _____ by the programmer to automate repetitive tasks.
6. The technician has configured the router to provide secure Wi-Fi access. (configure)
   **Rewritten: ** The router _____ to provide secure Wi-Fi access by the technician.
7. The software developer has debugged the application to fix critical errors. (debug)
   **Rewritten: ** The application _____ by the software developer to fix critical errors.
8. The database administrator has optimized the database for faster performance. (optimize)
   **Rewritten: ** The database _____ for faster performance by the database administrator.
9. The IT team has updated the operating system to the latest version. (update)
   **Rewritten: ** The operating system _____ to the latest version by the IT team.
10. The cybersecurity expert has encrypted sensitive data to protect it from unauthorized access. (encrypt)
   **Rewritten: ** Sensitive data _____ by the cybersecurity expert to protect it from unauthorized access.

Практическая работа 2.

INPUT DEVICES.

Exercise 1. Поделитесь своими знаниями об устройствах ввода, ответив на вопросы.

- What input devices do you know?
- What input devices do you usually use when you work with a computer?

Exercise 2.

Прочитайте текст и определите, являются ли следующие предложения верными.

1. The keyboard is the most common input device.
2. Most mice are used on digital technology.
3. Digital pens are mouse substitutes.
4. Today, joysticks are advanced optical-mechanical devices.

No matter how powerful the components inside your computer are, you need a way to interact with them. This interaction is called input/output (I/O). The most common types of input devices in PCs are: of programming languages currently in use. C has been around for several decades and has won widespread acceptance because it gives programmers maximum control and efficiency. C is an easy language to learn. It is a bit more cryptic in its style than some other languages, but you get beyond that fairly quickly.
If you are a programmer, or if you are interested in becoming a programmer, there arc a couple of benefits you gain from learning C:
• You will be able to read and write code for a large number of platforms -- everything from microcontrollers to the most advanced scientific systems can be written in C, and many modern operating systems are written in C.
• The jump to the object oriented C++ language becomes much easier. C++ is an extension of C, and it is nearly impossible to learn C++ without learning C first.
C is what is called a compiled language. This means that once you write your C program, you must run it through a C compiler to turn your program into an executable that the computer can run (execute). To write and run a C program, you must have access to a C compiler. If you are a student, then the school will likely provide you with a compiler - find out what the school is using and learn about it. If you are working at home on a Windows machine, you are going to need to download a free C compiler or purchase a commercial compiler. A widely used commercial compiler is Microsoft's Visual C-н- environment (it compiles both C and C-ᴶ programs).

Exercise 3.
а) Данные слова и выражения встречаются в тексте. Соедините их русскими

эквивалентами.

1. a computer language	a. выяснять, узнавать
2. a decade	b. компилятор
3. a programmer	c. следовать, выполнять
4. a compiled language	d. десятилетие
5. a compiler	e. добиться широкого признания
6. environment	f. программист
7. extension	g. тайный, загадочный
8. to be interested in	h. дополнение
9. to gain benefits from	i. получать выгоду от
10. to find out	g. язык компьютерного программирования
11. to download	
12. to purchase	к. компилярный язык
13. to win widespread acceptance	1. бесплатный
14. to follow	т. интересоваться
15. free	п. загружать
16. impossible	o. невозможный
17. cryptic	p. покупать

б) Чтобы быстрее запомнить эти слова (упр. За), расположите их в порядке появления в тексте.

в) В парах потренируйтесь в переводе этих слов и выражений. Студент 1 называет слова по-русски, а студент 2 переводит их на английский язык.

Exercise 4.

В следующих предложениях отсутствуют некоторые слова. Заполните пропуски словами, приведенными в упр. За.

I. Different...............are used to create programs.
2. C+-+ is an……. of programming
3. In the USA it is ... to get a program ... .
4. Although programming is ... a lot of programs are written on its base.
5. "Diablo ГГ has won …….. round the world.
6.If you ... your teacher's advice you'll learn to write programs very soon.
7. Those people who were interested in programming two ….. ago now are called …….. .

Exercise 5.

Проверьте, насколько хорошо вы переводите английские тексты на русский язык. Подготовьте хороший письменный перевод.

Exercise 6.

Определите, являются ли следующие предложения верными по смыслу. Если нет - исправьте.

1. C is a computer programming language. 2. That means that you can use C to create lists of instructions for a computer to follow. 3. C is a new computer programming language. 4. C is a difficult language to learn. 5. It is a bit clumsier in its style than some other languages. 6. Many modern operating systems are written in C. 7. C is an extension of C++, and it is nearly impossible to learn C without learning C++ first. 8. Once you write your C program, you must run it through a C compiler to turn your program into an executable that the computer can run. 9. A widely used commercial compiler is Microsoft Office.

Exercise 7.

Представьте, что вы - создатель языка C и C++. Расскажите о своем «детище» начинающим программистам. Можете выполнить это задание в форме диалога или монолога.

Exercise 8.

Переведите следующий текст на английский язык.

Для того чтобы компьютер мог выполнить программу, программа должна быть записана по строгим правилам, в виде, доступном для обработки на компьютере. Такой набор правил называется языком программирования. Воспринимая программу, записанную на языке программирования, компьютер некоторым образом её преобразует, помешает в собственную память, а затем выполняет команды, соответствующие данной программе.

Программа на языке программирования записывается в виде текста, содержащего буквы, цифры, знаки операций и т.д. Любой такой текст можно закодировать.

При выполнении компьютер анализирует программу и в соответствии с программой выполняет те или иные преобразования над данными.

Exercise 9.

а) Проверьте, насколько хорошо вы запомнили информацию об устройствах ввода. Не пользуясь текстом, закончите начатые предложения.

1. The most common types of...
2. The keyboard is the primary device for ...
3. Most have a QWERTY ...
4. The mouse is the primary device for ...
5. A mouse is optimized for ...
6. Most are used on optical or...
7. Digital pens are ...
8. Pens rely on handwriting recognition or ...
9. Pens come in corded and ...
10. Joysticks plug into the 15-inch game port ...
i 1. In the past, joysticks were ...
12. Today, joysticks are ...
13. Voice input systems can have ...
14. Voice input systems can be used to control ...
15. Many voice-input systems vary according to ...

б) Перескажите текст " Input Devices", представив, что вы - участник студенческой конференции по проблемам компьютерных технологий. Вам дали слово. Что бы вы ответили?

Exercise 10.

Переведите следующий текст на английский язык.

Клавиатура нужна для управления компьютером и ввода информации. Клавиатура ПК похожа на клавиатуру пишущей машинки. Кроме буквенных и цифровых, есть функциональные клавиши.

ПК также оборудован мышью - устройством ручного управления, которое соединяется с ПК «хвостом» - кабелем. Внутри мыши находится шарик. Он вращается, когда мышь двигается по поверхности. Связанные с шариком датчики посылают в ПК сигналы, и курсор на экране повторяет движение мыши. Это устройство используется для быстрого выбора пунктов меню, появляющихся на экране: курсор подводят к нужному пункту и нажимают клавишу мыши. Мышью можно передвигать по экрану слова и картинки, а также чертить линии.

Практическая работа 3.

Exercise 1.

Поделитесь своими знаниями о видах компьютерной памяти, ответив на вопросы.
- What types of computer memory do you know?
- What are they used for?
- What is the difference between them?

Exercise 2.

Прочитайте текст, найдите наиболее существенную информацию об оперативной памяти и расскажите об этом на русском языке.

Random-access memory (RAM) is the best known form of computer memory. RAM is a type of short-term memory; when power is turned off, the information is lost.
A memory chip is an integrated circuit (1C) made of millions of transistors and capacitors. They come in different shapes and sizes. *Dynamic random-access memory (DRAM)* chips are the most common type of computer memory, and they need to be energized hundreds of times per second to hold the information.
DRAM has memory cells with a paired transistor and capacitor requiring constant refreshing. This refresh operation is where dynamic RAM gets its name. Dynamic RAM has to be dynamically refreshed all of the time

or it forgets what it is holding. The downside of all of this refreshing is that it takes time and slows down the memory.

Static RAM uses a completely different technology. Static random access memory uses multiple transistors, typically four to six, for each memory cell but doesn't have a capacitor in each cell. Static RAM never needs to be refreshed. This makes static RAM significantly faster than dynamic RAM. However, because it has more parts, a static memory cell takes a lot more space on a chip than a dynamic memory cell. Therefore you get less memory per chip, and that makes static RAM a lot more expensive.

Exercise 3.

а) Данные слова и выражения встречаются в тексте. Соедините английские слова и выражения с их русскими эквивалентами. В этом вам поможет словарь.

1. short-term memory   a. значительно
2. an integrated circuit   b. включать/выключать
3. a transistor   c. удерживать информацию
4. a capacitor   d. транзистор
5. a cell   e. конденсатор
6. random-access memory   f. недостаток
7. refreshing   g. ячейка
8. downside   h. требовать
9. space   i. интегральная микросхема
10. to turn on/off   g. краткосрочная память
11. to hold the information   k. обновление
12. to slow down   I. постоянный
13. to require   m. замедлять
14. significantly   п. оперативная память
15. constant   o. место, пространство

б) Чтобы быстрее запомнить эти слова (упр. За), расположите их в порядке появления в тексте.
в) В парах потренируйтесь в переводе этих слов и выражений. Студент 1 называет слова по-русски, а студент 2 переводит их на английский язык.

Exercise 4. В следующих предложениях отсутствуют некоторые слова. Заполните пропуски словами, приведенными в упр. За.

1. When you begin to work you ...... your computer, when you finish to work you .... it. 2. The motherboard is .... that forms the foundation of a computer. 3. Today computers are ... more powerful than they were 10 years ago. 4. The computer ... it that it can break down. 5. A memory chip is made of millions of..... and ... .6. Memory is a part of a computer used to...........7. A cheap processor can ....the work of a computer.

Exercise 5. Переведите предложения на русский язык, обращая внимание на выделенные грамматические явления. Попробуйте дать объяснение данным грамматическим явлениям.

1. Random-access memory (RAM) is the best known form of computer memory. 2. RAM is a type of short-term memory; when power is turned off, the information is lost. 3. Л memory chip is an integrated circuit (1C) made of millions of transistors and capacitors. 4. DRAM has memory cells with a paired transistor and capacitor requiring constant refreshing. 5. The downside of all of this refreshing is that it takes time and slows down the memory. 6. Static RAM never needs to be refreshed. 7. This makes static RAM significantly faster than dynamic RAM.

Практическая работа 4.

Exercise 6. Переведите на английский язык предложения, содержащие грамматические явления из упр.5.

1. Оперативная намять - один из наиболее распространенных видов памяти. 2. Базовая система ввода и вывода загружается, когда вы включаете компьютер. 3. Статическая оперативная память быстрее, чем динамическая. 4. Чип ОЗУ - интегральная микросхема, состоящая из миллионов транзисторов и конденсаторов. 5. В наши дни память вмещает в себя значительно больше информации, чем 10 лет назад.

Exercise 7. Подготовьте перевод текста на русский язык. Подойдите к заданию творчески; помните, что перевод текста должен звучать по-русски. Затем выберите лучший перевод.

Exercise 8.

а) Найдите ответы в тексте на следующие вопросы.

1. Why is RAM a type of short-term memory?
2. What is a memory chip made of?
3. What are the main RAM types?
4. Why is DRAM called dynamic?
5. Why is static RAM called static?
б) Используя вышеперечисленные вопросы (упр. 8а), составьте диалог и разыграйте следующую ситуацию. Вы – руководитель кружка «Юный хакер» в Американском Ломе Пионеров. Вам необходимо ответить на вопросы одного из членов вашего кружка

Exercise 9. Выполните следующее творчески-аналитическое задание. Сравните два основных вида оперативной памяти: DRAM и static RAM. Найдите общие и отличительные черты.
Можете использовать данные слова и выражения: dynamic random-access memory, static random access memory, the most common type of, to be energized, a paired transistor and capacitor, to be dynamically refreshed, slow down, multiple transistors, faster than, take a lot more space, make a lot more expensive.

Exercise 10. Для выполнения данного задания вам потребуется воображение и творческий подход к делу. Расскажите об оперативной памяти от имени самой оперативной памяти. Можете начать следующим образом: "*I 'm random access memory and I'd like to tell you about myself. I'm the best known form of computer memory...* "

Exercise 11. Переведите следующий текст на английский язык.

Для хранения информации используются разные устройства. Отличаются они ёмкостью памяти и временем доступа к ней.
Оперативная память компьютера - самая быстрая. Чтобы извлечь из неё число или слово, достаточно миллионных долей секунды. Обычно ёмкость оперативной памяти сравнительно невелика - от нескольких мегабайт до одного гигабайта. Оперативная память находится внутри самого компьютера.

Exercise 12.
Поделитесь своими знаниями о видах компьютерной памяти, ответив на вопросы.

- What types of computer memory do you know?
- What are they used for?
- What is the difference between them?

Exercise 13.

Прочитайте текст и выберите 3 предложения, максимально описывающие операционную память.

Similar to RAM, ROM chips contain a grid of columns and rows. But where the columns and rows intersect, ROM chips are fundamentally different from RAM chips. While RAM uses transistors to turn on or off access to a capacitor at each intersection, ROM uses a diode to connect the lines if the value is 1. If the value is 0, then the lines arc not connected at all.

You cannot reprogram or rewrite a standard ROM chip. If it is incorrect, or the data needs to be updated, you have to throw it away and start over. Creating the original template for a ROM chip is often a laborious process full of trial and error.

But the benefits of ROM chips outweigh the drawbacks. Once the template is completed, the actual chips can cost as little as a few cents each. They use very little power, are extremely reliable and, in the case of most small electronic devices, contain all the necessary programming to control the device. A great example is the small chip in the singing fish toy. This chip, about the size of your fingernail, contains the 30-second song clips in ROM and the control codes to synchronize the motors to the music.

Практическая работа 5.

Exercise 14.

а) Данные слова и выражения встречаются в тексте. Соедините английские слова и выражения с их русскими эквивалентами. В этом вам поможет словарь.

read only memory	преимущество
access	пересекать
a template	колонка
trial and error	модернизировать
benefit	создавать
drawback	шаблон, модель, лекало
a column	ряд
a row	постоянная память
a diode	допуск
to complete	заполнять
to create	выбрасывать
to update	превосходить
to intersect	метод проб и ошибок
to throw away	трудоёмкий
to outweigh	надежный
laborious	диод
reliable	недостаток

б) Чтобы быстрее запомнить эти слова (упр. 3а), расположите их в порядке, появления в тексте,

в) В парах потренируйтесь в переводе этих слов и выражений. Студент 1 называет слова по-русски, а студент 2 переводит их на английский язык.

Exercise 15.

Переведите слова, указанные в скобках, на английский язык.

1.Nowadays you can (модернизировать) computer in any computer shop.
2.The user can study the computer by (методом проб и ошибок) but it's not the best variant. 3. (Диод) is used in every electronic device. 4. The computer (преимущество) is that it can process a lot of information. 5. The computer (недостаток) is in its little reliability. 6. Program creating is a very (трудоёмкий) process. 7. If you have written the wrong program (выбросите) it away and create a new one.

Exercise 16.

Переведите предложения на русский язык, обращая внимание на выделенные грамматические явления. Попробуйте дать объяснение данным грамматическим явлениям.

1. While RAM uses transistors lo turn on or off access to a capacitor at each intersection, ROM uses a diode to connect the lines if the value is 1.
2. If it is incorrect, or the data needs to be updated, you have to throw it away and start over. 3. Creating the original template for a ROM chip is often a laborious process. 4. Once the template is completed, the actual chips can cost as little as a few cents each.

Exercise 17. Completing Sentences with Independent Participial Phrases
Objective: Practice using independent participial phrases related to computers and technology.
Instructions: Complete each sentence with an independent participial phrase derived from the verb provided in parentheses.

1. _____ (Analyzing the data), the computer scientist discovered patterns that led to significant insights.

2. _____ (Running smoothly), the operating system ensures efficient performance of all tasks.

3. _____ (Developed by experts), the software incorporates advanced features for enhanced user experience.

4. _____ (Connected to the network), the printer can be accessed from multiple devices within the office.

5. _____ (Installed on all computers), the antivirus program provides continuous protection against malware threats.

6. _____ (Updated regularly), the application stays current with the latest security patches and bug fixes.

7. _____ (Processed through encryption), the sensitive information remains secure from unauthorized access.

8. _____ (Stored in the cloud), the files are accessible from anywhere with an internet connection.

9. _____ (Designed with simplicity in mind), the user interface allows for intuitive navigation.

10. _____ (Configured according to user preferences), the browser provides a personalized browsing experience.

Answers:
1. Analyzing the data,
2. Running smoothly,
3. Developed by experts,
4. Connected to the network,
5. Installed on all computers,
6. Updated regularly,
7. Processed through encryption,
8. Stored in the cloud,
9. Designed with simplicity in mind,
10. Configured according to user preferences.

Exercise 18. Writing Independent Participial Phrases. Objective: Practice constructing independent participial phrases related to computers and technology. Instructions: Write an independent participial phrase for each given situation.

1. Situation: Computer processing large amounts of data.
   Independent Participial Phrase: _____
2. Situation: Software being tested for bugs before release.

Independent Participial Phrase: _____
3. Situation: Network connection established between multiple devices.
   Independent Participial Phrase: _____
4. Situation: Files being synchronized across different devices.
   Independent Participial Phrase: _____
5. Situation: Firewall protecting the network from external threats.
   Independent Participial Phrase: _____
6. Situation: Emails being scanned for spam messages.
   Independent Participial Phrase: _____
7. Situation: System undergoing regular maintenance.
   Independent Participial Phrase: _____
8. Situation:Data being encrypted for secure transmission.
   Independent Participial Phrase: _____
9. Situation:Backup of important files being created.
   Independent Participial Phrase: _____
10. Situation:New software version being installed on all computers.
    Independent Participial Phrase: _____

Exercise 19.
Rearranging Sentences with Independent Participial Phrases
Objective: Rearrange sentences to incorporate independent participial phrases.
Instructions: Rearrange the given sentences by adding the provided independent participial phrase at the beginning.

1. Independent Participial Phrase:Inspecting the code for errors,
   Sentence: The programmer identified several bugs in the software.
   Rearranged Sentence: _____
2. Independent Participial Phrase:Backed up regularly,*
   Sentence: Important data remains safe from loss.
   Rearranged Sentence: _____
3. Independent Participial Phrase:Updated automatically,
   Sentence: The antivirus software ensures protection against the latest threats.
   Rearranged Sentence: _____
4. Independent Participial Phrase:Configured according to user preferences,
   Sentence: The software adapts to individual needs.
   Rearranged Sentence: _____
5. Independent Participial Phrase:Stored securely in the cloud,
   Sentence: Documents can be accessed from anywhere with an internet connection.
   Rearranged Sentence: _____

Answers:
1. Inspecting the code for errors, the programmer identified several bugs in the software.
2. Backed up regularly, important data remains safe from loss.
3. Updated automatically, the antivirus software ensures protection against the latest threats.
4. Configured according to user preferences, the software adapts to individual needs.
5. Stored securely in the cloud, documents can be accessed from anywhere with an internet connection.

Тема 7. Программирование. Programming

Цель: изучить лексику по теме **Программирование**, повторить грамматический материал.

Содержание работы: тексты для чтения по данной теме, упражнения на усвоение и закрепление лексико-грамматического материала.

Задание: прочитать, перевести тексты, выписать и выучить новые лексические единицы.

Практическая работа 1.

Programming is the process of preparing a set of coded instructions which enables the computer to solve specific problems or to perform specific functions. The essence of computer programming is the encoding of the program for the computer by means of algorithms. The thing is that any problem is expressed in mathematical terms, it contains formulae, equations and calculations. But the computer cannot manipulate formulae, equations and calculations. Any problem must be specially processed for the computer to understand it, that is – coded or programmed.

The phase in which the system's computer programs are written is called the development phase. The programs are lists of instructions that will be followed by the control unit of the central processing unit (CPU). The instructions of the program must be complete and in the appropriate sequence, or else the wrong answers will result. To guard against these errors in logic and to document the program's logical approach, logic plans should be developed.

There are two common techniques for planning the logic of a program. The first technique is flowcharting. A flowchart is a plan in the form of a graphic or pictorial representation that uses predefined symbols to illustrate the program logic. It is, therefore, a "picture" of the logical steps to be performed by the computer. Each of the predefined symbol shapes stands for a general operation. The symbol shape communicates the nature of the general operation, and the specifics are written within the symbol. A plastic or metal guide called a template is used to make drawing the symbols easier.

The second technique for planning program logic is called pseudocode. Pseudocode is an imitation of actual program instructions. It allows a program-like structure without the burden of programming rules to follow. Pseudocode is less time-consuming for the professional programmer than is flowcharting. It also emphasizes a top-down approach to program structure. Pseudocode has three basic structures: sequence, decision, and looping logic. With these three structures, any required logic can be expressed.

Exercise 1. Copy the following words and word combinations into your notebooks:
1) equation – уравнение/приравнивание;
2) list of instructions – перечень команд;
3) guard – защищать/охранять;
4) appropriate sequence – необходимая последовательность;
5) program logic – логическая последовательность выполнения программы;
6) flowchart – блок-схема;
7) flowcharting – построение блок-схемы;
8) pictorial representation – наглядное представление;
9) predefined symbols – заранее заданные символы;
10) emplate – шаблон/образец;
11) pseudocode – псевдокод/псевдопрограмма;
12) burden – издержки/затраты;
13) consume – потреблять/расходовать;
14) emphasize – выделять/подчеркивать;
15) top-down approach – принцип нисходящей разработки;
16) looping logic – логическая схема выполнения (операций) в цикле.

Exercise 2. Answer the following questions:
1. What is programming?

2. What is the essence of programming?
3. What should be done with the problem before processing by the computer?
4. What is a program?
5. What are instructions?
6. What are the main techniques for planning the program logic?
7. What is a flowchart?
8. What is a template and what is it used for?
9. What do you understand by "pseudocode"?
10. What are the basic structures of pseudocode?

Exercise 3. Find English equivalents for the following words in the text:
1) совокупность закодированных команд;
2) суть компьютерного программирования;
3) кодирование посредством алгоритма;
4) необходимая последовательность;
5) составлять план логической последовательности;
6) логическая последовательность выполнения программы;
7) построение блок-схемы;
8) псевдопрограмма.

Exercise 4. Match the phrases from the first column to the words from the second one:

application program;	выполняемая программа;
binary program;	сторожевая программа;
archived program;	вспомогательная программа;
operating (system) program;	программа в двоичном коде;
running program;	программа моделирования;
watch-dog program;	дистанционная программа;
simulation program;	прикладная программа;
remote program;	сервисная программа;
support program;	программа операционной системы;
utility program.	заархивированная программа.

ыполнить ряд предложенных упражнений на закрепление лексики и грамматического материала.

Практическая работа 2.
COMPUTER SOFTWARE

Exercise 1.

В парах или в группах обсудите следующие вопросы.

- What is the difference between hardware and software?
- What do you know about software?
- Is it difficult to write a program?
- Have you ever written a computer program?

Exercise 2.

Прочитайте текст и выберите 3 предложения, максимально описывающие программное обеспечение компьютера.

Every desktop and laptop computer in common use today contains a microprocessor as its central processing unit. The microprocessor is the hardware component. To get its work done, the microprocessor executes a set of instructions known as software. You are probably very familiar with two different types of software:

The operating system - The operating system provides a set of services for the applications running on your computer, and it also provides the fundamental user interface for your computer. Windows 98 and Linux are examples of operating systems.

The applications - Applications are pieces of software lhat are programmed to perform specific tasks. On your computer right now you probably have a browser application, a word processing application, an e-mail application and so on. You can also buy new applications and install them.

Ft turns out that *the Basic Input/Output System (BIOS)* is the third type of software your computer needs to operate successfully.

Exercise 3.

Данные слова и выражения встречаются в тексте. Соедините английские слова и выражения с их русскими эквивалентами.

1. operating system	a. работать, управлять компьютером
2. to provide a set of services	b. устанавливать приложения
3. to install applications	c. удачно
4. to operate a computer	d. операционная система
5. successfully	c. предоставлять серию услуг

Exercise 4.

а) Найдите ответы в тексте на следующие вопросы.

1. What docs every desktop and laptop computer contain? 2. Component of what is the microprocessor? 3. What does the microprocessor execute? 4. What are two types of software? 5. What does the operating system provide? 6. What are application programmed to do? 7. What is the third type of software?

б) Разыграйте следующую ситуацию. К вам обращается ваш друг, начинающий пользователь, с просьбой помочь разобраться в компьютерном программном обеспечении. Как бы вы это сделали? Вы можете выполнить это задание в форме диалога, используя вопросы из упр. 4а.

Exercise 5.

а) Закончите начатые предложения, пользуясь текстом.

1. Every desktop and laptop computer in common use today contains ..
2. The microprocessor is the ...
3. To get its work done, the microprocessor ...
4. The operating system provides ... and it also ...
5. Applications are pieces of software that ...
6. On your computer right now you probably have ...
7. The Basic Input/Output System is the third ...

б) Расскажите о компьютерном программном обеспечении, представив, что вы - участник студенческой конференции по проблемам компьютерных технологий. Вам дали слово. Что бы вы ответили?

в) Ситуацию в упр. 5а можно повторить. Теперь можно добавить переводчика, который будет переводить вашу речь с английского языка на русский или с русского на английский.

Exercise 6.

Переведите следующий текст на английский язык.

Описание того, какие действия, в каком порядке и над какими порциями информации должен произвести компьютер, называется программой для компьютера. Образно говоря, компьютер без программы представляет собой груду железа, не способную ни к какой переработки информации. Поэтому составление программ - программирование составляет основу любого использования компьютера.

Сфера применения конкретного компьютера определяется не столько его конструкцией, сколько набором созданных для него программ. Для того чтобы переключить компьютер с одной работы на другую, достаточно сменить программу в его памяти.

<div align="center">

Практическая работа 3.
THE CPU MAIN COMPONENTS.

</div>

As it is known the two functional units of the CPU are the control unit (CU) and the arithmetic-logical unit (ALU). The control unit manages and coordinates the entire computer system. It obtains instructions from the program stored in main memory, interprets the instructions, and issues signals that cause other units of the system to execute them.

The control unit operates by reading one instruction at a time from memory and taking the action called for by each instruction. In this way it controls the flow between the main storage and the arithmetic-logical unit.

The control unit has the following components: a counter that selects the instructions, one at a time, from memory; a register that temporarily holds the instructions read from memory while it is being executed; a decoder that takes the coded instruction and breaks it down into individual commands necessary to carry it out; a clock, which produces marks at regular intervals. These timing marks are electronic and very rapid.

The sequence of control unit operations is as follows. The next instruction to be executed is read out from primary storage into the storage register. The instruction is passed from the storage to the instruction register. Then the operation part of the instruction is decoded so that proper arithmetic or logical operation can be performed. The address of the operand is sent from the instruction register to the address register. At last the instruction counter register provides the address register with the address of the next instruction to be executed.

The arithmetic-logical unit (ALU) executes the processing operrand is sent from the instruction register to the processing operations called for by the instructions brought from main memory by the control unit. Binary arithmetic, the logical operations and some special functions are performed by the arithmetical-logical unit.

Data enter the ALU and return to main storage though the storage register. The accumulator serving as a register holds the results of processing operations. The results of arithmetic operations are returned to the accumulator for transfer to main storage though the storage register. The comparer performs logical comparisons of the contents of the storage register and the accumulator. Typically, the comparer tests for conditions such as "less than", "equal to", or "greater than".

So as you see the primary components of the arithmetic-logical unit are banks of bistable devices, which are called register. Their purpose is to hold the numbers involved in the calculation and hold the results temporarily until they can be transferred to memory. At the core of the ALU is a very high speed binary adder, which is used to carry out at least the four basic arithmetic functions (addition, subtraction, multiplication and division). The logical unit consists of electronic circuitry which compares information and makes decisions based upon the results of the comparison.

Copy out the vocabulary:

control unit (CU) – блок управления
arithmetic-logical unit (ALU) – арифметико-логический блок
to obtain – получать
to store – хранить
to issue – выдавать
to execute – выполнять
flow – поток
counter – счетчик
register – регистр
decoder – декодер
to carry out – выполнять
rapid – быстрый
sequence – последовательность
primary storage – первичное хранилище
storage register – регистр хранения
instruction register – регистр команд
operand – операнд/объект действия
address register – адресный регистр
binary arithmetic – двоичная арифметика
accumulator – аккумулятор/сумматор
comparer – компаратор/блок сравнения
logical comparisons – логическое сравнение
banks of bistable devices – система бистальных устройств (устройств с двумя устойчивыми состояниями)
binary adder – двоичный сумматор
electronic circuitry – электронная схема

Exercise 1. Answer the following questions:
1. What are the functional units of CPU?
2. What is the function of CU?
3. How does CU operate?
4. What is the function of a counter?
5. What role does a decoder play?
6. What is the sequence of cu operations?
7. What is the function of the arithmetic-logical unit?
8. What operations are performed by ALU?
9. What primary components does ALU consist of?
10. What is the function of an accumulator?

Exercise 2. Find equivalents for the following words and word combinations in the text:
1) результаты сравнения;
2) принимать решения;
3) умножение;
4) двоичный сумматор;
5) сложение;
6) адресный регистр;
7) дешифратор;
8) вычитание;
9) адрес операнда;
10) датчик;
11) счетчик;

12) регистр памяти;

13) основная память;

14) последовательность операций.

Практическая работа 4.

APPLICATION PROGRAMS

An Application Program is a software program that performs a specific function, such as accounting, word processing or drafting. There are some categories of application program to choose from spreadsheet, Database Management, Computer Aided Design (CAD), Communications, Graphic presentations, desktop Publishing, Integrated Programs, Window and Windows – based Programs. Within each category, there are several software programs which have gained industry-wide acceptance.

Word processing: is the most common application for a personal computer. Most word processing software programs allow us to create, edit, and save documents, along with changing the position of the text in a document, inserting new information in the middle of the text, or removing words and sections no longer needed. With a typewriter, you would have to re-type the entire document after a few major changes. Given a computer, a document can be stored electronically and retrieved at any time for modification.

Examples of word processing programs include: Word Perfect; MS-Word; Multimate; Wordstar; Displaywrite; Word for Windows; Word Perfect for Windows.

Accounting and spreadsheets: One of the primary functions of the first mainframe computers was to store and calculate volumes of financial data for banks and large businesses. Nowadays, a personal computer is capable of handing the accounting and finances of almost any small to medium-sized business. Many different programs are available for plotting financial trends and performing everyday bookkeeping functions. One of the most popular financial tools is called a spreadsheet. An electronic spreadsheet is a software program, which performs mathematical calculations and 'want – if' analysis. Besides replacing your pencil and calculator for solving financial and statistical problems, spreadsheets can display line graphics, bar chats, and scatter plot diagrams. Often accounting and spreadsheet programs are designed to work together, in efforts to provide the financial solution.

Examples of accounting programs include: ACCPAC Simply Accounting, ACCPAC plus, Business Vision Turbo, New Views Accounting, Great Plains, Dac Easy, Peach Tree, Abacus II.

Examples of spreadsheet programs include: Lotus 1-2-3, MS-Exel, Quatro Pro, Supercale.

Database Management. A database is a simply collection of related information. Some common examples are a phone book, an inventory list, a personal file. A Database Management Software program assists in manipulating and organizing the information in a database. A database application is any task ordinarily handled by a filing cabinet, multiply file folders, or some other information storage system. In a manual system, for example, each drawer in filing cabinet is reserved for a specific purpose, such as maintaining profile sheets on customers. Each profile is written on a standard form and a clerk places the file folder in the drawer. This manual process is identical to a computerized database, where the database software performs the function of the filing clerk. Rather that placing the customer profiles in the filing cabinet drawer, a computerized database stores each profile electronically on a disk.

Some examples of a database management programs: Dbase, R:BASE, Paradox, FoxPro, Q&A, Oracle.

Computer Aided Design. Computers are the perfect tools for creating drawing or architectural plans. Because the drawings can be saved, it is easy to incorporate modifications, design improvements and corrections. Computers are often used on the final process of converting a computer drawing into a physical product. One such example is the manufacturing of electronic circuit boards. First, the electronic circuit drafting program produces the schematic design, then a second program tests the design by simulating the circuit's operation, and finally a third program constructs the circuit board from the design layout.

Computer Aided Design programs are: AutoCAD, TANGO, PCAD, Generic CAD.

Communications: Computers can communicate with each other via regular telephone lines and modems. Communication software programs enable different types of computers to exchange data using a common language. The IMB PC can actually emulate various types of equipment, around the world, with the help of software. Communication programs are: Smartcom, Kermit, Crosstalk, PC Talk, Pro Comm, PC Anywhere, CloseUp.

Graphic Presentations: There are actually some people, who prefer to look at 14 columns of numbers across several pages for analyzing a business' performance. These people are called accountants. However, most people are visual learners of diagrams, graphs and charts for representing numerical trends. There are a variety of programs for displaying information graphically: –Lotus 1-2-3, Exel, Quatro Pro, Chartmaster, Chart, Harvard Graphics, Micrografix Powerpoint, DrawPerfect.

Desktop Publishing is the process of taking a document and inserting graphics and applying enhanced formatting options. These programs take text from the more common word processor and produce print-shop quality output. Desktop publishing programs are used to create newsletters, brochures, reports, book and other publications.

Desktop publishing programs include: Aldus PageMaker, Ventura Publisher, AMI Professional. Integrated Programs: they unite one or more of the primary computer applications, whether word processing, spreadsheet or database into a single package. These programs allow people to experiment with the major computer applications, while only investing in a single product. The post popular integrated programs are: – MS-Works, Q&A, Eight in one, Symphony, Framework.

Microsoft Windows. Windows is a program, which enhances many aspects of using a microcomputer. It provides a graphical user interface (GUI and pronounced «Gooey») for programs running under the Windows environment. In other word, Windows allows a person to use a mouse and choose special symbols to point at and select desired functions, rather than having to remember commands. As well Windows' products allow a WYSIWYG ('what you see is, what you get') screen display, especially important for word processing and desktop publishing programs.

Exercise 1. Translate these into your own language:

1) software program
2) application program
3) industry-wide acceptance
4) along with changing the position
5) no longer needed
6) to re-type the entire document
7) calculate volumes of financial data
8) bookkeeping functions
9) to assist in manipulating and organizing the information
10) perfect tools
11) program tests the design
12) emulate various types
13) select desired functions

Exercise 2. Find English equivalents to the following words and expressions in the text:

1) выполнять специфическую функцию
2) самая распространенная прикладная программа
3) создавать, редактировать, сохранять документы
4) вставлять новую информацию
5) удалять слова, которые больше не нужны

6) получить в любое время
7) быть способным, быть в состоянии что-либо выполнять
8) ручной процесс
9) пласт
10) используется, чтобы создать
11) позволяет людям экспериментировать
12) выбрать

Exercise 3. Finish the sentences according to the text:

1. An application program is a software ..... .
2. Word processing software programs allow us ..... .
3. An electronic spreadsheet is a ..... .
4. A data base application is any task ..... .
5. Computers are perfect tools for ..... .
6. Communication programs enable different types of computers ......
7. There are people who prefer to look at 14 columns of numbers across several pages for ..... .
8. These programs take text from the more common word processor and ..... .
9. Windows allows a person ..... .

Exercise 4. What kind of programs do you choose to perform the following tasks:

a) to create, edit and save documents;
b) to make a phone book, inventory list, a personal file;
c) to store and calculate volumes of financial data for banks;
d) to use a mouse and choose special symbols to point at and select desired functions;
e) to create drawings or architectural plans;
f) to communicate with other persons via regular telephone to exchange data using a common language;
g) to unite one or more of the primary computer applications.

Exercise 5. Give appropriate definitions and examples of the following application programs:

a) word-processing
b) accounting and spreadsheets
c) database management
d) computer aided design
e) communications
f) graphic presentations
g) desktop publishing
h) Microsoft Windows

Exercise 6. Answer the questions:

1. What is an application program?
2. What does word processing software program allow to do?
3. What was one of the primary functions of the first mainframe computers?
4. What is a personal computer capable doing now?
5. What is spreadsheet?
6. What is database?
7. What are the perfect tools for creating drawings?

8. What are desktop publishing programs used to?
9. What is windows?

Exercise 7. Раскройте скобки:
1. There was no one (they, open the door).
2. That was a mistake (she, drive the car).
3. It is nice (you, ask about the children).
4. It was easy (I, solve the problem).
5. I ordered pizza (we, have a snack).It's not (you, work overtime).
6. The book too was boring (I, read till the end).
7. She was walking too fast (I, recognize her).

<p style="text-align:center">Практическая работа 5.</p>

<p style="text-align:center">TEXT EDITORS</p>

<p style="text-align:center">History</p>

Before text editors existed, computer text was punched into cards with keypunch machines. Physical boxes of these thin cardboard cards were then inserted into a card-reader. Magnetic tape and disk "card-image" files created from such card decks often had no line-separation characters at all, and assumed fixed-length 80-character records. An alternative to cards was punched paper tape. It could be created by some teleprinters, which used special characters to indicate ends of records.

The first text editors were "line editors" oriented to typewriter-style terminals without displays. Commands effected edits to a file at an imaginary insertion point called the "cursor". Edits were verified by typing a command to print a small section of the file, and periodically by printing the entire file. In some line editors, the cursor could be moved by commands that specified the line number in the file, text strings for which to search, and regular expressions. Line editors were major improvements over keypunching. Some line editors could be used by keypunch.

When computer terminals with video screens became available, screen-based text editors became common. One of the earliest full-screen editors was "O26", which was written for the operator console of the CDC 6000 series computers in 1967. Another early full-screen editor was "vi". Written in the 1970s, it is still a standard editor on Unix and Linux operating systems.

Also written in the 1970s was the UCSD Pascal Screen Oriented Editor, which was optimized both for indented source code as well as general text.

Emacs, one of the first free and open source software projects, is another early full-screen or real-time editor, one that was ported to many systems. A full-screen editor's ease-of-use and speed (compared to the line-based editors) motivated many early purchases of video terminals.

The core data structure in a text editor is the one that manages the sequence of characters or list of records that represents the current state of the file being edited. While the former could be stored in a single long consecutive array of characters, the desire for text editors that could more quickly insert and delete text.

Vocabulary:

punch – вбивать
keypunch machine – клавишный перфоратор
physical box –
cardboard card – перфокарта

insert – вставлять
card-reader – устройство считывания с перфокарт
magnetic tape – магнитная лента
card-image file – отображение данных перфокарты
card deck – колода перфокарт
line-separation character – разделительный символ
assume – принимать
punched paper-tape – бумажная перфолента
teleprinter – телетайп
indicate – отображать
line editor – редактор строк
typewriter-style terminal – клавиатура по типу пишущей машинки
edits – система передачи изображений
insertion point – место ввода
text string – текстовая строка
regular expression – регулярное выражение
screen-based text editors – экранный текстовый редактор
operator console – пульт оператора
indented source code – закрытый исходный текст
source software project – программа с открытыми исходными кодами
ease-of-use – простой в управлении
purchase – покупка
core data structure – структура основных данных
sequence of characters – порядок символов
current state – текущее состояние
consecutive array – последовательный порядок

Exercise 1. Match the following words to make word combinations:

1) source	a) systems
2) punched	b) paper tape
3) cardboard	c) editors
4) consecutive	d) array
5) computer	e) cards
6) real-time	f) characters
7) line	g) strings
8) keypunch	h) code
9) sequence of	i) decks
10) software	j) terminals
11) screen-based	k) projects
12) operating	l) terminals
13) insertion	m) console
14) card	n) text editors
15) line	o) point
16) text	p) number
17) video	q) editor
18) operator	r) machines

Exercise 2. Answer the questions:
1. Where was computer text punched before the invention of text editors?
2. What does the core data structure manage in a text editor?
3. What is a standard editor on Unix?
4. How did keypunch machines work?
5. What was an alternative to cardboard cards?
6. What were line editors oriented to?
7. How were edits verified?
8. What is one of the first free source software projects?
9. When did screen-based text editors become common?

Exercise 3.   Forming Complex Sentences about Computers. Objective: Practice constructing complex sentences about computers by combining independent and dependent clauses. Instructions: Combine each pair of independent and dependent clauses to form complex sentences about computers.

1. Independent Clause: The software crashed unexpectedly.

   Dependent Clause: Users lost unsaved data.

   Complex Sentence: _____.
2. Independent Clause: The computer virus spread rapidly.

   Dependent Clause: Many users were unaware of the threat.

   Complex Sentence: _____.
3. Independent Clause: The system update was delayed.

   Dependent Clause: The IT team encountered unexpected errors.

   Complex Sentence: _____.
4. Independent Clause: The website received heavy traffic.

   Dependent Clause: The server struggled to handle the load.

   Complex Sentence: _____.
5. Independent Clause: The cybersecurity measures were strengthened.

   Dependent Clause: Several security breaches occurred last month.

   Complex Sentence: _____.

Answers:

1. Despite the software crashing unexpectedly, users lost unsaved data.

2. While the computer virus spread rapidly, many users were unaware of the threat.

3. Although the system update was delayed, the IT team encountered unexpected errors.

4. As the website received heavy traffic, the server struggled to handle the load.

5. Due to several security breaches occurring last month, the cybersecurity measures were strengthened.

Практическая работа 6.

Types of texts.

There are important differences between plain text (created and edited by text editors) and rich text (created by word processors or desktop publishing software).

Plain text consists of character representation. Each character is represented by a fixed-length sequence of one, two, or four bytes, or as a variable-length sequence of one to four bytes, in accordance to specific character encoding conventions.

These conventions define many printable characters, but also non-printing characters that control the flow of the text, such space, line break, and page break. Plain text contains no other information about the text itself, not even the character encoding convention employed. Plain text is stored in text files, although text files do not exclusively store plain text.

Rich text, on the other hand, may contain metadata, character formatting data, paragraph formatting data, and page specification data. Rich text can be very complex. Rich text can be saved in binary format, text files adhering to a markup language, or in a hybrid form of both.

Text editors are intended to open and save text files containing either plain text or anything that can be interpreted as plain text, including the markup for rich text.

Text editors have 5 main features:

Find and replace. Text editors provide extensive facilities for searching and replacing text, either on groups of files or interactively. Advanced editors can use regular expressions to search and edit text or code.

Cut, copy, and paste. Most text editors provide methods to duplicate and move text within the file, or between files.

Ability to handle UTF-8 encoded text.

Text formatting. Text editors often provide basic visual formatting features like line wrap, auto-indentation, bullet list formatting using ASCII characters, comment formatting, syntax highlighting and so on. These are typically only for display and do not insert formatting codes into the file itself.

Undo and redo. Text editors provide a way to undo and redo the last edit, or more.

Vocabulary:
plain text – обычный текст
rich text – форматированный текст
word processor – текстовый процессор
desktop publishing software – программное обеспечение для настольных издательских систем
character – символов
fixed-length sequence – фиксированная последовательность
variable-length sequence – переменная последовательность
character encoding – кодирование символов
convention – соглашение
the flow of the text – поток данных
line break – разрыв строки
page break – разрыв страницы
employed – применяемый
store – хранить
exclusively – исключительно
metadata – метаданные
character formatting data – данные форматирования символа
paragraph – абзац
page specification data – данные о странице
complex – сложный
binary – двоичный
adhering – придерживающийся
markup language – язык разметки
provide – предоставлять
facility – возможность

interactively – интерактивный режим
advanced – расширенный
expression – выражение
paste – вставка
within – внутри
handle – обработка
feature – функция
line wrap – перенос строк
auto-indentation – автоматическое отступление
bullet list – список маркеров
syntax highlighting – выделение синтаксических конструкций
display – отображать
undo – отмена
redo – восстановление

Exercise 1. Answer the questions:
1. What is the difference between plain text and rich text?
2. What do non-printing characters control?
3. What are the typical creatures of text editors?
4. What are the basic visual formatting features?
5. What does rich text contain?
6. What does plain text contain?
7. What way can rich text be saved?

Exercise 2. Match the following words:

1) printable	a) formatting data
2) text	b) editor
3) syntax	c) processors
4) line	d) highlighting
5) fixed-length	e) break
6) formatting	f) representation
7) character	g) formatting
8) character	h) edit
9) line	i) characters
10) bullet	j) list formatting
11) markup	k) format
12) binary	l) codes
13) plain	m) encoding
14) comment	n) sequence
15) paragraph	o) language
16) word	p) specification
17) page	q) wrap
18) last	r) text

Exercise 3. Прочитайте вслух предложения и переведите их на русский язык.
Read a book. Read my book. Let's read my book. Let me read his book. Take a jack. Take my jack. Let's take his jack. Let me take your jack. Meet me. Let's meet Ann and Pete. Let me meet him. Help him. Let's help him. Let me help him. Open a hatch. Close a hatch. Fasten your belt. Check the brakes. Change the belt. Look at me. Take your pen. Write. Read. Tell.

Exercise 4. Переведите предложения на английский язык.

1) Помогите мне. 2) Помогите нам. 3) Встречайте меня. 4) Встречайте нас. 5) Скажите мне ваше имя. 6) Скажите мне его имя. 7) Откройте свою книгу. 8) Закройте окно. 9) Дайте мне мою ручку. 10) Прочитайте текст.

Exercise 5. Поставьте данные предложения в отрицательную форму.
1) Open the window. 2) Change the seat. 3) Close your book. 4) Give him my pen. 5) Look at me. 6) Let him tell my name. 7) Take the jack. 8) Write the words. 9) Take your seat. 10) Meet Pete.

Exercise 6. Прочитайте предложения и переведите их на русский язык.
1) It's September. 2) It's autumn. 3) It's raining. 4) It's cold. 5) It's 10 o'clock. 6) It's morning. 7) It's windy. 8) It's late. 9) It's cloudy. 10) It's dark.

Exercise 7. Скажите по-английски.
1) Разрешите мне открыть люк.
2) Давайте поможем ему.
3) Замените домкрат. / Не меняйте домкрат.
4) Проверьте тормоза.
5) Закройте книгу. / Не закрывайте книгу.
6) Пристегните ремень.
7) Дайте мне вашу ручку.
8) Помогите мне открыть окно.
9) Посмотрите на доску. / Не смотрите на доску.
10) Познакомьтесь с Анной.
11) Откройте книгу. / Не открывайте книгу.
12) Прочитайте текст. / Не читайте текст.
13) Займите ваше место.
14) Скажите мне ваше имя.
15) Напишите слово.

Практическая работа 7.

DATABASE MANAGEMENT SYSTEM

Database Management System (DBMS) is a software for storing and retrieving users' data while considering appropriate security measures. It consists of a group of programs which manipulate the database. The DBMS accepts the request for data from an application and instructs the operating system to provide the specific data. In large systems, a DBMS helps users and other third-party software to store and retrieve data.

DBMS allows users to create their own databases as per their requirement. The term "DBMS" includes the user of the database and other application programs. It provides an interface between the data and the software application.

Characteristics of Database Management System:
1. Provides security and removes redundancy.
2. Self-describing nature of a database system.
3. Insulation between programs and data abstraction.
4. Support of multiple views of the data.
5. Sharing of data and multiuser transaction processing.
6. DBMS allows entities and relations among them to form tables.
7. It follows the ACID concept (Atomicity, Consistency, Isolation, and Durability).
8. DBMS supports multi-user environment that allows users to access and manipulate data in parallel.

Users in a DBMS environment:

Component Name	Task

Application Programmers	The Application programmers write programs in various programming languages to interact with databases.
Database Administrators	Database Admin is responsible for managing the entire DBMS system. He/She is called Database admin or DBA.
End-Users	The end users are the people who interact with the database management system. They conduct various operations on database like retrieving, updating, deleting, etc.

Four Types of DBMS are:
1. Hierarchical database
2. Network database
3. Relational database
4. Object-Oriented database

Hierarchical DBMS
In a Hierarchical database model data is organized in a tree-like structure. Data is Stored Hierarchically (top down or bottom up) format. Data is represented using a parent-child relationship. In Hierarchical DBMS parent may have many children, but children have only one parent.

Network Model
The network database model allows each child to have multiple parents. It helps you to address the need to model more complex relationships like as the orders/parts many-to-many relationship. In this model, entities are organized in a graph which can be accessed through several paths.

Relational model
Relational DBMS is the most widely used DBMS model because it is one of the easiest. This model is based on normalizing data in the rows and columns of the tables. Relational model stores in fixed structures.

Object-Oriented Model
In Object-oriented Model data stored in the form of objects. The structure which is called classes which display data within it. It defines a database as a collection of objects which stores both data members values and operations.

Exercise 1. Say if the following statements are true or false:

1. In a Hierarchical database data is represented using a parent-child relationship.
2. DBMS consists of a group of programs which manipulate the database.
3. DBMS doesn't provide security.
4. In Network Model entities are organized in a graph which can be accessed through only one path.
5. DBMS provides an interface between the data and the software application.
6. The Application programmers write programs in one conventional programming language to interact with other users.
7. One of Database Management System characteristic is supporting of multiple views of the data.
8. In Object-oriented Model data stored in the form of objects.
9. In Hierarchical DBMS parent may have many children, and children may have many parents.
10. End-Users don't belong to the DBMS environment.

Exercise 2. Match the words to make appropriate word collocations and translate them into Russian:

1) collection of
2) end-
3) to retrieve
4) database
5) application
6) data

7) security
8) programming
9) relational
10) operating
11) tree-like

12) multi-user
a) administrator
b) language
c) environment
d) objects
e) structure
f) data
g) user
h) database
i) program
j) abstraction
k) measure
l) system

Exercise 3. Answer the following questions:
1. What does DBMS supporting of multi-user environment allow?
2. What does the term "DBMS" include?
3. How does the object-orienting model define a database?
4. Where does The DBMS accept the request for data from?
5. How does the relational model store?
6. What are four types of DBMS?
7. What is the function of the network database management?
8. What does DBMS accept?

Exercise 4. Find synonyms for the following words in the text:
a) to permit
b) to admit
c) information
d) databank
e) protection
f) to control
g) composite
h) construction

Практическая работа 8.

DATA PROCESSING AND DATA PROCESSING SYSTEMS

The necessary data are processed by a computer to become useful information. In fact this is the definition of data processing. Data are a collection of facts — unorganized but able to be organized into useful information. Processing is a series of actions or operations that convert inputs into outputs. When we speak of data processing, the input is data, and the output is useful information. So, we can define data processing as a series of actions or operations that converts data into useful information.

We use the term data processing system to include the resources that are used to accomplish the processing of data. There are four types of resources: people, materials, facilities, and equipment. People provide input to computers, operate them, and use their output. Materials, such as boxes of paper and printer ribbons, are consumed in great quantity. Facilities are required to house the computer equipment, people and

materials.

The need for converting facts into useful information is not a phenomenon of modern life. Throughout history, and even prehistory, people have found it necessary to sort data into forms that were easier to understand. For example, the ancient Egyptians recorded the ebb and flow of the Nile River and used this information to predict yearly crop yields. Today computers convert data about land and water into recommendations to farmers on crop planting. Mechanical aids to computation were developed and improved upon in Europe, Asia, and America throughout the seventeenth, eighteenth, and nineteenth centuries. Modern computers are marvels of an electronics technology that continues to produce smaller, cheaper, and more powerful components.

Basic data processing operations

Five basic operations are characteristic of all data processing systems: inputting, storing, processing, outputting, and controlling. They are defined as follows.

Inputting is the process of entering data, which are collected facts, into a data processing system. Storing is saving data or information so that they are available for initial or for additional processing. Processing represents performing arithmetic or logical operations on data in order to convert them into useful information. Outputting is the process of producing useful information, such as a printed report or visual display. Controlling is directing the manner and sequence in which all of the above operations are performed.

Data storage hierarchy

It is known that data, once entered, are organized and stored in successively more comprehensive groupings. Generally, these groupings are called a data storage hierarchy.

The general groupings of any data storage hierarchy are as follows:

Characters, which are all written language symbols: letters, numbers, and special symbols.

Data elements, which are meaningful collections of related characters. Data elements are also called data items or fields.

Records, which are collections of related data elements.

Files, which are collections of related records. A set of related files is called a data base or a data bank.

Vocabulary:

data processing — обработка информации (данных)
to convert — преобразовывать; переводить (в др. единицы)
to accomplish —завершать, заканчивать; осуществлять, выполнять
to house — помещать, размещать
to store — хранить, запоминать, заносить (размещать) в памяти
storage — запоминающее устройство, память; хранение
resource — ресурс; средство; возможность
facility — устройство; средство
facilities — приспособления; возможности
available — доступный; имеющийся (в наличии); возможный
display — дисплей; устройство (визуального) отображения; показ
manner — способ, образ (действий)
sequence — последовательность, порядок (следования)
successively — последовательно
data storage hierarchy — последовательность запоминания информации (данных)
to enter — входить; вводить (данные); заносить, записывать
comprehensive groupings — полные, обширные, универсальные образования
meaningful — имеющий смысл; значащий (о данных)
item — элемент; составная часть
record — запись, регистрация; записывать, регистрировать
file — файл; заносить (хранить) в файл
set — набор; множество; совокупность; серия; группа; система
data base — база данных
related — смежный; взаимосвязанный; относящийся (к ч.-л.)

Exercise 1. Answer the following questions:
1. What is processing?
2. What is data processing?
3. What does the term of data processing system mean?
4. What basic operations does a data processing system include?
5. What is inputting /storing / outputting information?
6. What do you understand by resources?
7. How did ancient Egyptians convert facts into useful information?
8. When were mechanical aids for computation developed?
9. What does data storage hierarchy mean?
10. What are the general groupings of any data storage hierarchy?

Exercise 2. Find English equivalents in the text:
a) системы обработки информации;
b) определение (термина) обработки данных;
c) совокупность фактов;
d) последовательность действий;
e) преобразование входных данных в полезную информацию;
f) завершить обработку данных;
g) обеспечивать ввод информации в компьютер;
h) размещать компьютерное оборудование;
i) нуждаться (требовать) в приспособлениях;
j) превращать информацию в рекомендации;
k) механические средства вычисления;
l) хранение данных;
m) первоначальная обработка данных;

n) дополнительная обработка;
o) выдача полезной информации;
p) зрительное отображение;
q) последовательность запоминания информации;
r) записанные символы языка;
s) база данных;
t) набор взаимосвязанных файлов.

Практическая работа 9.

ADVANTAGES OF COMPUTER DATA PROCESSING

Computer-oriented data processing systems or just computer data processing systems are not designed to imitate manual systems. They should combine the capabilities of both humans and computers. Computer data processing systems can be designed to take advantage of four capabilities of computers.

Accuracy. Once data have been entered correctly into the computer component of a data processing system, the need for further manipulation by humans is eliminated, and the possibility of error is reduced. Computers, when properly programmed, are also unlikely to make computational errors. Of course, computer systems remain vulnerable to the entry by humans of invalid data.

Ease of communications. Data, once entered, can be transmitted wherever needed by communications networks. These may be either earth or satellite-based systems. A travel reservations system is an example of a data communications network. Reservation clerks throughout the world may make an enquiry about transportation or lodgings and receive an almost instant response. Another example is an office communications system that provides executives with access to a reservoir of date, called a corporate data base, from their personal microcomputer work stations.

Capacity of storage. Computers are able to store vast amounts of information, to organize it, and to retrieve it in ways that are far beyond the capabilities of humans. The amount of data that can be stored on devices such as magnetic discs is constantly increasing. Thus the cost per character of data stored is decreasing.

Speed. The speed, at which computer data processing systems can respond, adds to their value. For example, the travel reservations system mentioned above would not be useful if clients had to wait more than a few seconds for a response. The response required might be a fraction of a second.

Thus, an important objective in the design of computer data processing systems is to allow computers to do what they do best and to free humans from routine, error-prone tasks. The most cost-effective computer data processing system is the one that does the job effectively and at the least cost. By using computers in a cost-effective manner, we will be better able to respond to the challenges and opportunities of our post-industrial, information-dependent society.

Vocabulary:

to take advantage of smth — воспользоваться ч.-л.
capability — способность; возможность; характеристика
accuracy — точность; правильность; четкость(изображения)
to eliminate — устранять; удалять; отменять; ликвидировать
error-prone — подверженный ошибкам
to remain vulnerable — оставаться уязвимым, чувствительным
invalid data — неверные, неправильные, недопустимые данные
communications networks — сети передачи данных; сети связи
travel — перемещение; прохождение; путь; ход
instant response — мгновенный ответ (реакция)
to respond — отвечать; реагировать
access — доступ; обращение; обращаться, иметь доступ
capacity of storage — объем (емкость) памяти
to retrieve — извлекать, выбирать (данные); восстанавливать (файл)
value — значение; величина; значимость; ценность; оценка; оценивать
objective — цель; требование; целевая функция
cost-effective — экономичный; экономически оправданный
challenge — трудность; препятствие; представлять трудность

Exercise 1. Answer the questions:

1. What capabilities should data-processing systems combine when designed?
2. What are the main advantages of computers?
3. What do you know of computers accuracy?
4. What is the function of communication networks?
5. Give examples of a data communication network.
6. What do you understand by capacity storage?
7. What other values of computer data processing systems do you know?
8. What is an important objective in the design of computer data processing systems?
9. What is the most effective computer data processing system?
10. What is the best way of responding to the challenges and opportunities of our post-industrial society?

Exercise 2. Find English equivalents for these words:

a) система обработки информации компьютером;
b) оставаться уязвимым;
c) недопустимые данные;
d) легкость осуществления связи;
e) сеть передачи информации;
f) системы, основанные на использовании спутников;
g) служащие по резервированию жилья;
h) получить мгновенный ответ;
i) наводить справки;
j) хранилище данных;
k) корпоративная база данных;
l) объем памяти;
m) запоминать огромное количество информации;
n) извлекать информацию;
o) добавить значимости;
p) упомянутый выше;
q) экономически оправданный.

Exercise 3. Choose the correct answer:

1. Computer data … system gets free humans from routine error-prone tasks.
   a) counting; b) computing: c) processing
2. Computers can store vast amount of information to organize it and … it.
   a) to travel; b) to retrieve; c) to respond
3. The entered data can be transmitted by … networks.
   a) communications; b) conversions; c) procession
4. The possibility of … is reduced if data were correctly put into the data processing system.
   a) character; b) access; c) error
5. Computer data processing systems can … at a fraction of a second.
   a) receive; b) respond; c) retrieve
6. Computer systems are vulnerable to the entry of … data.
   a) invalid; b) invariable; c) invisible
7. As soon as data were entered into the system correctly, the human … is limited.
   a) computation; b) information; c) manipulation
8. The amount of data stored on magnetic discs is constantly … .
   a) decreasing; b) increasing; c) eliminating

Exercise 4. Identifying Subjunctive Mood in Computer Sentences. Objective: Recognize and identify the subjunctive mood in sentences related to computers and technology. Instructions: Determine whether the verb in each sentence is in the subjunctive mood or not. If it is in the subjunctive mood, rewrite the sentence in the indicative mood.

1. If the software were to crash, the entire database would be compromised.

2. It's essential that the firewall blocks any unauthorized access attempts.

3. The IT department requested that all employees update their passwords regularly.

4. The company prefers that employees use company-approved software for work-related tasks.

5. We recommend that the system administrator implement additional security measures.

Exercise 5. Completing Sentences with Subjunctive Mood. Objective: Practice using the subjunctive mood in sentences about computers and technology. Instructions: Complete each sentence with the appropriate verb form in the subjunctive mood.

1. It's crucial that the antivirus software _____ updated regularly to protect against new threats.

2. We suggest that the network administrator _____ the firewall settings for enhanced security.

3. The company requires that all employees _____ strong passwords to access sensitive data.

4. It's imperative that the software developer _____ the code thoroughly before releasing the update.

5. We propose that the IT team _____ measures to improve network efficiency.

Практическая работа 10.

PROGRAMMING LANGUAGES

Programming has been with us for over 40 years but it wasn't born at the time as the first computers. When the first early computers were built, there were no programming languages. First machines were initially programmed by flipping toggle switches and changing cables. Needless to say, this was a slow, awkward process. People began quickly searching for a better, faster way to issue instructions to the computer.

The result was what we call Programming Languages. The programming languages fall into three general categories. They are comprised of ones and zeros, and are directly understood or executed by hardware. Electronic circuitry turns these 0s and 1s into the operations the computer performs.

Assembly Languages are powerful programming tools because they allow programmers a large amount of direct control over the hardware. They offer programmers greater ease in writing instructions but preserve the programmer's ability to declare exactly what operations the hardware performs. Assembly languages are machine-specific, or machine-dependent. Machine-dependent means the instructions are specific to one type of computer hardware. Assembly languages are still provided by most computer manufacturers – they can't be translated and used on another computer.

Assembly code for a Prime mini won't work on a Digital mini. Assembly code can't even be transferred between some machines built by the same manufacturer. For the most part, assembly languages are used by systems programmers to develop operating systems and their components.

So Assembly languages were the first bridge between the English Language and the computer's binary language. The creation of high-level programming languages followed. A high-level language is a language in which each instruction or statement correspond to several machine code instructions.

As high-level languages are a method of writing programs using Englishlike words as instructions, they allow users to write in a notation with which they are familiar, e.g., Fortran in mathematical notation.

High-level programming languages combine several machine language instructions into one high-level instruction. Low-level languages required only a single letter or a short mnemonic a term, or a word that is easy to identify, such as ADD for addition. High-level language requires just a single statement.

A Statement is an expression of instruction in a programming language. For example, PRINT FILE, TXT is a statement. A statement translates into one or more instructions at the machine language level. Each programming language includes a set of statement and a syntax. Syntax is the set of rules governing the language's structure and statements. The syntax rules may include how statements are written, the order in which statements occur, and how sections of programs are organized.

FORTRAN was created in 1954 by John Backus. And it was one of the first high-level languages for FORmular TRANslator. Fortran allows programmers to calculate complex formulas with a few source code instructions. It is used for scientific and mathematical problems. The source program is written using combination of algebraic formulas and English statements of a standard but readable form.

Another high-level machine language is Cobol. Cobol was developed by the Conference on Data Systems Languages. Cobol was issued by the US Government Printing Office in 1960. Cobol stands for Common Business-Oriented Language. The source program is written using statements in English. It was made for business industry, government and education applications. This means that Cobol «has a place for everything» and requires programmers to «put everything in its place». Cobol programs are separated into four divisions:

1. The Identification Division (раздел идентификации) documents the program name, the programmer's name (s), dates and any other important identification information.

2. The Environment Division names the computer hardware, including the CPU and I/O devices.

3. Data Division identifies all associated files and working storage sections of the program.

4. The Procedure Division contains all the instructions in the Cobol program.

Cobol divisions are further divided into paragraphs and sections. This structure helps programmers write code efficiently and with a minimum of repetition and confusion.

Algol was developed as an international language for the expression of the algorithms between individuals, as well as programming language. It was introduced in the early 1960s. Algol stands for ALGOrithmic Language. This language is used for mathematical and scientific use. An Algol program consists of data items, statements and declarations, organized into a program structure BASIC or the Beginners AU-purpose Symbolic Instruction Code, was developed over a period of years by professors John Kemeny and Thomas Kurtz and students in the computer science program at Dartmouth College. It was released in 1965. In most versions, BASIC is an unstructured language. The original Basic was easy to learn allowing computer users to write simple programs within a few minutes.

Basic uses five major categories of statements:

– Arithmetical statements allow users to use Basic like a calculator

– Input/ Output statements, including READ, DATA, INPUT and PRINT

– Control statements including GOTO, IF-THEN, FOR, NEXT and END control the sequence of instructions executed by the computer

– Other statements help document Basic programs and set up data dimensions respectively

– System Commands tell the operating system how to work with Basic programs

RUN means execute a program

LIST directs the computer to display a Basic program.

Exercise 1. Fill in the gaps necessary words or expressions:

1. First machines were ..... by flipping toggle switches and ..... .

2. The programming languages fall into ..... .

3. They are comprised of ..... and ..... .

4. ..... are powerful programming tools.

5. Machine-dependent means ..... .

6. A high-level language is a language in which ..... .

7. ..... is an expression of instruction in a programming language.

8. ..... allows programmers to calculate complex formulas with a few source code instructions.

9. ..... stands for ALGOrithmic Language.

10. Basic uses ..... .

Exercise 2. Fill in the prepositions:

1. Programming has been ..... us for over 40 years.

2. People began searching ..... a better, faster way to issue instructions to the computer.

3. They offer programmers greater ease ..... writing instructions.

4. Assembly code ..... a Prime mini won't work ..... a Digital mini.

5. Assembly languages were the first bridge ..... the English Language and the computer's binary language.

6. A statement translates ..... one or more instructions ..... the machine language level.

7. System Commands tell the operating system how to work ... Basic programs.

Exercise 3. Find the synonyms to the following words:

to execute, a tool, to allow, to preserve a notation, to issue, to differ

Exercise 4. Give appropriate definition of the following terms:

1. Programming   languages

2. Assembly Language

3. Cobol

4. Algol

5. Basic

Exercise 5. Give the situation from the text in which the following words and expressions are used:

1) for over 40 years

2) slow, awkward process

3) three general categories

4) a large amount of direct control

5) machine-dependent

6) to develop operating systems

7) combine several machine language instructions

8) a set of statements

9) a few code instructions

10) write code efficiently

Exercise 6. Answer the questions:

1. How were the first computers programmed?

2. What is an example of assembly language?

3. What does the term machine-dependent mean?

4. What is an assembly language primary used for?

5. What is a high-level language?

6. What does it combine?

7. What is a statement/syntax?

8. When was FORTRAN created? What is Fortran?

9. When was Cobol created? What is Cobol?

10. How many sections are Cobol separated into?

INFORMATION SECURITY

A

For centuries people have been collecting and storing different types of information for various reasons. Today, thanks to the new information technologies the process of collecting and providing information throughout the world is as easy as never before. Though technologies made this process digital, convenient, and dynamic, still information security should be the main concern for those who own and control any type of information, especially when it concerns public, business and government sectors.

Why Information needs security?

We all make use at least of one modern technology in our everyday, business, and public life – computers, laptops, mobile devices, interactive terminals etc. Many people register their personal information to Internet, some for employment, and others for business and social communication purposes. And while we, the users are running through this, we want to be assured that our information would be used and secured in a proper way since we never lose the sense of private life and security.

Information Security is the protection of the confidentiality, integrity and availability of information and information systems from unauthorized access, use, disclosure, disruption, modification, perusal, inspection, recording or destruction. It is based on the principles of the consumers' interests and human rights. In many countries it is a legal requirement. Protecting information is critical for business and governmental institutions which deal with huge volumes of confidential information about their employees, customers, products, research, and financial status. Most of this information is now collected, processed and stored on electronic computers and transmitted across networks. So now, we can imagine what could happen if this kind of information would be available to everyone – it will cause an incredible damage like lost business, law suits or even bankruptcy of the business.

Of course, securing information is about securing the system or network that the information is stored in. But apart from all this there should be a concise understanding of information security core aspects in order to plan, implement and maintain an effective security policy. That policy should be compliant with local laws and industry standards.

B

Information Classification.

Information value needs to be assessed to have appropriate security requirements for different types of information. Not all information is equal and so not all information requires the same level of protection. This requires information to be classified due to its value. So a thorough risk management should be realized. Obviously, the more sensitive or valuable the information the stronger the security control needs to be.

Access Control.

The protected information should be available only to those people who are authorized to access that information and to control its development. That is why all the computers, software and networks which process the information, should be set up with access control and provide authorization. mechanisms.

Cryptography.

Cryptography is a main asset in information security. It is the process of converting the secured data into unusable form while the information is in transmission or just is in storage. This is done for preventing unauthorized users from reading and interpreting the sensitive data they could accidentally get or access.

Unusable information could be transformed back to the usable one by an authorized user, who has the cryptographic key. This converse process is decryption.

Defense-In-Depth.

Information security assumes not only the protection of stored data but also its protection on the stages of creation, development and disposal. In other words, it is "responsible" for the whole life-time of the information. During its life-time information may "travel" through different processes and systems and even change its format and value. Defense-in-depth allows controlling information life-time and adequately reacts on information transformations and external threats. It is a comprehensive and detailed approach to information security. It is a multi-layered defense system where each component of the information has its own protection mechanisms.

Backups and Disaster Recovery.

These days nobody and nothing is insured from unexpected and unprecedented cases. So does the information. To provide the business continuity and information completeness companies and other institutions of high significance employ disaster recovery planning (DRP) and back-ups policy.

Information back up is the periodical reservation of data copy on extra systems to have at least one reserved copy in case of data loss or destruction.

DRP is focused on taking the necessary steps to resume normal business operations as quickly as possible. It is executed immediately after the disaster occurs and details what steps are to be taken in order to recover critical information.

Hardware and Software.

An effective information security system incorporates a set of policies, security products, hardware and software technologies and procedures. The correct and targeted deployment of all those components should make up an effective information security.

A

Exercise 1. Answer the following questions:
1. Why has the process of collecting and providing information throughout the world become easy?
2. Why do people register their personal information?
3. What is the purpose of information security?
4. What principles is information security based?
5. Why is protecting information sometimes critical for business?
6. What could happen if personal information would be available to everyone?
7. What should security policy be compliant with?

Exercise 2. Translate the following sentences into Russian:
1. Though technologies made this process digital, convenient, and dynamic, still information security should be the main concern for those who own and control any type of information, especially when it concerns public, business and government sectors.
2. Protecting information is critical for business and governmental institutions which deal with huge volumes of confidential information about their employees, customers, products, research, and financial status.
3. Of course, securing information is about securing the system or network that the information is stored in.

4. And while we, the users are running through this, we want to be assured that our information would be used and secured in a proper way since we never lose the sense of private life and security.

B

Exercise 1. Answer the questions:
1. What does information security system incorporate?
2. What is information back-up?
3. What is DRP focused on?
4. Why should computers be set up with access control?
5. What does information security assume?
6. What is cryptography?
7. What is decryption?
8. What does defense-in-depth allow?
9. Why should the information be classified?

Exercise 2. Say if the following statements are True or False. It the statement is false transform it according to the text:
1. The simplest the information the stronger the security control needs to be.
2. Only security products and hardware technologies make up an effective information security.
3. The protected information should be available only to people with an authorized access.
4. Disaster recovery planning is focused on taking the necessary steps to resume normal business operations as quickly as possible.
5. These days everyone is insured from unexpected cases.
6. Information may travel through different processes and systems but can't change its format and value.
7. Information is not equal but it requires the same level of protection.
8. Unusable information can be transformed back to the usable one.
9. Cryptography is an important part of information security.

Exercise 3. Match the following terms to its definitions:

1) information back-up;
2) cryptography;
3) decryption;
4) DRP;
5) defense-in-depth;
6) access control;
7) unusable information;
8) usable information.

a) information available only to an authorized person;
b) transformation of unusable information into usable;
c) the periodical reservation of data copy on extra systems;
d) information available to everyone;
e) is the process of converting the secured data into unusable form;
f) the necessary steps to resume normal business operations as quickly as possible;
g) allows controlling information life-time and adequately reacts on information transformations;
h) a way of limiting access to a system or to information.

GRAMMAR REFERENCIES

Глагол to be в Simple Active

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Present	Past	Future
(I) am (he, she, it) is (we, you, they) are	(I, he, she, it) was (ед. ч.) were (мн. ч.)	(I, we) shall be (1-е л.) will be

Глагол to have в Simple Active

Present	Past	Future
have (got) (he, she, it)has (got)	had	(I, we) shall have will have

Оборот there + to be в Simple Active

Present	Past	Future
there is (ед.ч.) there are (мн.ч.)	there was (ед.ч.) there were (мн.ч.)	there will be

Степени сравнения прилагательных

	Положительная	Сравнительная	Превосходная
I	long easy	longer easier	(the) longest (the) easiest
п	interesting	more interesting	(the) most interesting
ш	good bad much, many	better worse more	(the) best (the) worst (the) most

Времена группы Simple Passive

to be + Participle П	
Infinitive	to be written, to be translated
Present	The letter is written/translated.
Past	The letter was written/translated.

Сводная таблица модальных глаголов и их эквивалентов

	Present	Past	Future
Долженствование	I **must** meet him. I have to meet him. I am to meet him. I **should** meet him.	I **had** to meet him. I **was** to meet him.	I **shall have to** meet him. I'll be to meet him.
Способность или возможность совершения действия	He **can** help you. He is able to help you.	He **could** help you. He was able to help you.	He **will be able to** help you.
Разрешение или возможность	I may use this device. I am allowed to use the device.	I might use this device I was allowed to use the device.	I **shall be allowed to** use the device.

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Таблица времен группы Simple Active

Форма	Present Simple	Past Simple	Future Simple
Утвердительная	My friends study French. He speak**s** English.	My friends studi**ed** French at school. He **spoke** English at the conference.	My friends **will study** French at the Institute. The teacher **will speak** about our English exam.
Вопросительная	**Do** your friends study French? **Does** he speak English?	**Did** your friends study French at school? **Did** he speak English at the conference?	**Will** your friends study French at the Institute? **Will** the teacher speak about our English exam?
Отрицательная	My friends **don't** study French. He **doesn't**	My friends **did not** study French. He **didn't** speak English at the	My friends **won't study** French at the Institute. The teacher **won't speak** about our English

Структура специальных вопросов

Вопроси-тельные слова	Вспомо-гатель-ный глагол	Подлежащее и определение к нему	Смысловой глагол в форме инфинитива	Другие члены предложения
What Where When	do did	you he	do go	in the evening? yesterday?

Таблица времен группы Progressive Active

Форма	Present Progressive	Past Progressive	Future Progressive
Утверди тельная	The **are having** an English class.	They **were having** an English class when I came to see them. He **was writing** an exercise from 6 till 8 o'clock.	They **will be having** an English class tomorrow at 9 o'clock. He **will be** writing an
Вопросит ельная	**Are** they **having** an English class? **Is** he still **writing** an exercise?	**Were** they **having** an English class when I came to see them? **Was he writing** an exercise from 6 till 8 o'clock.	**Will** they **be having** an English class tomorrow at 9 o'clock? **Will he be writing** an exercise from 6 till 8 o'clock
Отрицат ельная	They **aren't having** an English class, they are having a Russian class. He **isn't writing** an exercise, he is reading a book.	They **weren't having** an English class when 1 came to see them, they were having a Russian **class.** He **wasn't writing** an exercise from 6 till 8 o'clock, he was reading a book.	They **will not be having** an English class tomorrow at 9 o'clock, they will be having a Russian class. He **won't be writing** an exercise from 6 till 8 o'clock tomorrow, he'll

Таблица времен группы Perfect Active

Форма	Present Perfect	Past Perfect	Future Perfect
Утвердительная	I **have sent** the letter.	I **had** already **sent** the letter by 6 o'clock yesterday.	I **shall have sent** the letter by tomorrow evening.
Вопросительная	**Have** you **sent** the letter?	**Had** you **sent** the letter by 6 o'clock yesterday?	**Will** you **have sent** the letter by tomorrow evening?
Отрицательная	I **have not sent** the letter yet.	I **had not sent** the letter by 6 o'clock yesterday.	I **shall not have sent** the letter by tomorrow evening.

Таблица времен Simple, Progressive, Perfect in Passive Voice

	Simple to be + Participle II	Progressive to be + being + Participle II	Perfect to have + been + Participle II
Present	The letter is translated	The letter is being translated	The letter has been translated
	Is the letter translated?	Is the letter being translated?	Has the letter been translated?
	The letter isn't translated	The letter isn't being translated	The letter hasn't been translated.
Past	The letter was translated	The letter was being translated	The letter had been translated
	Was the letter translated?	Was the letter being translated?	Had the letter been translated?
	The letter wasn't translated.	The letter wasn't being translated	The letter hadn't been translated?
Future	The letter will be translated	Не употребляются.	The letter will have been translated
	Will the letter be translated?		Will the letter have been translated?
	The letter won't be translated		The letter won't have been translated

Таблица форм причастий

	Participle		Participle II
	Active	Passive	changed 1 Определение: *изменяемый, измененный* 2)обстоятельство:
Simple	changing 1) определение: *изменяющий(ся)*	being changed 1) определение: *изменяющийся, изменяемый* 2)	
Perfect	having changed обстоятельство: *изменив(шись)*	having been changed обстоятельство: *когда (его) изменили, после*	

Таблица производных слов от some, any, no, every

Местоимения	+ thing	+body, one	+where	Употребляют
some *некоторый* *какой-то*	something *что-то,* *что-нибудь*	somebody someone *кто-то*	somewhere *где-то,* *куда-то,* *где-нибудь,*	в утверд. . предл.
any 1)*всякий любой* 2)*какой-нибудь*	anything 1)*всё*	anybody anyone	anywhere 1)везде,	1)в утверд. 2)в вопросит, предл.
no, not any *никакой + не*	nothing (not anything) *ничто*	nobody (not anybody), no one	nowhere not anywhere	в отрицат. предп.
every *всякий,*	everything *всё*	everbody everyone	everywhere *везде,*	в утверд., вопросит, и отрицат.

Словообразовательные аффиксы

Существительные	
- ion / - sion /-tion	- discussion, transmission, combination
- er / -or	- writer, inspector
-ing	- opening
-ment	- development
-ty / -ity	- activity
-ance / -ence	- importance, difference
-ness	- darkness
-ure / -ture	- mixture
Прилагательные	
-ic	- democratic
-ive	- progressive
-able / -ible	- valuable, accessible
-ant / -ent	-resistant, different
-ous	- dangerous
-al	- central
-ful	- hopeful
-less	- hopeless
-un / -in / -ir / -il / -im	- uncomfortable, indirect, irregular, illogical, impossible

Глагол	
-ize	- to characterize
re-	- to rewrite

Infinitive	Past	Participle II	Translation
arise	arose	arisen	возникать
awake	awoke	awaked	будить, проснуться
be	was, were	been	быть
bear	bore	born	носить, родить
beat	beat	beaten	бить
become	became	become	стать
begin	began	begun	начать
bend	bent	bent	согнуться
bind	bound	bound	связать
bite	bit	bitten	кусать
blow	blew	blown	дуть
break	broke	broken	ломать
bring	brought	brought	приносить
build	built	built	строить
burst	burst	burst	разразиться, взорваться
buy	bought	bought	покупать
catch	caught	caught	ловить, поймать
choose	chose	chosen	выбирать
cut	cut	cut	резать
deal	dealt	dealt	иметь дело

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dream	dreamt	dreamt	мечтать
do	did	done	делать
draw	drew	drawn	тащить, рисовать
drink	drank	drunk	пить
drive	drove	driven	ехать
eat	ate	eaten	есть, кушать
fall	fell	fallen	падать
feed	fed	fed	кормить
fight	fought	fought	сражаться
find	found	found	находить
fly	flew	flown	летать
forbid	forbade	- forbidden	запретить
forget	forgot	forgotten	забыть
forgive	forgave	forgiven	прощать
freeze	froze	frozen	замёрзнуть, замораживать
get	got	got	получить
give	gave	given	дать
go	went	gone	идти
grow	grew	grown	расти
hang	hung	hung	висеть, повесить
have	had	had	иметь
hear	heard	heard	слушать
hit	hit	hit	ударить, попасть
hold[1]	held	held	держать
hurt	hurt	hurt	причинять боль

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know	knew	known	знать
keep	kept	kept	держать
lay	laid	laid	класть, положить
lead	laid	laid	вести
leap	leapt/leaped	leapt/leaped	прыгать
leave	left	left	оставлять
lend	lent	lent	одолжить
let	let	let	пустить, дать
lie	lay	lain	лежать
lose	lost	lost	терять
make	made	made	делать
meet	met	met	встречать
pay	paid	paid	платить
put	put	put	класть
read	read	read	читать
ride	rode	ridden	ездить верхом
ring	rang	rung	звонить
rise	rose	risen	поднимать
run	ran	run	бежать
say	said	said	говорить, сказать
see	saw	seen	видеть
sell	sold	sold	продавать
send	sent	sent	послать
set	set	set	устанавливать
shake	shook	shaken	трясти

shine	shone	shone	светить, сиять
shoot	shot	shot	стрелять, давать побеги
show	showed	shown/showed	показывать
sing	sang	sung	петь
sink	sank	sunk	опускаться
sit	sat	sat	сидеть
sleep	slept	slept	спать
slide	slid	slid	скользить
speak	spoke	spoken	говорить
spend	spent	spent	тратить
steal	stole	stolen	украсть
stick	stuck	stuck	втолкнуть, приклеить
strike	struck	struck/stricken	ударять, бастовать
swear	swore	sworn	клясться
swim	swam	swum	плавать
take	took	taken	брать
teach	taught	taught	учить
tell	told	told	говорить
think	thought	thought	думать
throw	threw	thrown	бросить
wake	woke	woken	просыпаться, будить
wear	wore	worn	носить
weep	wept	wept	плакать
win	won	won	выигрывать
wind	wound	wound	заводить

write   wrote   written   писать

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