

Министерство науки и высшего образования Российской Федерации
Федеральное государственное бюджетное образовательное учреждение
высшего образования
«Сибирский государственный университет геосистем и технологий»
(СГУГиТ)

Н. Б. Перунова, Д. В. Романов, О. В. Чернышева

ИНОСТРАННЫЙ ЯЗЫК

Утверждено редакционно-издательским советом университета
в качестве учебного пособия для обучающихся по направлению подготовки
09.03.02 Информационные системы и технологии (уровень бакалавриата)

Новосибирск
СГУГиТ
2024

УДК 811.111

П27

Рецензенты: доктор филологических наук, доцент СГУГиТ *С. С. Жданов*

кандидат филологических наук, доцент, НГТУ *А. И. Бочкарев*

Перунова, Н. Б.

П27 Иностранный язык : учебное пособие / Н. Б. Перунова, Д. В. Романов, О. В. Чернышева. – Новосибирск : СГУГиТ, 2024. – 45 с. – Текст : непосредственный.

ISBN 978-5-907711-72-3

Учебное пособие подготовлено старшими преподавателями Н. Б. Перуновой, Д. В. Романовым и О. В. Чернышевой на кафедре языковой подготовки и межкультурных коммуникаций СГУГиТ.

В данном пособии представлены учебные тексты и упражнения на английском языке для проработки и закрепления общей ключевой лексики и профессионально-ориентированной терминологии.

Учебное пособие «Иностранный язык» предназначено для обучающихся 1-го курса по направлению подготовки 09.03.02 Информационные системы и технологии (уровень бакалавриата).

Рекомендовано к изданию кафедрой языковой подготовки и межкультурных коммуникаций, Ученым советом Института геодезии и менеджмента СГУГиТ.

Печатается по решению редакционно-издательского совета СГУГиТ

УДК 811.111

ISBN 978-5-907711-72-3

© СГУГиТ, 2024

ОГЛАВЛЕНИЕ

Введение	4
Раздел 1. Грамматическая часть	5
1.1. Времена активного залога	5
1.2. Времена пассивного залога	7
1.3. Модальные глаголы и их синонимы.....	8
1.4. Формы и инфинитивы	10
1.5. Причастие, герундий, инфинитив.....	11
1.6. Условные предложения (conditionals)	15
Раздел 2. Лексическая часть.....	18
Unit 1. About Myself	18
Unit 2. Our University	20
Unit 3. The Russian Federation.....	25
Unit 4. Canada	28
Unit 5. IT Specialty and career	31
Раздел 3. Дополнительные тексты для чтения	35
3.1. Computing devices: from ancient times to nowadays.....	35
Part 1. Mechanical devices	35
Part 2. Electronic devices.....	36
3.2. Software development: from human computers to AI	39
Part 1	39
Part 2.....	41
Заключение	43
Библиографический список.....	44

ВВЕДЕНИЕ

Учебное пособие «Иностранный язык» предназначено для обучающихся 1-го курса по направлению подготовки 09.03.02 Информационные системы и технологии. Цель данного учебного пособия – познакомить обучающихся с ключевой лексикой английского языка и профессионально-ориентированной терминологией.

Учебное пособие разработано на основе оригинальных текстов, представляющих практический интерес. Тексты составлялись на базе общей информации по темам, прописанным в программе обучения по направлению.

Упражнения нацелены на активизацию и закрепление лексического материала в качестве основы лексической базы, характерной для текстов общей направленности. Тексты дают возможность преподавателю использовать разные виды заданий: выборочный перевод (письменный и устный), смысловой анализ и т. д.

Данное учебное пособие подготовлено в соответствии с рабочей программой.

РАЗДЕЛ 1. ГРАММАТИЧЕСКАЯ ЧАСТЬ

1.1. Времена активного залога

Для полноценного и свободного владения английским языком необходимо освоить следующие грамматические темы: системы времен в активном и пассивном залогах, модальные глаголы, инфинитивные конструкции, герундий и систему условных предложений (conditional).

Система времен активного залога английского языка и их значения

	Simple	Continuous	Perfect	Perfect continuous
Future	will write	will be writing	will have written	will have been writing
Present	write/writes	am/is/are writing	have/has written	have/has been writing
Past	wrote	was/were writing	had written	had been writing

В данной таблице глагол ‘write’ – основной глагол, обозначающий действие, которое выполняет деятель (т. е. подлежащее). Например: I am writing a letter now. – Я пишу письмо сейчас, где «Я» – деятель (подлежащее), который выполняет действие (сказуемое).

Значения простых времен – факт, однократное действие или регулярное действие. Значение продолженных времен – длительное действие в момент времени. Настоящее продолженное время (present continuous) имеет также три дополнительных значения: продолжительное действие на период времени «сейчас», раздражение и запланированное действие (договоренность) в будущем. Значение завершенных времен – завершённое действие к моменту времени. Значение продолжено-завершённых времен – длительное действие, завершённое (или незавершённое) к моменту времени.

Ex. 1. Поставьте глаголы в скобках в нужную форму.

Tom: – Hi Sue, how are you?

Sue: – Fine thanks, and you?

T: – Me too. Listen, Sue. John has a birthday tomorrow. He tells me we _____ **1** **(have)** a party tomorrow. He _____ **2** **(already invite)** all our friends. Have you gotten his message so far?

S: – Yes, I _____ **3** **(have)**. He _____ **4** **(phone)** me a few minutes ago. He booked a table at “Milton’s bar” in the city centre for 5 p.m. Tomorrow is Friday and they _____ **5** **(have)** live music.

T: – So, will you come?

S: – Sure, I _____ **6** **(be)**, but I have a lot to do tomorrow. My sister Ann _____ **7** **(get out)** from the City Hospital tomorrow at 3 p.m. and I _____ **8** **(have to)** help her get home. I _____ **9** **(already ask)** Steve to drive us home on his car. I don’t think I _____ **10** **(come)** to the party by 5 o’clock, but I’ll come as soon as I’ve taken Ann home.

T: – I heard that she _____ **11** **(break)** her leg while doing some gardening.

S: – Yes, she _____ **12** **(cut)** dry branches in our garden, when she _____ **13** **(lose)** balance and _____ **14** **(fall off)** the ladder. She told us that some bird _____ **15** **(frighten)** her. We took her to the City Hospital. The doctors _____ **16** **(examine)** her and put a plaster on her leg.

T: – Poor Ann! I hope she _____ **17** **(be)** alright soon. I broke my leg a year ago. My doctor said I was lucky I broke only a leg because I _____ **18** **(crush)** into the tree on my bike! I might have got much more injuries!

S: – You’re really lucky, Tom! How long _____ you _____ **19** **(wear)** plaster on your leg before they _____ **20** **(take)** it off?

T: – For about 4 weeks. Afterwards I _____ **21** **(have to)** do a lot of exercises to make my leg well again. Actually it _____ **22** **(take)** me 4 more weeks before my leg was OK!

S: – Oh, really?

T: – Yes, this wasn’t so easy! But you have to be strong if you want to recover. If you want I _____ **23** **(give)** Ann my set of exercises that my coach _____ **24** **(work out)** for me. And I’m sure she _____ **25** **(recover)** soon!

S: – Really? Oh, that’s great! Thank you, Tom [1].

1.2. Времена пассивного залога

Система времен пассивного залога английского языка

	Simple	Continuous	Perfect
Future	will be done	will be being done	will have been done
Present	Am/is/are done	am/is/are being done	have/has been done
Past	Was/were done	was/were being done	had been done

Пассивный залог достаточно часто используется в повседневной речи. Он выполняет функцию формализации и больше используется в речи в ситуациях официального общения, где важно указать не столько «деятеля», сколько само действие, либо «деятель» говорящему не известен, не важен или очевиден. Например, *The house was built in 1960*. Деятель не важен, так как говорящий делает акцент на год постройки дома. *The window was broken at night*. Деятель не известен. *Three men were arrested in the robbery last night*. Деятель очевиден, так как арестовать может только полиция. Однако если информация о деятеле является существенной и несет дополнительный смысл, то деятель указывается с предлогом “by”. Например, *The museum was opened by the Queen*. Также можно указать средство совершения действия с помощью предлога “with”. *The window was crushed by a boy with a brick*.

Структуры пассивного залога могут строиться только с глаголами, имеющими прямое дополнение, потому что в пассивном залоге именно это прямое дополнение становится подлежащим. Например, watch a film, read a book, do homework. Для того чтобы переделать предложение из активного в пассивный залог, необходимо выполнить три действия.

1. Определить дополнение в активном предложении и поставить его на место подлежащего в пассивном.
2. Поставить глагол сказуемого в пассивную форму.
3. Понять есть ли необходимость указывать “деятеля”.

Пример.

The gardener has planted some trees.

Some trees have been planted by the gardener.

Глаголы, имеющие два дополнения, могут строить два пассивных предложения соответственно. Например, She offered me a cup of tea.

I was offered a cup of tea.

A cup of tea was offered to me.

Оба варианта грамматически правильны, но первый более обычен и чаще употребляется.

При переводе пассивных предложений с английского на русский мы в большинстве случаев используем безличные предложения. Например, “Мне предложили чашку чая” или “Чашку чая предложили мне”. Поэтому при переводе русских безличных предложений на английский мы будем использовать пассивный залог. Например, “Меня привезли на вокзал. – I was taken to the station”, “Мне подарили большую картину. – I was given a big painting”, “Нам сказали придти к директору. – We were told to come to the director”.

Ex. 2. Перепишите подчеркнутые предложения в пассивном залоге. Не меняйте грамматическое время.

1) Someone had broken into the National Museum last night before 2) they switched on the alarm system. 3) He crushed the side window with a brick at the moment when 4) the night guards were checking the front door video cameras. 5) The night guards heard the noise. They tried to stop the criminal but it was too late. As it turned out later 6) he had stolen some valuable paintings and 7) destroyed a statue. 8) The inside video cameras recorded everything. Now 9) the police representative has just informed us that 10) they have found fingerprints on the walls and now 11) they are identifying the suspect. 12) They are also looking for witnesses of the crime and 13) they have already questioned all staff members of the museum. They say 14) they must catch the thief soon and 15) they will catch him! [1]

1.3. Модальные глаголы и их синонимы

Также в повседневном общении часто используются модальные глаголы, которые имеют некоторые отличия от обычных смысловых глаголов. Модальные глаголы:

- 1) не имеют временных форм (кроме can, need, have to);
- 2) не имеют окончания -(e)s или -(e)d (кроме need, have to);

3) не используются со вспомогательными глаголами (do, does, did и т. д.), так как сами выполняют их функцию (кроме need, have to).

Это особые глаголы, которые выражают не само действие, а отношение к действию. Например, во фразе “I can swim well” модальный глагол “can” выражает способность человека выполнить действие “swim”. В данном случае “способность” – это функция глагола “can”. Все модальные глаголы и их синонимы выполняют по несколько функций. Смотрим таблицу ниже.

Таблица модальных глаголов и их функций

Модальный глагол	Функция	Пример
Can/be able to	Способность/ неспособность	I can/can't run fast
Can/may/must/ might	Возможность	It must/can/may/might be Jack's house
Can't	Невозможность	It can't be Jack's house
Can/may/be allowed to	Разрешение	You can/may/are allowed to park here
Can't, may not/ not be allowed to	Запрет	You can't/may not/are not allowed to play in their garden
Must not	Строгий запрет	You must not park here
Must/have to	Обязанность/ принуждение	You must follow the school rules
Should/ought to	Совет, рекомендация	You should buy a new car
Shall, would like	Просьба или предложение	I would like you to finish the work today Shall we go to the café?
Need	Потребность/внутренняя необходимость	I need to visit my uncle in the hospital
Need not/ don't need to/don't have to	Отсутствие потребности или необходимости в настоящем	He need not/does not need to/does not have to go to the bank
Need not have done/ didn't need to/didn't have to	Отсутствие потребности или необходимости в прошедшем	We need not have done it (but we did because we did not know). We did not need/have to do it (we knew and did not do it)

После модальных глаголов, “make” в значении “заставлять”, “let” и “help” инфинитив не имеет частицу “to”. Во всех других случаях использования частица “to” ставится. Например, We are going **to** travel around Europe. He seems **to** have read all the books in the library. He was glad **to** have been introduced to MR. Parker.

Ex. 3. Поставьте модальные глаголы и фразы в пропуски.

Are not allowed, must, must not, may, may not, will have to, had to, will be able, could, can't, would, shall, should not, might, need.

1. She _____ be his sister. They look alike.
2. _____ I open the door for you?
3. You _____ use your notes during the test.
4. There _____ be some apple pie left. But I am not sure.
5. Here you will find everything you _____ for this work.
6. You _____ come in now.
7. You _____ tell anyone what happened!
8. I did not want to but I _____ to go the bank as I did not have cash.
9. What _____ you do if you got lost in the forest?
10. Mozart _____ play the piano when he was 5!
11. I am afraid he might get lost in the city. I think I _____ go with him.
12. Look at him! He _____ be her husband! He is so old!
13. You _____ buy this car. It's too expensive for us.
14. We _____ to run in the school.
15. If he works harder, he _____ to pass his exams well [1].

1.4. Формы инфинитива

Инфинитив – начальная неопределенная форма глагола, выражающая только само действие или состояние. Из него формируются личные формы во всех временах и залогах английского, по которым можно определить время действия, лицо и число деятеля (лей). Например, to write – писать, he writes – он пишет, 3-е лицо, ед. число, наст. прост. время, утверждение.

Таблица форм инфинитива

	Active	Passive
Simple	To write	To be written
Continuous	To be writing	-----
Perfect	To have written	To have been written
Perfect- Continuous	To have been writing	-----

Четыре активные формы инфинитива ставятся в предложении после глагола-сказуемого и выражают по отношению к нему регулярные (simple), продолжительные (continuous), завершённые (perfect) и завершено-продолжительные действия (perfect-continuous). Две пассивные формы выражают регулярные (simple) и завершённые (perfect) действия.

Ex. 4. Поставьте глаголы в скобках в нужную форму инфинитива и переведите предложения на русский.

He seems (to read) a lot. 2. He seems (to read) now. 3. He seems (to read) since morning. 4. He seems (to read) all the books in the library. 5. I want (to take) you to the concert. 6. I want (to take) to the concert by my father. 7. She was glad (to help) her friends. 8. She hoped (to help) by her friends. 9. I hope (to see) you soon. 10. We expect (to be) back in two days. 11. He expected (to help) by the teacher. 12. The children seem (to play) since morning. 13. I am glad (to do) all the homework yesterday. 14. She seems (to work) at this problem ever since she came here. 15. I am sorry (to break) your cup. 16. His English seems (to get) better. 17. He is glad (to help) with his health problems [2].

1.5. Причастие, герундий, инфинитив

Причастие I и герундий также очень часто используются в повседневной речи. Они образуются прибавлением суффикса “-ing” к инфинитиву глагола. Например, swim – swimming, read – reading и т. д. Форму причастия имеют все глаголы английского кроме модальных. При изучении английского очень важно уметь грамотно переводить предложения

с инфинитивом и герундием на русский, потому что зачастую дословный перевод невозможен. Например, he likes being praised (герундий). Ему нравится, когда его хвалят. I want to be taken (инфинитив) to the concert. Я хочу, чтобы меня взяли на концерт.

Причастие I также имеет четыре формы (таблица ниже). Но в большинстве случаев используется активная простая форма [2].

Таблица форм причастия I

	Active	Passive
Simple	doing	being done
Perfect	having done	having been done

Примеры.

She likes shopping – ей нравится ходить по магазинам.

He hates being disturbed during his work – он ненавидит, когда его беспокоят во время работы.

Having written the letter she sent it – написав письмо, она отправила его.

He was surprised at having been asked about it – он был удивлен, когда его спросили об этом.

Основные случаи употребления инфинитива, причастия, герундия описаны в таблице ниже.

Таблица примеров инфинитива, причастия и герундия

Инфинитив	Герундий	Причастие I
Цель He went to buy some bread	Как существительное Swimming is good for health	I saw a man running along the street.
После выражений would like / love / prefer. I would like to live in the country	После like, love, hate, dislike, enjoy We like walking in our park	The boy playing in the garden is my sister's son
После прилагательных glad, angry, happy pleased, annoyed и т. д. She was happy to have been invited to the party	После start, begin, stop, finish They finished working at 7 p.m.	He lay on the sofa reading a newspaper

Окончание таблицы

Инфинитив	Герундий	Причастие I
Со словами too и enough He is too old to drive She is clever enough to understand this	После go для физических видов деятельности She goes jogging every morning	Being a great book-lover, he spent all his money on new books
После глаголов seem, appear, want, agree, decide, offer, expect, hope, manage, promise, refuse. He refused to help them	После avoid, admit, confess to, deny, look forward to, mind, object to, prefer, suggest, regret, risk, spend. They denied stealing the money	Having lived in that town all his life, he knew it very well
После вопросительных слов what, where, how, who, which We didn't know what to do	После I am busy, it's (not) worth, what's the use of, it's no use, it's (no) good, be used to, there is no point in There is no point in running. We have plenty of time	When writing an essay we must use new words and expressions
После модальных глаголов и make, let, help, hear, see + дополнение Инфинитив ставится без частицы "to". Let me go or I will make you regret it	После предлогов He left without looking at me She is interested in developing the project There is no chance of winning	Having been seriously wounded, he was no longer fit for military service

После следующих глаголов может ставиться как инфинитив, так и причастие, но перевод будет различаться. Это глаголы regret, go on, mean, remember, want, try, forget, stop, be afraid to do smth и be afraid of doing smth.

Сравните:

I regret to tell you that... Я сожалею, что приходится вам сообщить, что...	I regret saying rude words to you. Я сожалею, что сказал вам грубые слова
After finishing report she went on to write letters. Закончив отчет, она продолжила писать письма	She went on talking for hours Она продолжала говорить часами

He means to find the job abroad Он намеревается найти работу за границей	Looking for a job means attending many interviews Поиск работы подразумевает посещение многих собеседований
Remember to lock the door when you leave Помни, что нужно запереть дверь, когда ты уйдешь	I clearly remember locking the door when I left Я ясно помню, что запер дверь, когда ушел
I want to spend my holiday in Greece Я хочу провести отпуск в Греции	This room wants painting Эту комнату нужно покрасить
The firemen are trying to put out the fire Пожарные пытаются потушить огонь	Why don't you try adding some sugar to the sauce? It might taste better. Почему бы тебе не попробовать добавить немного сахара в соус. Он может стать вкуснее
I forgot to buy some milk, I am sorry. Я забыл купить молока, прости	He will never forget flying over the Alps Он никогда не забудет полет над Альпами
My phone rang and I stopped to talk У меня зазвонил телефон, и я остановился, чтобы поговорить	Stop talking, please Прекратите разговаривать, пожалуйста
He is afraid to fly on planes Он боится летать на самолетах	She doesn't want to climb that tree. She is afraid of falling Она не хочет лезть на дерево. Она боится упасть

Ex. 5. Заполните пропуски инфинитивом, причастием I, герундием

1. I don't remember _____ (see) this film before.
2. Remember _____ (go) to the bank. You should pay the bills.
3. When he had written his first book he went on _____ (write) seven more.
4. She went on _____ (talk) even after her friend fell asleep.
5. I regret _____ (leave) the school at the age of 16.
6. I regret _____ (tell) you that you have failed the test.
7. He means _____ (build) the boat and travel round the world.

8. Doing well in this course means _____ (study) very hard.
9. I've been trying _____ (start) the car for hours.
10. Why don't you try _____ (put) some petrol in the tank?
11. She doesn't want _____ (drive) the car. She is afraid of _____ (have) an accident.
12. He is afraid _____ (walk) at night [2].
13. She forgot _____ (invite) her best friend to the party.
14. She will never forget _____ (see) this show.
15. On the way home he stopped _____ (buy) some chocolate.
16. The baby didn't stop _____ (cry) all night.
17. These windows are dirty. They want _____ (wash).
18. I want _____ (speak) to Sally, please.
19. She is really sorry for _____ (shout) at you last night.
20. I am sorry _____ (tell) you your car has been stolen.

1.6. Условные предложения (conditionals)

Условные предложения в повседневной речи используются очень часто и включают в себя все описанные выше темы. Они разделяются на четыре основных типа – нулевой, первый, второй и третий, а также два смешанных, которые представлены в таблице ниже.

Таблица типов условных предложений

Тип	Причина	Следствие	Значение
0	Present Simple	Present simple	Реальное настоящее
1	Present Simple	Future Simple	Реальное будущее
2	Past Simple	would + Simple/Continuous infinitive	Маловероятное настоящее или будущее
3	Past perfect	Would + perfect/perfect continuous infinitive	Нереальное прошедшее

Смешанные типы формируются из 2 и 3. В одном причина строится по 3-му типу, а следствие по 2-му. В другом наоборот, причина строится по 2-му типу, а следствие по 3-му.

Примеры основных типов:

If you freeze water, it turns into ice. Если ты замораживаешь воду, она превращается в лед (0 тип).

If you freeze water, it will turn into ice. Если ты заморозишь воду, она превратится в лёд (1 тип).

If you froze water, it would turn into ice. Если бы ты замораживал воду, она бы превращалась в лёд (2 тип).

If you had frozen water, it would have turned into ice. Если бы ты заморозил воду, она бы превратилась в лед (3 тип).

Примеры смешанных типов.

If you had bought (3 тип) the products yesterday, we would have (2 тип) breakfast now.

Если бы ты купил продукты вчера, мы бы сейчас позавтракали.

Данный смешанный тип не представляет трудности для понимания, так как причина хронологически произошла раньше, чем следствие.

If you weren't (2 тип) so absent-minded, you would not have lost (3 тип) your passport yesterday.

Если бы ты не был таким рассеянным, ты бы не потерял паспорт вчера.

В данном случае причина, по которой произошло действие, была и вчера и есть сейчас.

Сложность условных структур в том, что они могут содержать вопрос, отрицание, активный и пассивный залого, любые формы инфинитива после глагола "would", модальные глаголы could, should, might, need. Соответственно, чтобы строить условные предложения, необходимо сначала освоить эти темы.

Ex. 6. Поставьте глаголы в правильную форму и определите тип условных предложений.

1. If she did not work hard she _____ (lose) her job.
2. I'll tell you if there _____ (be) any messages for you.
3. You should see a doctor if you _____ (not feel) well.
4. You _____ (not be fired) if you had not lost your temper!
5. I _____ (buy) these jeans if they were cheaper.

6. If I had not missed the bus I _____ (not be late) for work.
7. If he had not come earlier, he _____ (be offered) to wait.
8. Unless you tell him the truth he _____ (suspect) you! You'd better do it.
9. Now he has to solve these problems himself! He _____ (be left alone) with them unless he had argued with all his friends.
10. If you _____ (buy) everything earlier, we would not have to lose time now!
11. If you _____ (tell) him about my present, I'll kill you!
12. She _____ (finish) this work yesterday if she had had the time for it.
13. He _____ (have to) go fishing if he had had money.
14. If you don't order a taxi for him now, you _____ (have to) meet him tomorrow at 5 a.m. yourself!
15. I would be working in Italy now if I _____ (speak) Italian. It's a pity I don't speak Italian! [2]

РАЗДЕЛ 2. ЛЕКСИЧЕСКАЯ ЧАСТЬ

Unit 1. About Myself

My name is Ann. I am from Russia. I was born in Siberia, in a small town. My birthday is on the 10th of May. I still live with my parents. Our family is not very big. We are four: father, mother, my elder brother and me. A few words about myself: I am a first-year university student of the Siberian State University of Geosystems and Technologies. I am ambitious and energetic and have a good sense of humour. I am studying to become a specialist in Information Systems, because it is important for my future professional career. I was good at mathematics and natural sciences at school, and this helps me greatly now. I'd like to be a qualified engineer and specialize in *Land Management*¹ and Cadastre. Besides, I am taking English classes because it's important to be able to use English in my future work or travelling abroad.

My brother works with computers. He is well educated and has a university degree in IT. He is a professional, successful software developer. He is lucky to have a good job, because he *got in touch with*² a big *engineering company*³. They were impressed by his project and offered him a position of a head of the information systems department. He is a very busy young man but tries to find some time for sports. He loves to keep fit, so the main sports he participates in is playing tennis, swimming and hiking.

Our father is a pensioner. He is very active. His main interests are gardening and fishing. Mom works in the library, in the Local Studies Section. The library keeps a lot of valuable information about interesting local people. The father helps her a lot. Our parents are very sociable people and spend a lot of time arranging various events: parties, concerts and meetings.

I live in a big city in a hostel because I am a student. In my spare time, at the week-ends I earn some extra money teaching computer studies at a private computer school. I enjoy working with pupils. When I feel tired I prefer to relax listening to a beautiful light music or watching interesting TV programs about

animals and wild life. I am a gregarious person. I like going out and meet with my friends. I need to talk about things that attract me like world news, art, interesting people and so on. It's exhilarating to live in a big city where there's so much happening: good theatres, concerts, discos, exhibitions. Living in a city has some advantages. There are a lot of interesting things to do and places to see. [2].

Notes.

- | | |
|------------------------|-----------------------|
| 1. Land management | землеустройство |
| 2. get in touch with | связаться с кем-либо |
| 3. engineering company | строительная компания |

Ex. 1. Составьте предложения с данными выражениями:

professional career; I am good at.... ; I'd like to be a qualified..... and specialize in.... ; to keep fit; I earn some extra money; I prefer to relax; a qualified specialist in...; I am very ambitious: it's important to be able to... .

Ex. 2. Продолжите предложения.

1. I was born... . 2. I am studying to become... . 3. I am good at... . 4. I'd like to be... . 5. He has a university degree in... . 6. I am going to get in touch with... . 7. The main sports I participate in is... . 8. There's a lot of interesting and valuable information about 9. In my spare time I enjoy... . 10. He earns some extra money 11. When I feel tired I... . 12. It's exhilarating to... . 13. My favourite... . 14. She is a gregarious person and likes... .

Ex. 3. Дайте ответы на вопросы.

1. What country are you from?
2. Where is your city/town situated?
3. How many people are there in your family?
4. Where do you study/work?
5. What would you like to be in future?
6. In what field are you going to specialize?
7. What do your parents do?
8. What do you like to do?

9. What sort of person are you?

Ex. 4 Составьте тему про Вас и вашу семью (35–40 предложений).

UNIT 2. Our University

The Siberian State University of Geosystems and Technologies, the former name NIIGAiC (Novosibirsk Institute of Engineers of Geodesy, Aerial Photographic Surveying and Cartography), was established in 1932 in Omsk but a year later it was moved to Novosibirsk. Today, the university trains specialists in surveying (geomatics), mining engineering, cartography, remote-sensing, geoecology, cadastre, land management, geoinformation systems and technologies, optics and optical technologies, safety engineering and some other specializations in economics and management.

University Structure. *The Governing Body*¹ of the university approving *the Charter (устав)* is the Conference of *scientific and teaching staff*² and representatives of employees and students. The consultative body is the University Council with the rector at the head. The scientific and teaching staff are readers, senior lecturers, associate professors, professors with a *Ph. D. degree*³. At present at the University there are the following Institutes:

– Institute of Geodesy and Management; Institute of Cadastre and Earth Resources (Environmental) Management; Institute of Optics and Information Security Technologies.

There are approximately (about) 7000 students at the university at all departments (day, evening and correspondence). *They are served by nearly*⁴ 300 members of the full-time academic staff and some part-time and visiting lecturers. Practically all the lecturers are professors and associate professors.

Entry requirements. Applicants (entrants) become students of the university on the basis of school test results mainly in Mathematics and Russian, but some specialties require test results in Information Science (Informatics), in Physics and Geography. The students are trained full-time, part-time, by correspondence and also according to individual plans (shortened course).

Tuition (обучение). The minimum training period at the university is four years. A four-year program leads to a degree of *Bachelor of Science*⁵, and a six-year program leads to a *Master's degree*⁶. The first year is a generic (foundation)

course to all students. The course consists of lectures, practical classes, seminars and laboratory works. The material of lectures and interesting topics *are backed up*⁷ and discussed at seminars. In accordance with the curriculum first-year students study Mathematics, Physics, History of Russia, a foreign language and some other subjects.

Beginning with the second year, students are taught special subjects which are necessary for a chosen specialty (*profession*). From the third year the course becomes more specialized. *The Special Studies course*⁸ involves the study in depth of the disciplines in a particular area and provides theoretical as well as applied knowledge.

There are two terms in each academic year. *Besides the periodic assessment*⁹ students pass tests and exams at the end of each term. Senior students have to prepare papers, course works and project reports for discussion purposes with their supervisors. The whole training course is followed by state exams in some subjects and a final project.

Industrial Training. Industrial training is integral to the course and involves close collaboration between the University and enterprises. Senior students (*third-year and fourth-year students*) have vocational (*industrial*) training during several months at some enterprises, research institutions, laboratories and expeditions in order to get some practical experience in a chosen career. Training programs vary between organizations and students, but in general are intended to give experience in major business functions, including production, marketing, personnel and industrial relations, computing and business systems. The students of the Institute of Optics and Optical Technologies usually have their practice at instrument-making plants and big enterprises. The students of the Institutes of Geodesy and Management have their practical training *in summer-surveying camps*¹⁰, expeditions, and at various enterprises. *If properly handled, the practice*¹¹ has some advantages: – the students develop confidence (уверенность) in themselves; – the instructor can find and correct their weaknesses, develop their strong points, stimulate and motivate them. Computing is an essential part of *most of the major courses run by the university*¹², although emphasis throughout is on the application of computers rather than on the technical aspects of computer science. The availability of an

extensive amount of equipment in the university laboratories enables students to spend sufficient time for thorough training at the instruments.

Post-graduate course. Acquiring skill (experience) in research is very important for successful (advanced, prospective) graduates and those specialists who have the experience in a professional career and who are going to devote themselves to science, and concentrate on the research project. The university offers opportunities to undertake research leading to the degrees of Master of Philosophy (M. Ph) or Doctor of Philosophy (Ph. D). A research student is required to complete a period of full-time study lasting for two years for M. Ph or three years for Ph. D. During this period, a post-graduate student (science student, research student) normally attends courses in research methods and is required at the end of the period to submit a thesis embodying the results of his or her research work.

Research students have a chance to extend and deepen their knowledge in *good solid grounding in the fundamentals*¹³. When people study one subject in great detail (often to find information), we say e.g. they are conducting/doing/carrying out research **into...**, **on** economics. A candidate for the degree is expected to complete successfully a program of work which results in a significant contribution to knowledge [2].

Notes.

1. The Governing Body – орган управления.
2. ...scientific and teaching staff – профессорско-преподавательский состав.
3. Ph. D. (Doctor of Philosophy) degree – степень доктора философии (наук).
4. they are served by nearly... – (зд.) их обучают (обслуживают) почти... .
5. Bachelor of Science (Bachelor's degree) – первая степень диплома о высшем образовании (степень бакалавра).
6. M. Sc. (Master of Science) degree – степень магистра наук (вторая ученая степень).
7. the material of lectures is backed up... – материалы лекций закрепляются... .
8. the Special Studies course... – курс более узкой специализации.

9. Besides periodic assessment... – кроме промежуточной (периодической) аттестации.

10. ...the practice in summer-surveying camp – практика на учебном геодезическом полигоне.

11. If properly handled, the practice... – если организована должным образом, практика... .

12. ...most of the major courses run by the university – большинство основных курсов (дисциплин), предусмотренных учебным планом университета.

13. Good solid grounding in the fundamentals – фундаментальная подготовка по основным (профилирующим) предметам.

Exercises.

Ex. 1. Произнесите правильно.

Specialty, speciality, specialization, physicist; thesis, theory, thorough, thoroughly, through, throughout, high, height, slight; science, research, surveying, surface, purpose, subject, project, job, major, advantage, geodesy, area, although, experience, due, require, acquire, supervisor, enterprise, curriculum, approximately, particular, lecturer, personnel, whole, senior.

Ex. 2. Переведите на русский.

University council, university students, university lecturers, study duration, earth-resources exploration, associate professor, correspondence student, foundation course, discussion groups (*classes*), course work, project report, state exams, instrument-making plants, summer-surveying camps, computer class, computer science, computer centre, undergraduate research, research project, research institution, post-graduate course, post-graduate research, post-graduate student, a specialist collection of books, health worries, school test results, to study full-time, land management, full-time academic staff, full-time student, environmental management, personnel and industrial relations.

Ex. 3. Соотнесите пары синонимов.

A. Thorough, all over, subject, opportunity, diploma, surveying, research, undergraduate, teach, associate professor, purpose, involve, area, test, according

to, college, lesson, important, program, assistance, applicant, approximately, research student.

B. Chance, geodesy, senior lecturer, class, in accordance with, investigation, field, discipline, degree, essential, assessment, aid, curriculum, student, train, aim, deep, throughout, technician-level institution, include, entrant, about, a post-graduate.

Ex. 4. Переведите на русский:

1. The university trains specialists in 2. There are approximately 7 000 students. 3. Representatives of employees and students. 4. The students are trained full-time and part-time. 5. ... is backed up at seminars. 6. Special subjects in a particular field. 7. In accordance with the curriculum. 8. The special studies course provides 9. Besides the periodic assessment. 10. The whole training course is followed by a final project. 11. Acquiring skill in research 12. Thorough training at the instruments. 13. Training programs are intended to give experience in 14. Various sports competitions, conferences, seminars. 15. The availability of an extensive amount of equipment in university labs. 16. A good solid grounding in the fundamentals. 17. Courses in research methods. 18. The students have to undergo practical training. 19. Industrial training involves

Ex. 5. Найдите английские эквиваленты в тексте.

1. В соответствии с учебным планом. 2. После двух лет углубленной специализации в выбранном направлении. 3. Курс более узкой специализации. 4. Глубокое изучение дисциплин в выбранной профессии. 5. Доклады, курсовые работы. 6. Отчеты по индивидуальным проектам. 7. Углублять и расширять знания. 8. Сотрудничество университета с разными предприятиями. 9. По результатам тестов главным образом по 10. Практика на геодезическом полигоне.

Ex. 6. Составьте и расскажите тему «Мой университет».

UNIT 3. The Russian Federation

Russia, officially known as the Russian Federation, covers one-seventh part of dry land. It is the largest country in the world located in Eastern Europe and Northern Asia. Its expansive¹ territory of over 17 million square kilometres stretches across 11 time zones and encompasses² a wide array of natural landscapes. There are moors and mountains, beaches and cliffs, tundra in Siberia, as well as forested taiga and the steppes of the European part of the country.

Landscape. Russia is located on the plains. The Great Russian (East European) Plain, the West Siberian Lowland and the Central Siberian Plateau are among the largest plains of the world. The main mountain chains of the country are the Urals, which form the natural boundary between Europe and Asia; the Caucasus, that are the highest mountain range in Europe; and the Altai known for their stunning³ natural beauty and wildlife.

The country is rich in waterways. There are over 2 million long rivers and deep lakes. The longest river in Europe is the Volga (3531 km), the others are the Ob, the Yenisei, the Lena, and the Amur. The world's deepest and oldest lake is Baikal. It is the unique⁴ natural feature of Russia containing about 20% of the world's unfrozen freshwater. Lake Baikal is approximately⁵ 25 million years old and is known for its exceptional⁶ biological variety with many species⁷ found nowhere else on the Earth. The only freshwater seal species, the nerpa, dwells here.

History and culture. Russia has a rich and complex history that spans over a millennium. It was once the centre of the powerful Russian Empire, and later the Soviet Union, and has been playing a major role in shaping global history, politics, and culture.

The culture of Russia is diverse, influenced by its distinctive history, geography, and different ethnic groups that populate the country. With the population of approximately 150 million people, Russia is one of the most populous nations globally. The majority of its citizens are ethnic Russians, but the country is also home for a multitude of other ethnic groups, including Tatars, Ukrainians, Bashkirs, Chuvash, Chechens, and many others. Russian literature, music and art made significant contributions to world culture with famous authors like Leo Tolstoy and Fyodor Dostoevsky, prominent⁸ composers

like Tchaikovsky and Rachmaninoff, and artists like Shishkin, Kandinsky and Marc Chagall, leaving a lasting legacy⁹.

Moscow, the capital and largest city of Russia, is an iconic metropolis known for its historic architecture, including the Kremlin and the Red Square. St. Petersburg, a city founded by Peter the Great, is renowned for its grand palaces, museums, and cultural heritage¹⁰.

Political structure and economy. The Russian economy is one of the largest in the world, heavily reliant¹¹ on its vast natural resources. The country is a major producer of oil, natural gas, zinc, lead, aluminium, coal and minerals, which play a crucial¹² role in its economy. Apart from these, the aerospace industry, defence sector and nuclear energy are significant¹³ contributors to the national economy.

The Russian Federation is a federal semi-presidential republic. The President is the head of the state, the Prime Minister is the head of the Government. The federal structure of the country is represented by 89 federal subjects, which consist of republics, krais, oblasts, federal cities, and an autonomous oblast.

In recent years Russia has faced some challenges such as political tension with other countries and economic sanctions. The joining of the Crimea in 2014 and the conflict in the Ukraine resulted in strained relations with the West and diplomatic disputes.

Despite¹⁴ these challenges Russia remains a key player in global affairs¹⁵, an enigmatic and influential nation with an enduring impact¹⁶ on world politics, culture and economics [2].

Notes.

1. Expansive – обширный

2. Encompass – охватывать

3. Stunning – захватывающий

4. Unique – уникальный

5. Approximately – приблизительно

6. Exceptional – исключительный

7. Species – вид (животных)

8. Prominent – знаменитый

9. Legacy – наследие

10. Heritage – наследие

11. Heavily reliant – (зд.) сильно зависит

12. Crucial – ключевой, решающий

13. Significant – значительный

14. Despite – несмотря на

15. Affairs – дела

16. Enduring impact – устойчивое влияние

Ex. 1. Найдите английский эквивалент в тексте.

Обширный, охватывать, уникальный, особенность, обитать, отличающийся (от чего-л.), влиять, наследие, зависящий, ключевой, напряженность, натянутые отношения, дипломатические разногласия, международные вопросы, устойчивое влияние.

Ex. 2. Найдите синонимы.

Crucial, apart from, variety, heritage, unique, famous, important, impact, approximately, essential, about, diverse, legacy, significant, various, major, prominent, main, except for, array, influence, exceptional.

Ex. 3. Дайте определения следующим понятиям. Используйте словарь, если необходимо.

Wide array, natural boundary, unique feature, exceptional variety, significant contribution, cultural heritage, natural resources, challenge, political tension, strained relations, global affairs.

Ex. 4. Составьте предложение с каждым выражением из Ex. 3.

e.g. In the broadest sense, the term “biotechnology” can encompass a wide array of procedures used to modify organisms according to human needs.

Ex. 5. Ответьте на вопросы.

1. What is the official name of Russia?
2. How many time zones does Russia encompass?
3. What are the biggest plains in Russia?
4. What mountain chain forms the natural boundary between Europe and Asia?
5. Which is the highest mountain range in Europe?
6. What natural resources are there in Russia?
7. What is the political structure of the Russian Federation?

Ex. 6. Подготовьте презентацию и доклад по одной из следующих тем.

1. Forests of Russia.
2. Mountains of Russia.

3. Rivers of Russia.
4. Lakes of Russia.
5. The Lake Baikal.
6. Climate of Russia.
7. Russian mineral resources.
8. The population of Russia.
9. The political system of the Russian Federation.
10. 3 main cities of Russia.

UNIT 4. Canada

Canada was discovered in the first half of the 15-th century by the British and French.

The local people of Canada were the Indians, and this name was given to them by the Europeans, when they first discovered the country, thinking that it extended to the East Indies, and they were the same people.

The *indigenous*¹ people lived on fishing in various ways, that allowed them to hunt and survive. Some of them worked in agriculture, others were fishermen. This was *due to*² the area, which they inhabited, and the extent of the *availability*³ of life in it.

The arrival of the Europeans to the local population caused a great change in the way they lived and the tools they used. Missionaries and colonial soldiers arrived in the country, which *led*⁴ to the *dissemination*⁵ of different cultures and customs of the indigenous peoples.

Among the things that affected the indigenous peoples in a negative way were the *diseases*⁶ that the Europeans brought to the country. The locals had been unfamiliar with *influenza*⁷, *measles*⁸ and *smallpox*⁹ and lacked immunity against them, which became the reason for death of many of them.

Events developed in Canada from 1608 to 1663, as the country moved from French control to British hands and from English domination to independence.

There were many wars between the French and the British, called the Seven Years' War, until France *ceded*¹⁰ most part of Canada to Britain. Only two provinces are inhabited by French. In 1759 Canada became part of the British Empire. In 1931 independence was granted from Britain.

Today Canada is an independent federative state with a representative democratic and constitutional monarchy, consisting of 10 provinces and 3 territories. It is a member of the Commonwealth, headed by the King of Great Britain. The two official languages are English and French. Most Canadians speak English, but for some of them, especially the inhabitants of the provinces of Quebec and Ontario, the main language is French. Quebecers are so different from the rest of the Canadians that for many years they have been struggling for political independence.

Canada, the second largest country in the world, occupies a large part of the North American continent and belongs to *sparsely populated*¹¹ countries. The total area is about 10 million square kilometres. Huge spaces on its territory are almost deserted. The land-locked areas are covered almost all year round with snow and ice in the north of the country. Not so many people live at the west, in the Rocky Mountains. In the east, towns and villages are occasionally found, among the boundless wheat fields. Almost the *entire*¹² population of Canada lives in the southeast, along the border with the United States of America. As Canada extends for thousands of miles from the Arctic Ocean to the United States and from the Atlantic Ocean to the Pacific Ocean, all kinds of weather conditions and landscape can be found there.

Canada consists of eight large forests, the most famous of which are the vast northern forests. It contains a large number of lakes and a large stock of fresh water in the world. Canada is internationally famous for the Niagara Falls which consists of three other falls. Canada has the longest coastline in the world, with a length of about 243,000 km including mainland and off-shore islands. In addition, it is *surrounded*¹³ by three oceans: the Atlantic in the east, the Arctic in the north, and the Pacific Ocean in the west. Canada is also a geologically active country, with active earthquakes and volcanoes. Temperatures vary in Canada from one location to another, with coastal and inland provinces dominating a continental climate.

The capital of Canada is Ottawa, and it is the fourth largest Canadian city after Toronto – Calgary – Montreal. Interestingly, Canada has six time zones due to its geographical range.

The most *familiar*¹⁴ and well-known national emblem of Canada is the maple leaf which is also represented in the Canadian banner. The *beaver*¹⁵ and the Canadian horse are among the most famous and recognizable animals in Canada.

Canada is characterized by many dangerous animals such as bears, which *abound*¹⁶ in the summer season, and is famous for catching salmon fish in the migration and *spawning season*¹⁷.

Hockey is given a special place in Canadian life which is considered to be the national sport. It has a long history, dating back to the mid-19th century. *It is believed*¹⁸ to have been originated in Canada with the first organized game in Montreal in 1875. Since then, children all over the country grow up learning to skate and playing hockey, often beginning at a very young age. Overall, hockey for majority of Canadians is more than just a sport; it is a part of Canada's national identity and the way of life.

Canada has a highly-developed economic sector which ranks among the top 10 largest economies in the world. The country is rich in mineral resources, including oil, gas, minerals, *lumber*¹⁹, and water. Canada is a major exporter of these resources, particularly to the United States and other countries. The country also produces a wide range of goods, such as automobiles, machinery, aerospace products, as well as food products. Canada is also a global leader in sectors like information technology and telecommunications.

Notes.

- | | |
|---------------------------------------|---|
| 1. Indigenous – местный | 11. Sparsely populated – малонаселенный |
| 2. Due to – из-за | 12. Entire – весь, полный |
| 3. Availability – доступность | 13. Surround – окружать |
| 4. Lead (led, led) – вести, приводить | 14. Familiar – знакомый |
| 5. Dissemination – распространение | 15. Beaver – бобр |
| 6. Disease – болезнь | 16. Abound – изобилие |
| 7. Influenza – грипп, простуда | 17. Spawning season – сезон нереста |
| 8. Measles – корь | 18. It is believed – Считается... |
| 9. Smallpox – ветряная оспа | 19. Lumber – древесина |
| 10. Cede – уступать | |

Ex. 1. Найдите английские эквиваленты в тексте.

Позволять, простираться, выживать, степень, населять, обычаи, служить причиной, приводить к чему-л., народы, нехватка, землетрясение,

узнаваемый, брать начало, высокоразвитый, минеральные ресурсы, товары, машинное оборудование, технология.

Ex. 2. Найдите пары синонимов.

Due to, to permit, to affect, to cause, famous, to encompass, goods, to lead, citizen, area, huge, to extend, territory, to cede, to stretch, to surround, disease, to allow, because of, to surrender, to influence, sickness, inhabitant, well-known, vast, products.

Ex. 3. Дайте определение следующим выражениям. Используйте словарь, если необходимо.

To cause, indigenous people, dissemination of cultures, to be unfamiliar (with/to), to lack, independence, sparsely populated, a wide range of goods.

Ex. 4. Составьте предложение с каждым словом и выражением из упр. 4.

e.g. to cause – The fire caused £15,000 worth of damage.

Ex. 5. Подготовьте презентацию и доклад по одной из следующих тем.

1. Forests of Canada.
2. Mountains of Canada.
3. Rivers of Canada.
4. Lakes of Canada.
5. French Canada: Quebec and Ontario.
6. Climate of Canada.
7. Canadian mineral resources.
8. The population of Canada.
9. The political system of Canada.
10. 3 main cities of Canada.

UNIT 5. IT Specialty and career

IT specialty refers to a specific area of expertise within the broader field of information technology (IT). IT professionals with specialized *knowledge*¹

and skills in a particular domain are highly sought after in today's job market. Some of the most common IT specialties include.

- Cloud Computing: *Expertise*² in managing and deploying applications and data on cloud platforms such as AWS, Azure, and Google Cloud.

- Cybersecurity*³: *Specialization*⁴ in protecting computer systems and networks from unauthorized access, cyber threats, and data breaches.

- Data Analytics: Expertise in collecting, cleaning, and analyzing data to extract insights and make informed decisions.

- Database Administration: Specialization in managing and maintaining databases, ensuring data integrity, performance, and security.

- DevOps: Expertise in combining development (Dev) and operations (Ops) processes to improve software delivery and infrastructure management.

- IT Infrastructure: Specialization in designing, implementing, and managing IT infrastructure, including servers, networks, and storage systems.

- Network Engineering: Expertise in designing, installing, and managing computer networks, ensuring *connectivity*⁵, performance, and *reliability*⁶.

- Software Development: Specialization in designing, developing, and testing software applications, using various programming languages and technologies.

- Web Development: Expertise in creating and maintaining websites and web applications, using HTML, CSS, JavaScript, and other web technologies.

IT professionals with a specialty are often responsible for providing expert advice, troubleshooting complex issues, and implementing innovative solutions within their specific domain. They work in various industries, including technology, finance, *healthcare*⁷, education, and government.

Pursuing an IT specialty can enhance career prospects, increase earning potential, and provide opportunities for professional growth and leadership. Individuals can acquire specialized knowledge and skills through certifications, training programs, and hands-on experience in their chosen field.

Career in IT

The IT industry is one of the fastest-growing industries in the world, and it's expected to continue to grow for years to come. This means that there are plenty of *opportunities*⁸ for people who are interested in a career in IT.

There are a lot of different types of jobs available in IT, including:

- software engineers design, develop, and maintain software applications;
- computer programmers deal with writing program codes that tell computers what to do;
- systems analysts study how businesses work and design computer systems to meet their needs;
- database administrators manage and maintain databases;
- network administrators manage and maintain computer networks;
- web developers design and develop websites;
- it support specialists provide technical support to users.

So, first of all you should choose what you would like to do and get the necessary skills and qualification. Your salary will depend on many important factors including your education, certification, additional skills, *experience*⁹ etc.

The median annual salary for IT workers in European countries and in the USA is about \$90 000 current as of 2024, which is higher than the median annual salary for all other *occupations*¹⁰. IT workers also have a high level of *job satisfaction*¹¹, and they are in high demand.

If you are interested in a career in IT, there are many different ways to get started. You can earn a degree in computer science or a related field, or you can take online courses or attend bootcamps. You can also gain experience by working on personal projects or volunteering your skills.

No matter how you get started, a career in IT can be a rewarding and fulfilling experience.

Notes.

- | | |
|--------------------------------------|---|
| 1. Knowledge – знания | 7. Healthcare – здравоохранение |
| 2. Expertise – экспертиза | 8. Opportunity – возможность |
| 3. Cybersecurity – кибербезопасность | 9. Experience – опыт |
| 4. Specialization – специализация | 10. Occupation – занятие |
| 5. Connectivity – совместимость | 11. Job satisfaction – удовлетворение от работы |
| 6. Reliability – надежность | |

Ex. 1. Найдите английские эквиваленты в тексте.

Облачные платформы, несанкционированный доступ, обслуживание баз данных, инновационные решения, доставка программного обеспечения,

соответствовать потребностям заказчика, среднегодовая зарплата, пользоваться высоким спросом, техническая поддержка пользователей, администраторы баз данных, зависеть от многих факторов, ваша зарплата зависит от.

Ех. 2. Найдите пары синонимов.

Expert, supply, service, issue, increase, expect, recommendation, client, complementary, average, gain, significant, develop, include, safety, attend, maintenance, additional, growth, professional, problem, median, earn, deliver, design, customer, wait, advice, security, involve, visit, essential.

Ех. 3. Дайте определение следующим выражениям. Используйте словарь, если необходимо.

Cloud computing, cybersecurity, software delivery, job satisfaction, connectivity, reliability, healthcare, innovative solution, high demand, technical support.

Ех. 4. Составьте предложение с каждым словом и выражением из Ех. 3.

Ех. 5. Подготовьте презентацию и доклад по теме «Моя будущая карьера в ИТ» (35–40 предложений).

РАЗДЕЛ 3. ДОПОЛНИТЕЛЬНЫЕ ТЕКСТЫ ДЛЯ ЧТЕНИЯ

3.1. Computing devices: from ancient times to nowadays

Part 1. Mechanical devices

The first counting device was used by the primitive people. They used sticks, stones and bones as counting tools. As human mind and technology improved with time more computing devices were developed. Some of the popular computing devices starting with the first to recent ones are described below.

Abacus

The history of computer begins with the birth of abacus which is believed to be the first computer. It is said that the Chinese invented Abacus around 4,000 years ago.

It was a wooden rack which has metal rods with beads mounted on them. The beads were moved by the abacus operator according to some rules to perform arithmetic calculations. Abacus is still used in some countries like China, Russia and Japan.

Napier's Bones

It was a manually-operated calculating device which was invented by John Napier (1550–1617) of Merchiston. In this calculating tool, he used 9 different ivory strips or bones marked with numbers to multiply and divide. So, the tool became known as Napier's Bones. It was also the first machine to use the decimal point.

Pascaline

Pascaline is also known as Arithmetic Machine or Adding Machine. It was invented between 1642 and 1644 by a French mathematician-philosopher Blaise Pascal. It is believed that it was the first mechanical and automatic calculator.

Pascal invented this machine to help his father, a tax accountant. It could only perform addition and subtraction. It was a wooden box with a series of gears and wheels. When a wheel is rotated one revolution, it rotates the neighboring wheel. A series of windows is given on the top of the wheels to read the totals.

Stepped Reckoner or Leibnitz wheel

It was developed by a German mathematician-philosopher Gottfried Wilhelm Leibnitz in 1673. He improved Pascal's invention to develop this machine. It was a digital mechanical calculator which was called the stepped reckoner as instead of gears it was made of fluted drums.

Difference Engine

In the early 1820s, it was designed by Charles Babbage who is known as "Father of Modern Computer". It was a mechanical computer which could perform simple calculations. It was a steam driven calculating machine designed to solve tables of numbers like logarithm tables.

Analytical Engine

This calculating machine was also developed by Charles Babbage in 1830. It was a mechanical computer that used punch-cards as input. It was capable of solving any mathematical problem and storing information as a permanent memory.

Tabulating Machine

It was invented in 1890, by Herman Hollerith, an American statistician. It was a mechanical tabulator based on punch cards. It could tabulate statistics and record or sort data or information. This machine was used in the 1890 U.S. Census. Hollerith also started the Hollerith's Tabulating Machine Company which later became International Business Machine (IBM) in 1924.

Part 2. Electronic devices

Differential Analyzer

It was the first electronic computer introduced in the United States in 1930. It was an analog device invented by Vannevar Bush. This machine has vacuum tubes to switch electrical signals to perform calculations. It could do 25 calculations in few minutes.

Mark I

The next major changes in the history of computer began in 1937 when Howard Aiken planned to develop a machine that could perform calculations involving large numbers. In 1944, Mark I computer was built as a partnership between IBM and Harvard. It was the first programmable digital computer.

Generations of Computers

A generation of computers refers to the specific improvements in computer technology with time. In 1946, electronic pathways called circuits were developed to perform the counting. It replaced the gears and other mechanical parts used for counting in previous computing machines.

In each new generation, the circuits became smaller and more advanced than the previous generation circuits. The miniaturization helped increase the speed, memory and power of computers. There are five generations of computers which are described below.

First Generation Computers

The first generation (1946–1959) computers were slow, huge and expensive. In these computers, vacuum tubes were used as the basic components of CPU and memory. These computers were mainly dependent on batch operating system and punch cards. Magnetic tape and paper tape were used as output and input devices in this generation.

Some of the popular first generation computers are:

ENIAC (Electronic Numerical Integrator and Computer)

EDVAC (Electronic Discrete Variable Automatic Computer)

UNIVACI (Universal Automatic Computer)

IBM-701

IBM-650

Second Generation Computers

With the development of electronic industry, especially after the invention of semiconductors computers started getting smaller in size. The second generation (1959–1965) was the era of the transistor computers. These computers used transistors which were cheap, compact and consuming less power; it made transistor computers faster than the first generation computers.

In this generation, magnetic cores were used as the primary memory and magnetic disc and tapes were used as the secondary storage. Assembly language and programming languages like COBOL and FORTRAN, and Batch processing and multiprogramming operating systems were used in these computers.

Some of the popular second generation computers are:

IBM 1620

IBM 7094

CDC 1604

CDC 3600

UNIVAC 1108

Third Generation Computers

The third generation computers used integrated circuits (ICs) instead of transistors. A single IC can pack huge number of transistors which increased the power of a computer and reduced the cost. The computers also became more reliable, efficient and smaller in size. These generation computers used remote processing, time-sharing, multiprogramming as operating system. Also, the high-level programming languages like FORTRAN-II TO IV, COBOL, PASCAL PL/1, ALGOL-68 were used in this generation.

Some of the popular third generation computers are:

IBM-360 series

Honeywell-6000 series

PDP(Personal Data Processor)

IBM-370/168

TDC-316

Fourth Generation Computers

The fourth generation (1971–1980) computers used very large scale integrated (VLSI) circuits; a chip containing millions of transistors and other circuit elements. These chips made this generation computers more compact, powerful, fast and affordable. These generation computers used real time, time sharing and distributed operating system. The programming languages like C, C++, DBASE were also used in this generation.

Some of the popular fourth generation computers are:

DEC 10, STAR 1000, PDP 11, CRAY-1(Super Computer), CRAY-X-MP(Super Computer)

Fifth Generation Computers

In the fifth generation (1980-till date) computers, the VLSI technology was replaced with ULSI (Ultra Large Scale Integration). It made possible the production of microprocessor chips with ten million electronic components. This generation computers used parallel processing hardware and AI (Artificial Intelligence) software. The programming languages used in this generation were C, C++, Java, Net, etc.

Some of the popular fifth generation computers are:
Desktop, Laptop, NoteBook, UltraBook, ChromeBook [3].

3.2. Software development: from human computers to AI

Part 1

The first-ever programming instructions were written for Charles Babbage's Analytical engine. In 1840, Babbage travelled to Turin (Italy), where he lectured about his machine. Ada Lovelace (George Byron's daughter), his close friend and only like-minded person translated these lectures into English, supplementing them with comments that exceed the original text in volume. In the comments, Ada made a description of the machine and programming instructions for it. These were the first programs in the world. That is why Ada Lovelace is rightly called the first programmer. However Babbage and Lovelace did not manage to build the Analytical engine.

The first modern theory of software was proposed by Alan Turing in his 1935 essay *Computable numbers with an application to the Entscheidungsproblem (decision problem)*.

This eventually led to the creation of the twin academic fields of computer science and software engineering, which both study software and its creation. Computer science is more theoretical (Turing's essay is an example of computer science), whereas software engineering is focused on more practical concerns.

However, prior to 1946, software as we now understand it – programs stored in the memory of stored-program digital computers – did not yet exist. The very

first electronic computing devices were instead rewired in order to "reprogram" them. The ENIAC, one of the first electronic computers, was programmed largely by women who had been previously working as human computers. Kathleen Booth developed Assembly Language in 1950 to make it easier to program the computers she worked on at Birkbeck College.

Grace Hopper and UNIVAC

Grace Hopper worked as one of the first programmers of the Harvard Mark I. She later created a 500-page manual for the computer. Hopper developed the first compiler and brought her idea from working on the Mark computers to working on UNIVAC in the 1950s.

In his manuscript "A Mathematical Theory of Communication" in 1948, Claude Shannon provided an outline for how binary logic could be implemented to program a computer. Subsequently, the first computer programmers used binary code to instruct computers to perform various tasks. Nevertheless, the process was very arduous. Computer programmers had to provide long strings of binary code to tell the computer what kind of data it should store.

The very first time a stored-program computer held a piece of software in electronic memory and executed it successfully, was 11 am 21 June 1948, at the University of Manchester, on the Manchester Baby computer. It was written by Tom Kilburn, and calculated the highest factor of the integer $2^{18} = 262,144$. This is considered to be the "birth of software".

In the 1950s the first programming languages started to appear. [FORTRAN](#) was developed by a team led by [John Backus](#) at [IBM](#). The first compiler was released in 1957. The language proved so popular for scientific and technical computing that by 1963 all major manufacturers had implemented or announced FORTRAN for their computers.

In 1959 COBOL was first conceived by Mary K. Hawes who convened a meeting (which included [Grace Hopper](#)) to discuss how to create a computer language to be shared between businesses. Hopper's innovation with COBOL made her programming self-documenting. Betty Holberton helped edit the language which was submitted to the Government Printing Office in 1960. Also in 1960s FORMAC was developed by Jean E. Sammet.

Her book, *Programming Languages: History and Fundamentals* (1969), became an influential text.

In general for the period from 1951 to 1967 there was an outbreak in design and development of programming languages including high-level languages [4].

Part 2

Since 1965 there occurred a so-called software crisis as software struggled to keep up with advances in hardware. Some of the problems included software that ran over budget and past deadlines, needed extensive de-bugging, failed to meet the needs of users, required large amounts of maintenance (if it was even possible to maintain), or was simply never completed. In 1970s The Software Crisis continued as software engineers seek to right the ship. It was a time when software engineering began its rise as new ideas, languages, and hardware were introduced.

1970s saw a big number of changes and developments in the computer world. Pascal, a programming language that used structured programming and data structuring, was introduced. It was designed by Nicklaus Wirth.

In 1972 – Dennis MacAlistair Ritchie began the development of the C programming language. It would grow to become one of the most popular programming languages. This was also the time when the Unix operating system, developed by Ritchie and Ken Thompson, made its debut. Ritchie, who died in 2011, is recognized as one of the most important people in software technology, and his work can be found in almost every software created in the modern age.

1975 – The first PCs began to appear. Many of these PCs were designed for business and not the home.

The 1980s continued to show great changes as the Software Crisis began to wind down. New languages and tools help began the journey toward better engineering and object-oriented programming. In 1980 Jean Ichbiah designed the Ada programming language. The first CASE tools began to appear on the market. Computer-Aided Software Engineering was designed to improve the quality of the system while also reducing cost and development time.

In 1985 – The C++ Programming Language was released, which has functional, generic, object-oriented and procedural features. Since its

introduction, the language has been continually updated and is the fourth most popular language in use. Dutch computer scientist Bjane Strousop conceived and developed the language.

This decade was a boom for programming languages, with some of the most popular ones used today being introduced. The 1990s introduced a number of other big changes to the software engineering industry: object-oriented programming began to grow in popularity, the Internet made its debut, and a new approach to development was introduced.

1990 – Tim Berners-Lee developed WorldWideWeb, the first web browser. He also created HTTP, HTML, and the first web pages, which described what he created. Since that time Internet Era began. It turned the whole world into one global digital society capable of instant communication despite the physical distances.

High-level languages continued to appear. In 1991 the Python programming language made its debut, which would eventually become one of the most popular programming languages because of its large standard library and liberal use of white space.

In 1995 James Gosling developed the Java programming language. It grew to be the most popular language in use, popular for being “*Write Once, Run Anywhere.*”

The mid of 90s was also the time when high schools and universities started to introduce bachelor’s and master’s degree programs in software engineering. While providing continuous improvements to languages and methods, the focus shifted to address the need for software engineers with a new style of learning made to enhance traditional software engineering education.

The beginning of 2000s saw the rise and fast growing of mobile device industry. Mobile phones quickly became smart phones capable of replacing PCs. Thus there started the new era in software development: mobile apps, social media application, navigation and many others.

The newest time from 2010 till now and in the future is featured by cloud-based storage and computing, AI and machine learning integrated into software engineering [5].

ЗАКЛЮЧЕНИЕ

Данное пособие составлено для обучающихся 1-го курса по направлению 09.03.02 Информационные системы и технологии и предполагает наличие базовых знаний, умений и навыков в иностранном языке, полученных учащимися в средней общеобразовательной школе.

Материал, представленный в грамматической и лексической частях данного пособия, позволяет обучающимся достичь владения иностранным языком на уровне B2+ (Upper-intermediate), что соответствует свободному владению иностранным языком при общении с носителем. Часть, содержащая тексты для чтения, знакомит обучающихся с базовой терминологией профессиональной сферы информационных технологий, основными исторически значимыми событиями компьютерной индустрии и программного обеспечения.

Таким образом, при успешном освоении материала данного пособия обучающийся не только овладевает иностранным языком как средством общения на уровне носителя, но и существенно повышает эрудицию для своей профессиональной деятельности и может в дальнейшем строить карьеру международного специалиста.

БИБЛИОГРАФИЧЕСКИЙ СПИСОК

1. Raymond Murphy Essential Grammar in use [Электронный ресурс] – URL: <https://dn790003.ca.archive.org/0/items/EssentialGrammarInUse4thEditionByR.Murphy/Essential%20Grammar%20in%20Use%204th%20Edition%20by%20R.%20Murphy.pdf>.
2. Никулина Л. М. Иностранный язык : метод. указания по изучению курса – Новосибирск : СГУГиТ, 2019. – 78 с.
3. History of computer [Электронный ресурс]. – 2024. – URL: <https://www.javatpoint.com/history-of-computer>.
4. The history of coding and software engineering [Электронный ресурс]. – 2024. – URL: <https://www.galvanize.com/blog/the-history-of-coding-and-software-engineering/>.
5. Evolution of Software Development History, Phases and Future Trends [Электронный ресурс]. – 2024. – URL: <https://www.geeksforgeeks.org/evolution-of-software-development-history-phases-and-future-trends/>.

Учебное издание

Перунова Наталья Борисовна
Романов Дмитрий Валерьевич
Чернышева Ольга Владимировна

ИНОСТРАННЫЙ ЯЗЫК

Редактирование и компьютерная верстка
Ю. С. Мерзликиной

Изд. лиц. ЛР № 020461 от 04.03.1997.

Подписано в печать 16.09.2024. Формат 60 × 84 1/16.

Усл. печ. л. 2,61. Тираж 230 экз. Заказ 113.

Гигиеническое заключение

№ 54.НК.05.953.П.000147.12.02. от 10.12.2002.

Редакционно-издательский отдел СГУГиТ

630108, Новосибирск, ул. Плахотного, 10.

Отпечатано в картопечатной лаборатории СГУГиТ

630108, Новосибирск, ул. Плахотного, 8.