

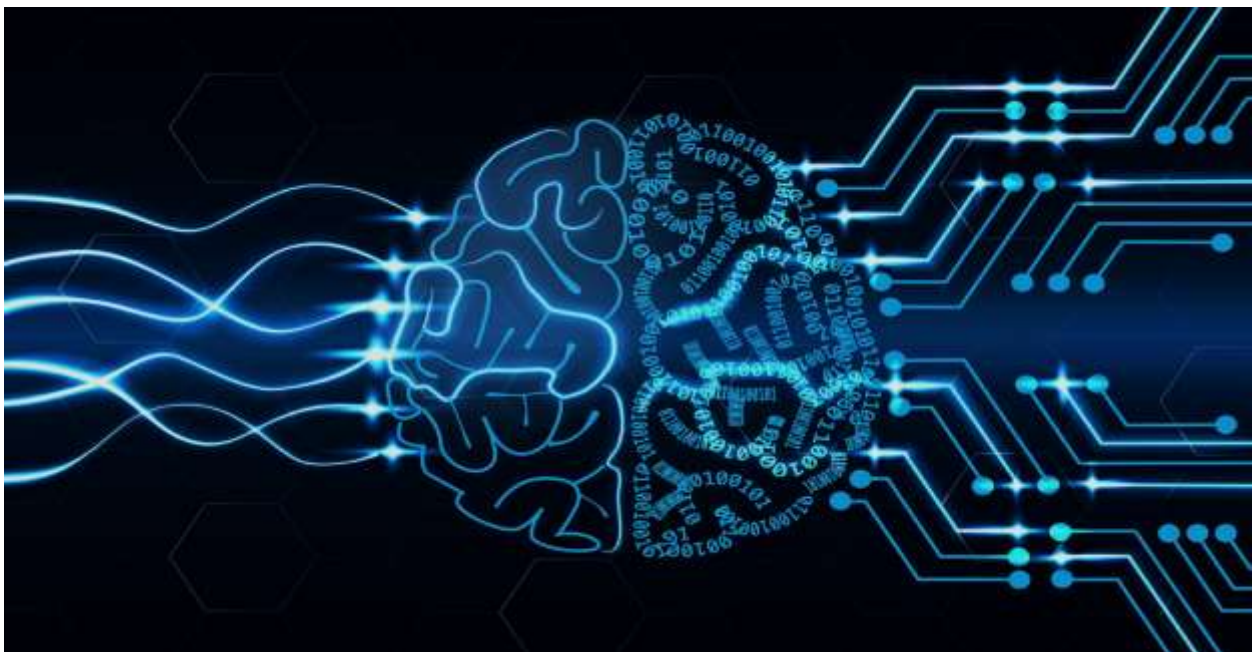
**MINISTRY OF EDUCATION AND SCIENCE OF REPUBLIC KAZAKHSTAN**

**ALMATY TECHNOLOGICAL UNIVERSITY**

**Bazarova D.A**

**PROFESSIONAL ORIENTED ENGLISH**

**Textbook for university students  
«5B070400 - Computing systems and software»**



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Professional oriented English text book is recommended for students of «5B070400 - Computing systems and software». All higher education institutions, as well as undergraduates, graduate students, young teachers, college students, beginners learn the subject in English. It contains material for reading, listening, speaking and writing. Active vocabulary and grammar is given according to the topics.

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## АЛҒЫ СӨЗ

Оқу-әдістемелік құралдың мақсаты – студенттердің кәсіби дайындығын негізге ала отырып, олардың лингвомәдени және қатысымдық құзіреттілігін қалыптастыру, болашақ мамандықтарына байланысты терминдерді меңгеріп, сөздік қорын молайту, аударма тілінің ережелеріне сай сөздіктерді қолдана отырып, мәтіндерді ағылшын тілінен ана тіліне аудару дағдысын дамыту.

Оқу-әдістемелік құрал 15 тақырыптан құралған. Әрбір сабақта мәтін, үш тілдегі арнайы лексикалық сөздік, мәтін бойынша лексикалық-грамматикалық жаттығу және тест берілген. Оқу-әдістемелік құрал Білім және ғылым министрлігі бекіткен типтік бағдарламаға негізделіп жасалды.

Үш тілдегі сөздік арнайы терминологияның аудармасын қамтиды. Оқулықтардың тақырыптық диапазоны осы мамандықтарға сәйкес келеді және студенттерге инжиниринг саласында кәсіби ағылшын тілін тереңдетуге мүмкіндік береді.

Ұсынылған оқу-әдістемелік құрал «5B070400 - Есептік техника және бағдарламамен қамтамасыз ету» мамандығы бойынша оқитын студенттерге арналған.

## ПОЯСНИТЕЛЬНАЯ ЗАПИСКА

Главная идея высшего образования состоит в том что, чтобы формировать креативно-мыслящую личность, которая развиваясь самостоятельно превращается из пассивного студента, потребителя знаний в активного создателя, способного самостоятельно решить проблему и доказать ее правдивость.

Предлагаемое учебно-методическое пособие имеет профессиональную направленность текстов с использованием специальной технологии и предназначается для студентов инженерных специальностей, нуждающихся в профессиональном общении на английском языке. Оно состоит из 15 уроков, в которых рассматриваются различные инженерные вопросы. Разнообразные задания в каждом уроке помогут студентам использовать накопленные знания в практической деятельности.

Словарь на трех языках включает в себя перевод специальной терминологии. Тематический диапазон текстов учебного пособия соответствует данным специальностям и предоставляет студентам возможность углубить свои знания профессионального английского языка в сфере инженерии.

Предложенный учебно-методический материал предназначен для студентов специальности «5B070400- Вычислительная техника и программное обеспечение»

## INTRODUCTION

The main idea of higher education consists in the formation of a creative person who will be able self-educate, self-develop and to transfer the student from the passive consumer of knowledge into the active capable of finding and solving a problem and proving its correctness.

This teaching aid has got objects reality because of the professional orientation of the texts and terminology of specialties. The teaching aid is formed for students who need specialized knowledge of English for professional communication with in the Engineering specialties. It consists of 15 units which cover different aspects and consider various Engineering and technology functions. The varied tasks in each unit help students to use their existing knowledge of the English language at work. Each unit identifies a vocabulary area in three languages.

The range of text types throughout aid teaching aid reflects the Engineering and provides students with practice in various real-life conditions .There are some testing tasks to each theme in the unit. English grammar is rather difficult for students so in each unit there are a lot of grammatical exercises which can be very helpful for them .This teaching aid has a strong focus on students` developing professional skills. Proposed teaching materials for students of the specialty "5B070400 – Computing systems and Software"

## PREFACE

PREFACE			
Units & topics	Speaking &	Writing &	Grammar &

	<b>Reading</b>	<b>Listening</b>	<b>Lexis</b>
1.A Short history of computers and Information Technology	Speaking about Information Technology. Reading about A short history of computers compact disk	Making word combination Making a sentence Listening about A Short history of computers	The article
2.Information systems	Listening about Information systems of computers Reading about Information Technology	Listening about shop assistant Doing exercise according to the grammar in unit	The present perfect
3.Computers in our life	Listening about The use of computers in our life Reading about the mouse	Using cardinal and ordinal numbers Doing the crossword "Conserve"	The past perfect
4.Google Personalizes Search with Search Wiki	Listening about Google Personalizes Search with Search Wiki Reading about Computers Generations	Find the synonyms Listening about visit to restaurant	The past perfect continuous The future perfect continuous
5.Future Trends	Listening about Future Trends Reading about Robot	Filling the gaps Listening the following words	The adjective and adverbs Comparative and superlative

			forms
6.Programming Languages	Listening about Programming languages  Reading about computer systems	Listening the text and filling the gaps  Writing the negative sentences	The modal verbs
7.Types of computers	Listening about types of computers  rs  Reading about future trends	Doing the crossword  Listening about the text and filling the gaps	The passive voice
8.Information Technology	Listening about information technology    Reading about Traceability	Making a sentence  Mix and match	The complex object
9.Hardware, Software, and Firmware	Listening about hardware, software, and firmware  Reading about Automation	Filling with the correct answer  Making a sentence  Listen the conversation	The prepositions, Conjunctions Prepositions
10.Software Engineering Ethics	Listening about software engineering ethics  Reading about Computers in our life	Listening about idioms  Doing exercise according to the grammar in unit	The pronouns

11.Symbol Language	Listening about Symbol Language  Reading about <i>goggle</i> <i>Personalizes Search with Search Wiki</i>	Listening about bread in the lexicon	The Conditionals
13.Testing	Listening about Testing  Reading about Symbol Language	Listen to the conversation  Finding the words	The Infinitive
14.Security	Listening about Security  Reading about Software Development Methods	Listening the composition  Find and circle the words	The Gerund
15.Database	Listening about Database  Reading about Security	Listening the dialog  Mix and match	The Indirect Speech. Reposted speech.

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## TEXT 1

### Topical Vocabulary

<b>English</b>	<b>Kazakh</b>	<b>Russian</b>
Invention	Ойлап табу	Изобретение
Device	Тетік	Механизм
Wheels	Дөңгелектер	Колеса
Column	Таблица	Таблица
counting	Есеп	Счет
Tabulating	Таблицаға келтіру	Сведение в таблицу
Similar	Ұқсас	Похожий
Input	Енгізу	Ввод
Adding	Қосымша	Дополнение
Vital	Өмірлі	Жизненный
Gap	Алшақтық	Пропасть
Until	Дейін	До

## **Read the text and retell**

### **A SHORT HISTORY OF COMPUTERS AND INFORMATION TECHNOLOGY**

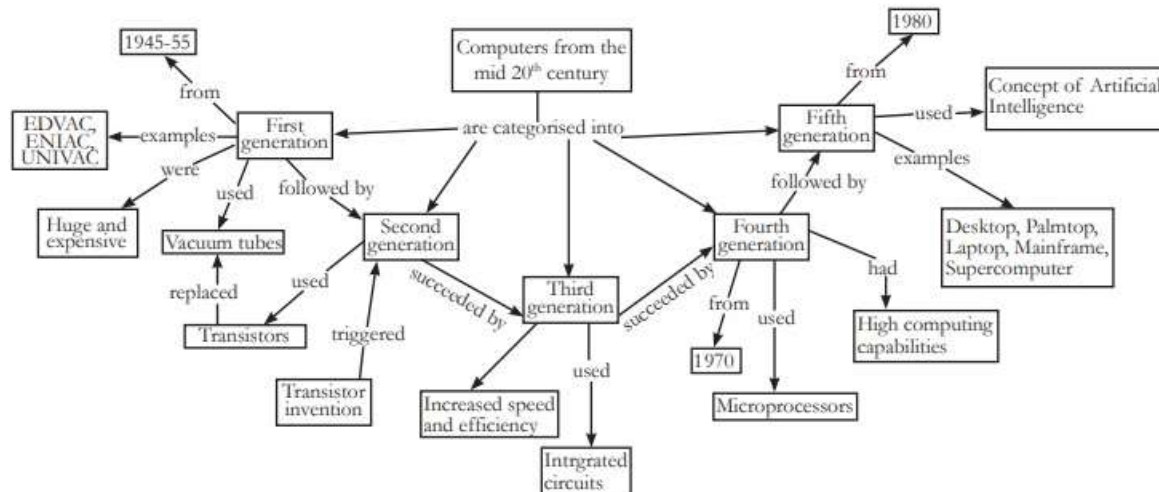
There is almost 300 years ago between the invention of the first mechanical computer and the invention of the first electronic computer. In 1642, Blaise Pascal, in France, who was 19 at the time, grew tired of adding long columns of figures in his father's tax office and he designed a mechanical device consisting of a series of numbered wheels with gears for decimal reckoning, which could add and subtract the long columns of figures. Thirty years later, a German, Gottfried Leibniz, invented the Leibniz wheel using similar principles, which could not only do subtraction and addition, but also multiplication and division.

Almost a hundred years passed before Sir Charles Babbage designed the first universal automatic calculator. Again, it was a mechanical device using counting wheels, coping with 1000 words of 50 digits each, but with one vital difference: he got punched cards to control the programme. Punched cards were also used as input and output devices. The machine contained all the functions necessary in a modern computer - an input unit, a store or memory, an arithmetic unit, a control unit and an output unit. Improvements were made by Pehr Schuetz in Sweden and a machine similar to Babbage's was built in 1854, which was capable of printing out its own tables. Almost forty years passed before H.Hollerith, in America, developed a machine for tabulating population statistics for the 1890 census. Holes in punched cards were used to denote age, sex, etc., and the size of the cards were made the size of a dollar bill. Another forty years later, Vannevar Bush in the USA, developed an early analogue computer for solving differential equations, and analogue computers were built by several universities (e.g. Manchester University in the UK in 1934). First electronic digital computers were not purely electronic but electromechanical. In 1937 Howard H. Aiken of Harvard university designed an electromechanical automatic sequence-controlled calculator which was built by IBM and presented to Harvard 7 years later. A relay-operated computer was built by Stibitz, of Bell Laboratories, about the same time. The first truly electronic computer was the ENIAC (Electronic Numerator Integrator and Computer) begun in 1942 by the University of Pennsylvania and completed in 1946. It used



18 000 tubes, was 51 feet long and 8 feet high. The numbers used in this machine could be added in 200 microseconds and multiplied in 2300 microseconds, this was the fastest calculator developed up to this time. From the middle 1940s, a series of computers were built each using later electronic techniques as they were developed<sup>3</sup>, i.e. tubes to transistors, transistors to integrated circuits, each becoming smaller and smaller, until<sup>4</sup> present microcomputers were produced.

**1. Here is a picture which tells about the history of computers from mid twentieth century. Study the picture and answer the following questions.**



a) From the figure can you tell which was the technology used in the first, second, third, fourth and fifth generation computers?

\_\_\_\_\_ Name two first generation computers.

\_\_\_\_\_

\_\_\_\_\_

b) Which invention resulted in the evolution of Second generation computer?

\_\_\_\_\_

\_\_\_\_\_

c) Give some examples of fifth generation computers

\_\_\_\_\_

**2. How do you understand the joke? Discuss it with your partner.**

A technician received a call from a customer who was enraged because his computer had told him he was "bad and an invalid". The tech explained that the computer's "bad command" and "invalid" responses shouldn't be taken personally.

### 3. Select one of the following and write a short note on the history of its development.

- Cell phone
- Computer
- Internet
- Email
- Social networking

#### SWS 1. TEXT

### COMPACT DISC

The invention of the compact disc (CD) was the result of research carried out on the video disc by the Dutch electronics company Philips NV. Under a joint licensing agreement by Philips and the Japanese company Sony, the CD was first developed in 1979. A process of digital recording is used, rather than the analogue recording process.

The signal is coded in binary form, using series 0 and 1. The sound is reproduced by a laser beam. The compact disc has a diameter of 5 inches and can hold 75 minutes of music or sound on one side.

The CD was first marketed in 1983, and by 1991 had outstripped both traditional forms of recorded music - records and tapes - in terms of unit sales and values. In the space of a few years, the CD has achieved incredible success, and its applications are many and varied. In 1984 Philips and Matsushita brought out the prototypes of decoders that enabled fixed images, which had been stored on CDs alongside an audio signal, to be viewed on television. In 1985 the extensive storage capacity of CDs was applied to computers. CD players now have the capability of running a disc at twice the normal speed, which makes it possible to record an hour.

#### 1. SSW with TI

##### 1. Choose the correct variant.

##### V. Retell the text

##### SSW 1

##### Grammar: Articles

The 3 articles in English are: **a**, **an** and **the**. The learner has to decide noun-by noun which one of the articles to use. In fact, there are 4 choices to make, because

sometimes no article is necessary. The most important first step in choosing the

correct article is to categorize the noun as **countable** or **uncountable**. A *countable*

noun is a noun that **can** have a number in front of it: *1 teacher, 3 books, 76*

*trombones, 1,000,000 people*. An *uncountable* noun is a noun that **cannot** have a

number put in front of it: *1 water*. Once you have correctly categorized the noun

(using your dictionary if necessary), the following "rules" apply:

### Uncountable nouns

You cannot say a/an with an uncounted noun. You cannot put a number in front of an uncountable noun. (You cannot make an uncountable noun plural.) You use an uncountable noun with no article if you mean that thing in general. You use the with an uncountable noun when you are talking about a particular example of that thing.

### Countable nouns

You can put a number in front of a countable noun. (You can make a countable noun plural.)

You can put both a/an and the in front of a countable noun.

You must put an article in front of a singular countable noun.

You use a plural countable noun with no article if you mean all or any of that thing.

You usually use a/an with a countable noun the first time you say or write that noun.

You use the with countable nouns: the second and subsequent times you use the noun in a piece of speech or writing when the listener knows what you are referring to (maybe because there is only one of that thing)

You use an (not a) when the next word (adverb, adjective, noun) starts with a vowel sound.

### Exercise 1. Put articles (a, an, the) where necessary

1. They give pupils .... high level of academic education ....which can lead to ....university.
2. Technical Schools offer ... general education with ... technical bias and serve those pupils who.... are more mechanically minded. .... curriculum includes more lessons of science and mathematics.
3. Secondary modern schools were formed to provide ... non-academic education for children of lesser attainment. .... curriculum includes more practical subjects.
4. Comprehensive schools bring about .... general improvement in .... system of secondary education.

### 1. Choose the correct variant.

1. ...Smiths have a dog and a cat.

- a) ... b) The c) A

2. He knows how to work on ... computer.

- a) a b) an c) ...

3. She was the first woman to swim across ... English Channel.

- a) a b) ... c) the

4. Go down ... Kingston Street and turn left into Oxford Street.

- a) the b) a c) ...

5. I don't like milk in ... tea.

- a) ... b) the c) a

6. At the end of... busy day, sleep is the best way to restore your energy.

- a) the b) a c) ...

7. We'll go for a walk if ... weather is fine.

- a) a b) ... c) the

8. Could you give me ... information I asked for in my letter?

- a) the b) ... c) a

9. ...war is a terrible thing.  
 a) The b) ... c) A  
 10. I spent ... very interesting holiday in England.  
 a) the b) a c) ...

**2. Fill in the correct article.**

1. "Is this your ... friend?" — "No, it isn't my ... friend, it is my sister".
2. I have ... sister. My ... sister is ... teacher. My sister's ... husband is ... pilot.
3. I have no ... car.
4. She has got ... terrible ... headache.
5. They have ... dog and two ... cats.
6. My ... cousin says he is going to be ... manager one ... day.
7. Would you like ... apple?
8. This is ... tree. ... tree is green.
9. I can see three ... children. ... children are playing in ... yard.
10. I have ... car. ... car is white. My ... friend has no ... car.

**2. Put a/an or the article in the place where it is necessary**

I'd like ... chicken sandwich and ... glass of ... mineral water.

1. Would you like ... banana or ... strawberries?
2. She always has ... apple, toast and ... cup of ... coffee for ... breakfast. The fly is on ... ceiling in ... kitchen.
3. My mother is ... accountant and my father is ... lawyer. They work in ... same company in ... centre of ... our town
4. How much are ... her Italian lessons? – Ten dollars ... hour.
5. Where are ... dogs? – They are in ... garden.
6. ...cats like eating ... fish. ...cows like eating ... grass. ...birds like eating ... insects.
7. My favourite subjects are ... chemistry and ... biology.
8. There is ... parrot in ... cage. And there are ... pieces of ... fruit in it.
9. My granny lives in ... small village in ... country.
10. Your baby shouldn't sit in ... sun on ... hot day.
11. Please open ... book. ...exercise is on ... page 68.
12. Ann has been looking for ... job for ... long time.
13. What's ... matter? - I missed ... 6 o'clock train.
14. Do you like ... vegetables? (Ты любишь овощи?)
15. ...mother has got ... terrible headache today.
16. There were ... tears in ... her eyes.
17. She is ... very nice woman but her sons are ... bad boys.
18. Look at ... woman. She is ... neighbor I told you about.

**Text 2**

**Topical Vocabulary**

English	Kazakh	Russian
Refer	Қатысы болу	Относиться

Include	Қосып алу	Включать
Field	Өріс	Поле
Computer-based	Компьютерге негізделген	Компьютерное основание
Consideration	Қарап шығу	Рассмотрение
Incorrect	Бұрыс	Неправильный
Meaning	Маңызы	Значение
Exchange	Ауыстыру	Обмен
Spare	Қор	Запас
Channel	Канал	Канал

## Read the text

### Information systems

The term information system (IS) sometimes refers to a system of persons, data records and activities that process the data and information in an organization, and it includes the organization's manual and automated processes. Computer-based information systems are the field of study for information technology, elements of which are sometimes called an "information system" as well, a usage some consider to be incorrect.

The term "information system" has different meanings:

In computer security, an information system is described by three objects:

Structure:

Repositories, which hold data permanently or temporarily, such as buffers, RAM, hard disks, cache, etc. Interfaces which exchange information with the non-digital world, such as keyboards, speakers, scanners, printers, etc. Channels, which connect repositories, such as buses, cables, wireless links, etc. A Network is a set of logical or physical channels.

Behavior:

Services, which provide value to users or to other services via messages interchange. Messages, which carries a meaning to users or services. In geography and cartography, a geographic information system (GIS) is used to integrate, store, edit, analyze, share, and display geo referenced information. There are many applications of GIS, ranging from ecology and geology, to the social sciences.

In knowledge representation, an information system consists of three components: human, technology, organization. In this view, information is defined in terms of the three levels of semiotics. Data which can be automatically processed by the application system corresponds to the syntax-level. In the context of an individual who interprets the data they become information, which correspond to the semantic-level. Information becomes knowledge when an individual knows (understands) and evaluates the information (e.g., for a specific task). This corresponds to the pragmatic-level.

In mathematics in the area of domain theory, a Scott information system (after its inventor Dana Scott) is a mathematical 'structure' that provides an alternative representation of Scott domains and, as a special case, algebraic lattices. In mathematics rough set theory, an information system is an attribute-value system. In sociology information systems are also social systems whose behavior is heavily influenced by the goals, values and beliefs of individuals and groups, as well as the performance of the technology.

In systems theory, an information system is a system, automated or manual, that comprises people, machines, and/or methods organized to collect, process, transmit, and disseminate data that represent user information.

In telecommunications, an information system is any telecommunications and/or computer related equipment or interconnected system or subsystems of equipment that is used in the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of voice and/or data, and includes software, firmware, and hardware.

In organizational informatics an information system is a system of communication between people. Information systems are systems involved in the gathering, processing, distribution and use of information and as such support human activity systems.

### **1. Guess the meaning of the underlined words.**

### **2. Define true and false sentences:**

- (a) The term "information system" has only one meaning.
- (b) Information system consists of three components: human, technology, organization.
- (c) Information is defined in terms of the five levels of semiotics.
- (d) In systems theory, an information system is a system, automated or manual, that comprises people, machines, and/or methods
- (e) In organizational informatics an information system is a system of communication between animals.
- (f) In geography and cartography, a geographic information system (GIS) is used to integrate, store, edit, analyze, share, and display dereference information.
- (g) Data which can be automatically processed by the application system corresponds to the chaos-level.

### **3. Answer the following questions:**

- (a) What is IS?
- (b) How many meanings do IS have?
- (c) What is Network?
- (d) For what is GIS used?
- (e) How many components does information system consist of?
- (f) What can you say about three levels of semiotics?
- (g) When does information become knowledge?
- (h) What do you know about Scott information system?

### **4. Discuss with a partner the following terms and phrases**

- (a) information system; (b) Network; (c) repositories; (d) semiotics; (e) domain theory; (f) messages; (g) telecommunications; (h) manipulation; (i) to disseminate data.

## 5. Retell the text.

### SWS2.

#### Read the text and retell

#### INFORMATION TECHNOLOGY

The definition of information technology (IT) is as follows: the use of technology to provide the capture, storage, retrieval, analysis and communication of information, which can be done either in the form of data, text, image or voice.

With the invention and exploitation of the integrated circuit or 'chip' since the 1960s, the growth of applications using electronics has been phenomenal. Modern electronic computers can process data, graphics and speech at extremely fast rates. The microprocessor is at the heart of what is known as the IT revolution.

Information and communications technologies are changing the way we work, study, do research, and educate our children and ourselves. They are influencing the way we do our banking, pay our bills, entertain ourselves and do business. New options (choices) are being provided for us in the field of health care, education, environmental protection, culture, and business. Computers control washing machines, cookers, televisions, telephones, home computers, cameras, video games, digital watches and many other devices. Offices and factories now use microprocessors in the everyday life, as do cars, fax machines, aircraft fly control, railway signaling, police computer databases, etc.

The aim of the IT revolution has been to transform labor-intensive work, such as mining, agriculture, iron, steel and cotton industries, hardware manufacturing, etc., into an industry where a few highly-skilled workers manage large factories with mainly automated labor.

The influence of the Multimedia is part of the IT revolution. The change from analogue to digital television made it possible to develop special effects, such as the original full screen television image which could be shrunk (уменьшить) to occupy a small portion of the screen.

Compact discs can record complete encyclopedias, as well as provide sound and Pictures. The impact of this information revolution on our society cannot yet be fully measured or predicted at this time. The combination of new and rapidly developing interactive

Multimedia computers and applications with electronic networks will require a Restructuring of our traditional approach to strategic planning and organizational structure. It also means a considerable (great) change in the way we interact with each other, with business and with government.

## 2. SSW with TI

### Grammar: The Present Perfect

We use the Present Perfect to express a completed action connected with the present, to talk about recent actions and about our lives. It is used with the words: already, ever, never, yet, often, just, lately, this morning, today this year, since, etc.

Positive	Negative	Questions
I have eaten	I have not eaten	Have I eaten?
You have eaten	You have not eaten	Have you eaten?

He has eaten	He has not eaten	Has he eaten?
She has eaten	She has not eaten	Has she eaten?
It has eaten	It has not eaten	Has it eaten?
We have eaten	We have not eaten	Have we eaten?
You have eaten	You have not eaten	Have you eaten?
They have eaten	They have not eaten	Have they eaten?

We form the present Perfect like this: Have / Has+ Past Participle

I have eaten = I've eaten                      He has eaten = he's eaten

I have not eaten = I haven't eaten      He has not eaten = he hasn't eaten

The Past Participle can be regular or irregular: I have played

I have broken

We have washed the dishes. (The dishes are clean)

At 10.00, Zhanara arrived home. At 10.05, we can say Zhanara has arrived.

I have never been to America.

Have you ever eaten caviar? (in your life)

I haven't drunk anything since breakfast.

Have you done a lot of work this morning?

I haven't ridden a bicycle since my childhood.

"I have lost my gun."              "When did you lose it?" When is not used in Present Perfect, in Past Simple.

I've just come. = a short time ago

He has already gone= before you expected

We haven't written yet= until now yet is used in negative sentences and questions. Yet is usually at the end. Have they arrived yet?

**Exercise 1. Write sentences in present perfect simple.**

They / ask / a question -

He / speak / English -

I / be / in my room -

We / not / wash / the car -

Annie / not / forget / her homework -

**Exercise 2. Write questions in present perfect simple.**

They / finish / their homework -

Sue / kiss / Ben -

The waiter / bring / the tea -

Marilyn / pay / the bill -

You / ever / write / a poem -

**Exercise 3. Ask for the information in the bold part of the sentence.**

They have talked about art at school. -

Jane has got a letter. -



Oliver has cooked dinner. -

Caron has read seven pages. -

You have heard the song 100 times. -

### Present Perfect Continuous (I have been doing)

#### Have/has been +ing is the Present Perfect Continuous

Positive	Negative	Questions
I have been waiting	I have not been waiting	Have I been waiting?
You have been waiting	You have not been waiting	Have you been waiting?
He has been waiting	He has not been waiting	Has he been waiting?
She has been waiting	She has not been waiting	Has she been waiting?
It has been waiting	It has not been waiting	Has it been waiting?
We have been waiting	We have not been waiting	Have we been waiting?
You have been waiting	You have not been waiting	Have you been waiting?
They have been waiting	They have not been waiting	Have they been waiting?

We use the Present Perfect Continuous for an activity that has recently stopped or just stopped. There is a connection with now

Kairat is very tired. He has been working very hard.(he is tired now)

We use the Present Perfect Continuous with how long, for...and since. The activity is still happening or has just stopped.

“How long has it been raining?” - “It has

#### Write these verbs into 3 columns. Add -ing to the verbs.

Hop, bring, wear, teach, sit, leave, use, come, travel, put, try, shop, watch, clean, tidy, invite, say, continue, take, begin, get, make, plan, cut, eat, catch.

#### Write a question for each situation.

1. Irina looks sunburnt.

You ask: you/sit in the sun? \_\_\_

2. You have just arrived to meet a girlfriend who is waiting for you.

You ask: you / wait / long? \_\_\_

3. You meet a friend in the street. Her face and hands are very dirty.

You ask: what / you / do? \_\_\_

4. A friend of yours is now living in Khreschatic Street.

You want to know “How long ...?”

You ask: how long / you / live / in Khreschatic street? \_\_\_

5. A friend tells you about his job – he sells computers.

You want to know ‘How long ...?’

You ask: how long / you / sell / computers? \_\_\_

**Put the verbs in present perfect continuous.**

1. He (work) \_\_\_ in this company since 1995.
2. I (wait) \_\_\_ for you since three o'clock.
3. Mary (live) \_\_\_ in Germany since 1992.
4. Why is he so tired? He (play)\_ football for five hours.
5. How long (learn / you) \_\_\_ English?
6. We (look for) \_\_\_ the motorway for more than two hours.
7. I (live) \_\_\_ without electricity for three weeks.
8. The film (run / not) \_\_\_ for ten minutes yet, but there's a commercial break again already.
9. How long (work / he) \_\_\_ in the garden?
10. He (not / be) \_\_\_ in the garden for more than an hour.

**Write sentences in present perfect continuous.**

1. The cat / the mouse / chase \_\_\_
2. He / the homework / copy \_\_\_
3. They / a new garden / take care \_\_\_
4. They / in a forum / chat / not \_\_\_
5. Ruslan / on the task / concentrate / not \_\_\_

**Write questions in present perfect continuous.**

1. Dmitry / paint \_\_\_
2. The secretary / the documents / print out \_\_\_
3. We / a room / share \_\_\_
4. The dog / run around / how long \_\_\_
5. She / at the door / knock / how long \_\_\_

**TEXT 3**

**Topical Vocabulary**

English	Kazakh	Russian
Reason	Себеп-салдар	Причина
Alive	Тірі	Живой
Human	Адам	Человек
Sound	Тұрақты	Устойчивый
Source	Негізгі көзі	Источник
Sums	Есеп	Счет
Fast	Жылдам	Быстрый
Barriers	Кедергілер	Барьеры
Symptoms	Белгілер	Симптомы
Various	Әр түрлі	Различный
Descendants	Ұрпақтар	Потомки
Efficient	Тиімді	Эффективный
Predict	Болжау	Прогнозировать
Discoveries	Табу	Обнаружение

## Read the text.

### Computers in our life

When Charles Babbage, a professor of Mathematics at Cambridge University, invented the first calculating machine in 1812 he couldn't imagine the situation we find ourselves in today. Nearly everything we do in the world is helped, or even controlled by computers, the complicated descendants of his simple machine. Computers are used more and more often in the world today, for the simple reason that they are far more efficient than human beings. They have much better memories and they can store much information. No man alive can do 500.000 sums in one second, but a computer can. In fact, computers can do many of the things we do, but faster and better. They can predict weather, and even play chess, write poetry or compose music.

The use of computers

Just as television has extended human sight across the barriers of time and distance, so the computers extend the power of the human mind across the existing barriers. Computers in medicine

Computers are one of great importance in modern hospital. The chief use of computers is the storing and sorting the medical knowledge which has been enquired in the last 50 years. No doctor can possible keep up with all discoveries. The only solution of the problem is store medical knowledge in a computer. Today there are medical computer centers where all existing knowledge of symptoms of various diseases and of their treatment is stored. Doctors feed data on symptoms in the computer and get the necessary information on correct diagnostics and treatment.

### 1. Guess the meaning of the underlined words.

### 2. Define true and false sentences:

- (a) Charles Babbage is a professor of Harvard University.
- (b) Charles Babbage invented the first calculating machine.
- (c) Computers are not used today.
- (d) Computers are one of great importance in modern hospital.
- (e) Any man alive can do 500000 sums in one second, but a computer cannot.
- (f) Doctors feed data on symptoms in the computer.
- (g) The only solution of the problem is store medical knowledge in a computer.

### 3. Answer the following questions:

- (a) Which role does computer play in your life?
- (b) How often do you use computer?
- (c) Can you call yourself as "an Internet user"?
- (d) In what sphere do computers use widely?
- (e) Could a person keep the endless information in his head?
- (f) Do you think that in the future computer can replace a person?
- (g) What advantages of a computer do you know?
- (h) Who invented the first calculated machine?
- (i) How do you imagine our life without computers?

#### 4. Discuss with a partner the following terms and phrases

- (a) computers; (b) information; (c) medical knowledge; (d) discoveries; (e) computer centers; (f) computers in medicine.

#### 5. Retell the text.

#### 6. How do you understand the joke? Discuss it with your partner.

A confused caller to IBM was having troubles printing documents. He told the technician that the computer had said it "couldn't find printer." The user had even tried turning the computer screen to face the printer - but his computer still couldn't "see" the printer.

### SWS 3

#### TEXT

**Translate the text with a dictionary. Do it in a written form. Put questions to the underlined sentences.**

#### THE MOUSE

The mouse is a small device that slides in all directions on a desk which makes it possible to interact naturally with the computer. Its use was popularized by Apple with the Lisa and the Macintosh models in 1983. However, it was the little-known American inventor Douglas Englebart who conceived and designed the mouse at the Stanford research institute in the mid-1960s. His brilliant idea was to have the computer operator place his or her hand on a small box or mouse. A sphere on the underside of the mouse is used to measure movements which are then transmitted to the computer via a lead - the tail of the mouse. These movements are translated to the cursor on the screen: if the mouse is pushed to the right the cursor goes to the right; if the mouse is pushed away from the user the cursor moves up, and so on. This evolutionary input device, originally found only on Apple computers, was adopted by IBM in 1987.

### 3. SSW with TI

#### Grammar: Past Perfect

We use the Past Perfect to express an action completed before a given past moment. This moment may be indicated:

By adverbial expressions such as by six o'clock, by that time, by the end of the week etc.

I had finished dressing by three o'clock.

I had ridden this horse before last Sunday.

By another action in the past simple

When Kamila arrived at the party, Kairat had already gone home.

When we got home last night, we found that somebody had broken into the flat.

He suddenly realized that he had left his suitcase in the bus.

Bulat didn't want to go to the cinema with us because she had already seen the film.

Positive	Negative	Questions
I had gone	I had not gone	Had I gone ?
You had gone	You had not gone	Had you gone?
He had gone	He had not gone	Had he gone?
She had gone	She had not gone	Had she gone?

It had gone	It had not gone	Had it gone?
We had gone	We had not gone	Had we gone?
You had gone	You had not gone	Had you gone?
They had gone	They had not gone	Had they gone?

The Past Perfect is = had+ Past Participle (gone, seen, finished etc)

I had gone = I'd had gone I had not gone = I hadn't gone

### Exercise 1. Use Past Perfect or Past Simple!

1. When he (to come) home, his mother already (to cook) dinner.
2. When we (to come) to my friend's house, he just (to leave).
3. When her husband (to enter) her office, she already (to finish) her work for that day.
4. Jennifer (to send) him an email after he (to call).
5. Andy (to ask) his friend before he (to propose) him his help.
6. We (to eat) a cake which I (to bring) an hour before.
7. My sister (to take) my dress which I (to buy) in Morocco.
8. I (to work) on the computer yesterday which I (to buy) a week ago.
9. I (to know) that my friend (not yet to complete) the test in the university.
10. Nick and his wife (to come) home from the theatre at five o'clock.
11. Nick and his wife (to come) home from the theatre by five o'clock.
12. She (to finish) my homework at seven o'clock.
13. She (to finish) my homework by seven o'clock.
14. They (to sell) their house before they (to buy) the new one.
15. He told me that he (to buy) a new car.
16. Yesterday I (to wake up), (to open) my eyes and (to remember) what I (to do) the day before.
17. She said that she (to have) a great vacation trip.
18. You (to complete) the test by Friday?
19. I (not to have) a lunch by the afternoon, so I was very hungry.
20. I (to fix) my car before my daughter (to return) back from school.

## SSW 4

### Grammar:

#### Future Perfect

We use the Future Perfect to say that something will already be completed before a given moment in the future.

The Future Perfect = will have+ Past Participle.( done, seen, written)

Positive	Negative	Questions
I will have eaten	I will not have eaten	Will I have eaten?
You will have eaten	You will not have eaten	Will you have eaten?
He will have eaten	He will not have eaten	Will he have eaten?
She will have eaten	She will not have eaten	Will she have eaten?
It will have eaten	It will not have eaten	Will it have eaten?
We will have eaten	We will not have eaten	Will we have eaten?
You will have eaten	You will not have eaten	Will you have eaten?

They will have eaten	They will not have eaten	Will they have eaten?
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“ I think we’ll **have finished** all this before dark.”

We are late. The film **will** already **have started** by the time we get to the cinema.

They **will have finished** their compositions by 7 o’clock in the evening.

**Exercise 2. Put the necessary verb.**

1. By this time tomorrow, I \_\_\_\_\_ (finish) the project.
2. By 8 o'clock, the kids \_\_\_\_\_ (fall) asleep.
3. By tomorrow morning, he \_\_\_\_\_ (sleep) wonderfully.
4. By next year, she \_\_\_\_\_ (receive) her promotion.
5. Robin \_\_\_\_\_ (sell) his car by next Sunday.
6. Morgan \_\_\_\_\_ (clean) the entire house by lunch.
7. We \_\_\_\_\_ (dance) a few dances before midnight.
8. At this time tomorrow morning, they \_\_\_\_\_ (begin) working.
9. At this time next week, we \_\_\_\_\_ (catch) the thief.
10. At 2013, I \_\_\_\_\_ (live) in Madrid for 5 years.
11. At 2020, they \_\_\_\_\_ (work) here for 20 years.
12. By September, Julie \_\_\_\_\_ (teach) us for over a year.
13. By October, I \_\_\_\_\_ (study) English for 3 months.
14. At Monday, she \_\_\_\_\_ (wait) for 2 weeks.
15. Before Saturday, you \_\_\_\_\_ (do) all of your homework.

**TEST**

**Choose the right variant**

1. The peasant knew that in two months he \_\_\_\_\_ for 30 years.  
a) Will have worked; b) would have been working; c) will have been working; d) ----
2. The repairman promised that the car \_\_\_\_\_ by the following week.  
a) Would be fixed; b) would have been fixed; c) will have been fixed; d) ----
3. We did not expect that by three o'clock the meeting \_\_\_\_\_ for five hours without a break.  
a) Would have lasted; b) would have been lasting; c) ----
4. The pupils knew that their teacher \_\_\_\_\_ the class by the end of the lesson.  
a) Would not have entered; b) would not have been entering; c) ----
5. He said that by five o'clock he \_\_\_\_\_ the test for three hours.  
a) Would have written; b) would have been writing; c) ----
6. The artist said that in a month he \_\_\_\_\_ the picture for a year.  
a) Would have painted; b) would have been painting; c) ----
7. The girl hoped that her fiancé \_\_\_\_\_ her before the New Year.  
a) Would have married; b) would have been marrying; c) ----
8. We were told that the following summer the old man \_\_\_\_\_ silent for fifty years.

a) Would have kept; b) would have been keeping; c) ----

9. I was sure she \_\_\_\_\_ out the truth before the right time.

a) Would have found; b) would have been finding; c) ----

10. It was a great surprise to know that the following day the prisoner \_\_\_\_\_ for two weeks.

a) Would not have eaten; b) would not have been eating; c) ----

## TEXT 4

### Topical Vocabulary

English	Kazakh	Russian
Bottom	Ең төменгі мөлшер	Самый низкий уровень
Revision	Тексеріс	Проверка, просмотр
Feature	Ерекшелік	Особенность
Users	Қолданушылар	Пользователи
Span	Аралық	Интервал, период
Anything	Бірдеңе	Что-то
Exploit	Жұмыс істету	Эксплуатировать
Review	Қайталау	Обзор
Delay	Іркіліс	Задержка
Rely	Сүйену	Полагаться
Searches	Зерттеу	Исследования
Encourage	Қолдау	Поддерживать
Re-ranked	Қайтадан иелену	Вновь занимать
Essentially	Мәні бойынша	По существу
Relevancy	Орындылығы	Уместность
Particular	Нақты	Конкретный

### 1. Read the text.

#### *Google Personalizes Search with Search Wiki*

November 20, 2008

By Brad Stone

Google is set on Thursday to significantly change the way some people use its search engine. The company is introducing a new feature called Search Wiki that will allow people to modify and save their results for specific Google searches. They can move the sites that appear in rankings up or down, take them out altogether, leave notes next to specific sites and suggest new sites that are not already in the results (or are buried too far down in the results to see). Users must be logged in to Google to use Search Wiki and can revisit their annotations when they perform the same search later. Screen shot of Google's new Search Wiki feature.

The company is also making these annotations public, in a move that may either deter Google users from writing anything too personal on Search Wiki or encourage spammers to exploit the tool. At the bottom of every Google search results page, logged-in Google users will see a link that says, "See all notes for this Search Wiki." Clicking on it allow users to see how other people have re-ranked results or commented on sites. At least at first, there

will not be any way to make these notes private, Google says, but users can change or delete their notes at any time.

Search Wiki may essentially allow users to rank and review the top sites for common searches— like “Indian restaurants in San Francisco,” for example. That could spur users to evaluate businesses and push Google into direct competition with review sites such as Yelp.com and CitySearch. Marissa Mayer, Google’s vice president of search product and user experience, says that in internal tests, people’s notes in Search Wiki have tended to be more about the relevancy of the Web site to that particular search term.

**1. Guess the meaning of the underlined words.**

**2. Define true and false sentences:**

- (a) Google is set on Thursday to significantly change the way some people use its car engine.
- (b) The company is introducing a new feature called Search Wiki.
- (c) Users must be logged out to Google to use Search Wiki
- (d) Search Wiki may essentially allow users to rank and review the top sites for common searches.
- (e) Marissa Mayer is Google’s president of search product and user experience.
- (f) Marissa Mayer says that in internal tests, people’s notes in Search Wiki have tended to be more about the relevancy of the Web site to that particular search term.

**3. Answer the following questions:**

- (a) Do you consider yourself as a professional user of Internet?
- (b) How often do you search information through Google?
- (c) Did Google change your life?
- (d) Can you tell about disadvantages and advantages of Google?
- (e) Do you think that such web-sites are useful for information searching?
- (f) If you cannot find necessary information where do you begin to seek after?

**4. Make up questions using these words.**

- (a) search engine.; (b) Google users; (c) spammers; (d) Search Wiki; (e) Marissa Mayer ; (f) annotations.

**5. Retell the text.**

**6. How do you understand the joke? Discuss it with your partner.**

A technician received a call from a customer who was enraged because his computer had told him he was "bad and an invalid". The tech explained that the computer's "bad command" and "invalid" responses shouldn't be taken personally.

**SWS4**

**Read the text and find the main information’s**

**TEXT**

**COMPUTER GENERATIONS**



***The first generation (1951-1959)*** . The first generation of computers is usually thought of as beginning with the UNIVAC I in 1951. First-generation machines used vacuum tubes, their speed was measured in milliseconds (thousandths of a second), and the data input and output was usually based on punched cards. First-generation computers typically filled a very large room, and were used primarily for research. In early 1951 the first UNIVAC-1 became operational at the Census Bureau. When it displaced IBM punched card equipment at the Census Bureau, Thomas J. Watson, the son of IBM's founder reacted quickly to move IBM into the computer age. The first computer acquired for data processing and record keeping<sup>1</sup> by a business organization was another UNIVAC-1, installed in 1954 at General Electric's Appliance Park in Louisville, Kentucky. The IBM 650 entered service in Boston in late 1954. A comparatively inexpensive machine for that time, it was widely accepted. It gave IBM the leadership in computer production in 1955.

In the period from 1954 to 1959, many businesses acquired computers for data processing purposes, even though these first-generation machines had been designed for scientific uses. Nonscientists generally saw the computer as an accounting tool, and the first business applications were designed to process routine tasks such as payrolls. The full potential of the computer was underestimated, and many firms used computers because it was the prestigious thing to do. But we shouldn't judge the early users of computers too harshly. They were pioneering in the use of a new tool. They had to staff their computer installations with a new breed of workers, and they had to prepare programmers in a tedious<sup>3</sup> machine language. In spite of these obstacles, the computer was a fast and accurate processor of mountains of paper.

***The second generation (1959-1964)*** . The invention of the transistor led to computers that were both smaller and faster. During this period they were about the size of a closet, and operated in microseconds (millionths of a second). Internal memory was magnetic, and magnetic tapes and disks as well as punched cards were used for input, output, and storage. Computers were still fairly specialized: although computers could now be used for business as well as scientific applications, one computer could not perform both tasks.

The computers of the 2nd generation which began to appear in 1959, were made smaller and faster and had greater computing capacity. The practice of writing applications programmers in machine language gave way to the use of higher-level programming languages. And the vacuum tube, with its relatively short life, gave way to transistors that had been developed at Bell Laboratories in 1947 by John Bardeen, William Shockley, and Walter Brattain.

***The third generation and beyond*** . There is general agreement that the third generation began in 1964 with the introduction of the IBM System 360, which could handle both scientific and business computing. Computers shrank to the size of a large desk, and processing time shrank to nanoseconds (billionths of a second). Instead of individual transistors, as in the second generation, third-generation computers used integrated circuits, or ICs, which combined hundreds or even thousands of transistors on a single silicon chip. Instead of having a single operator and doing just one task at a time, the computer could work with different people giving them different tasks simultaneously.

Innovation and expansion have continued in the computer industry, but it is hard to tell a date of specific development which marked the end of the third generation and beginning of the fourth generation. Advances in chip design led to further modernization, and ICs gave way to the microprocessor, the so-called «computer on a chip». In the mid-

1970s the personal computer revolution started, in the last few years more and more PCs have begun to be connected to other PCs and minicomputer systems.

#### 4. SSW with TI

##### Grammar:

##### Past Perfect Continuous

We use the Past Perfect Continuous to express an action which began before a definite moment in the past, had continued up to that moment, and was still in progress at that moment or had very recently finished.

Or we can say that something had been happening for a period of time before something else happened.

##### The Past Perfect Continuous = had been-ing

Positive	Negative	Questions
I had been waiting	I had not been waiting	Had I been waiting?
You had been waiting	You had not been waiting	Had you been waiting?
He had been waiting	He had not been waiting	Had he been waiting?
She had been waiting	She had not been waiting	Had she been waiting?
It had been waiting	It had not been waiting	Had it been waiting ?
We had been waiting	We had not been waiting	Had we been waiting?
You had been waiting	You had not been waiting	Had you been waiting?
They had been waiting	They had not been waiting	Had they been waiting?

I had been waiting = I'd been waiting

I had not been waiting = I hadn't been waiting

I was very tired when I got home. I'd been working hard all day

We'd been playing tennis for about half an hour when it started to rain heavily.

At last the bus came. I'd been waiting for 20 minutes. (before the bus came)

Arman went to the doctor last Friday. He hadn't been feeling well for some time.

The police had been looking for the criminal for 2 years before they caught him.

##### Future Perfect Continuous (I'll have been dancing)

We use the Future Perfect Continuous to express an action which will begin before a definite moment in the future, will continue up to that moment, and will be continuing at that moment. To emphasize how long something has been doing on by a particular point in the future.

##### The Future Perfect Continuous = will have been + -ing

Positive	Negative	Questions
I will have been walking	I willnot have been walking	Will I havebeen walking ?
You will have been walking	You willnot have been walking	Will you have been walking?
He will have been walking	He willnot have been walking	Will he have been walking?
She will have been walking	She willnot have been walking	Will she have been walking?

walking	walking	walking?
It will have been walking	It will not have been walking	Will it have been walking?
We will have been walking	We will not have been walking	Will we have been walking?
You will have been walking	You will not have been walking	Will you have been walking?
They will have been walking	They will not have been walking	Will they have been walking?

On Saturday, we will have been living in this house for a year  
 Next year I will have been working in the company for 30 years.  
 When I meet you for the second time I will have been riding a bicycle for two hours

**Exercise 1. Put the verbs into the correct form (past perfect continuous).**

We (sleep)  for 12 hours when he woke us up.  
 They (wait)  at the station for 90 minutes when the train finally / bathroom.  
 I (not / walk)  for a long time, when it suddenly began to rain.  
 How long (learn / she)  English before she went to London?  
 Frank Sinatra caught the flu because he (sing)  in the rain too long.  
 He (drive)  less than an hour when he ran out of petrol.  
 They were very tired in the evening because they (help)  on the farm all day.  
 I (not/work)  all day; so I wasn't tired and went to the disco at night.  
 They (cycle)  all day so their legs were sore in the evening.

**Exercise 2. Put the verbs into the correct form (future perfect continuous).**

By the end of the month I (live)  in this town for ten years.  
 By the end of this week we (work)  on the project for a month.  
 By July the fifth they (study)  English for 3 years.  
 By 10 o'clock she (watch)  TV for 4 hours.  
 She (sleep)  for 10 hours by 11 o'clock.  
 We (look for)  him for 40 days by next Saturday.  
 They (wait)  for the president for 5 hours.

**Exercise 2. Put the verbs in brackets in the correct tense (future perfect simple or continuous.)**

By 2018 we (live)  in Madrid for 20 years.

He (write)  a book by the end of the year.  
 (finish, you)  this novel by next week?  
 He (read)  this book for 15 days by the end of this week.  
 They (be)  married for 40 years by the end of this month.

## TEXT 5

### Topical Vocabulary

English	Kazakh	Russian
Society	Қоғам	Общество
Wharf	Жүк түсіретін орын	Товарная пристань
Software	Бағдарламалық қамтамасыз ету	Программное обеспечение
Addition	Қосымша	дополнение
Smash	Баға курсының төмендеуі	Резкое падение курса валюты
Holding	Иелену	Владение(акциями)
Toward	Жағына қарай	По направлению к
Responsible	Жауапты	Ответственный
Monetary resources	Ақша ресурстары	Денежные ресурсы
Ethical	Этикалық	Этический

### Read the text

#### Future Trends

The movement toward professionalization of the computer industry and software engineering is continuing. There has been renewed attention to ethical issues within the engineering and computing professions with special attention given to the well-being of the client and the user of software engineering artifacts. The ACM and the IEEE Computer Society adopted the Software Engineering Code of Ethics and Professional Practice in 1998. Since that time it has been adopted by other computing professional organizations and by large and small software development companies as a standard of practice. This has occurred in spite of the fact that in addition to not causing harm, the Code requires software engineers to do what they can to prevent harm.

This means that a software engineer is expected to report another software engineer's faulty work. Adherence to this code requires reporting any signs of danger from computer systems, whether or not the individual reporting the risk designed the system. There are also

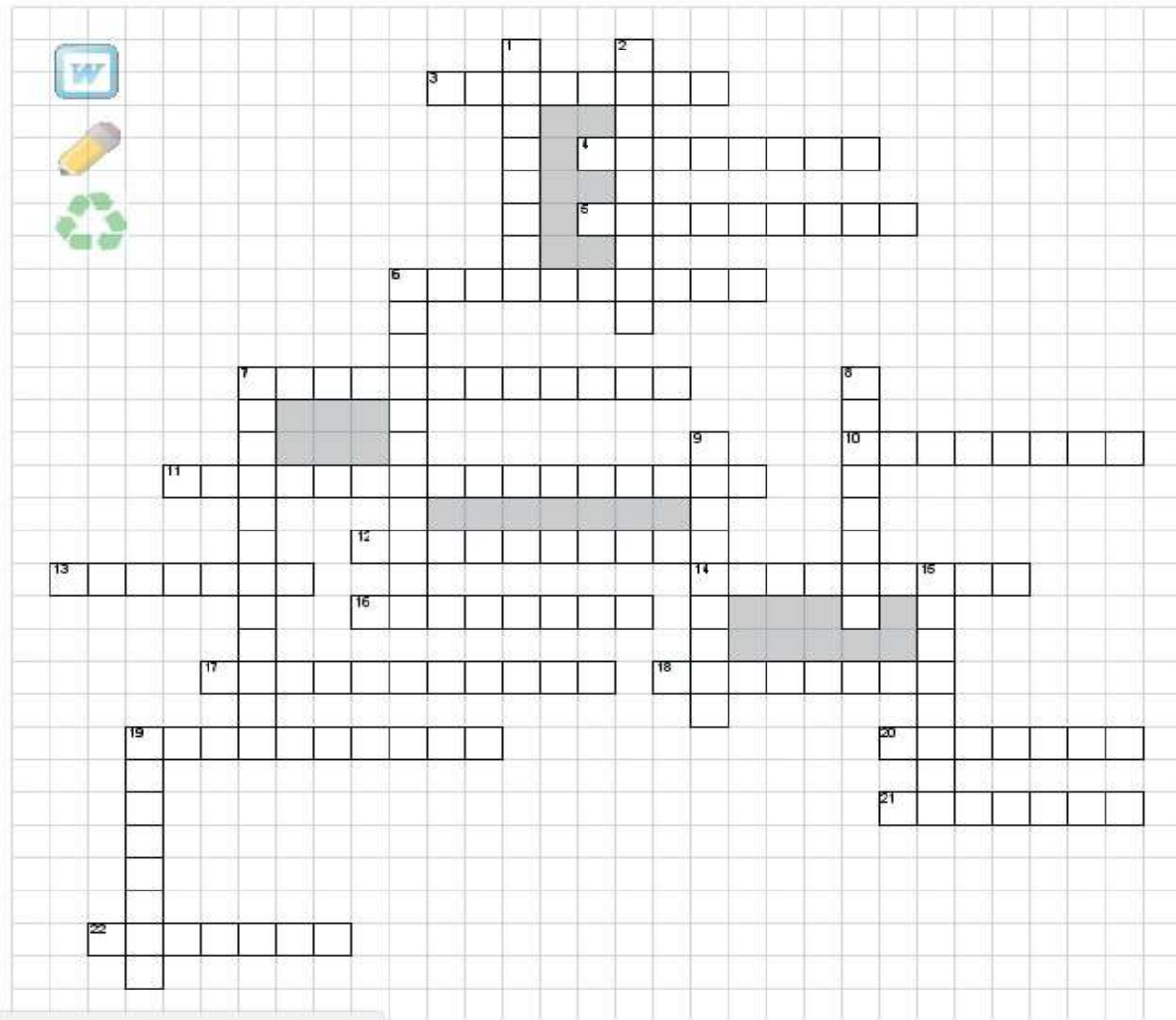
significant movements toward licensing software engineers and the codification of development standards. Clients are beginning to understand the responsibilities of software engineers and holding them responsible to those standards. The next step in software engineering ethics is a change in culture where there is a mutual understanding and expectation of ethical behavior of software engineers and those who are impacted by their products.

**1. Translate the following phrases combinations looking back at the text:**

- 1) to ethical issues within the engineering;
- 2) to the well-being;
- 3) to not causing harm;
- 4) to report another software engineer's faulty work;
- 5) to understand the responsibilities.

**2. Paste these words into the crossword**

<b>Vertically</b>	<b>Horizontally</b>
Hardware	Spammers
Telegraph	Register
Communicate	Archiving
Intelligence	Cyberspace
Computer	Incompatible
Telephone	Operating-system
Alphabet	Hard-drive
Software	Circuit
	Information
	Keyboard
	Internet
	Message
	Perform
	Postcard
	Secrecy
	Processor



**Horizontally:**

- 3. Those who send you spam
- 4. The memory cells
- 5. The effect of compression in the file .
- 6. The Internet as the totality of all available resources
- 7. Devices that can not work together
- 10. When you want to congratulate smb you send him or her a...
- 11. System software that allows your computer to work
- 12. Data storage device with big capacity
- 13. CPU is ...
- 14. This is the main device or collection of devices) used to perform actions (sequential arithmetic or logic operations in a strict sequence, in accordance with a given (mortgaged) program mode control of and actions related devices, performing the operation with him in a single system.
- 16. Primary text input device
- 17. The basic concept of computer science
- 18. Global network
- 19. Illegal interference in the operation of electronic computers, systems and computer networks, theft, appropriation, extortion of computer information
- 20. We use SMS to send...

21. To accurately perform, to do entirely.
22. One of the features of cybercrime

**Vertically:**

1. Physical parts that make up a computer system
2. People used a special code to send words over the ...
6. To speak to SMB means to...
7. This track sets, present the events in a certain region of space-time, where there is a matter that is especially prone to the formation of habits.
8. Which means of communication is the oldest
9. To ring up, to call up means to...
15. Program parts that make up a computer system
19. The most popular means of communication nowadays

**3. Retell the text**

**4. Guess the meaning of underlined words**

**SWS 5**

**Read the text and make 3 questions.**

**Robot**

A robot is a mechanical or virtual artificial agent. In practice, it is usually an electro-mechanical system which, by its appearance or movements, conveys a sense that it has intent or agency of its own. The word robot can refer to both physical robots and virtual software agents, but the latter are usually referred to as bots. There is no consensus on which machines qualify as robots, but there is general agreement among experts and the public that robots tend to do some or all of the following: move around, operate a mechanical arm, sense and manipulate their environment, and exhibit intelligent behavior, especially behavior which mimics humans or animals.

Stories of artificial helpers and companions and attempts to create them have a long history, but fully autonomous machines only appeared in the 20th century. The first digitally operated and programmable robot, the Animate, was installed in 1961 to lift hot pieces of metal from a die casting machine and stack them.

Today, commercial and industrial robots are in widespread use performing jobs more cheaply or with greater accuracy and reliability than humans. They are also employed for jobs which are too dirty, dangerous or dull to be suitable for humans. Robots are widely used in manufacturing, assembly and packing, transport, earth and space exploration, surgery, weaponry, laboratory research, and mass production of consumer and industrial goods.

**5.SSW with TI**

**Grammar: Adjectives and Adverbs. Comparatives and superlatives forms**

## ONE SYLLABLE ADJECTIVES

Add *-er* for the comparative and *-est* for the superlative. If the adjective has a consonant + single vowel + consonant spelling, the final consonant must be doubled before adding the ending.

<b>Adjective</b>	<b>Comparative</b>	<b>Superlative</b>
tall	taller	tallest
fat	fatter	fattest
big	bigger	biggest
sad	sadder	saddest

## TWO SYLLABLES

Adjectives with two syllables can form the comparative either by adding *-er* or by preceding the adjective with *more*. These adjectives form the superlative either by adding *-est* or by preceding the adjective with *most*. In many cases, both forms are used, although one usage will be more common than the other. If you are not sure whether a two-syllable adjective can take a comparative or superlative ending, play it safe and use *more* and *most* instead. For adjectives ending in *y*, change the *y* to an *i* before adding the ending.

<b>Adjective</b>	<b>Comparative</b>	<b>Superlative</b>
happy	happier	happiest
simple	simpler	simplest
busy	busier	busiest
tilted	more tilted	most tilted
tangled	more tangled	most tangled



## THREE OR MORE SYLLABLES

Adjectives with three or more syllables form the comparative by putting *more* in front of the adjective, and the superlative by putting *most* in front.

Adjective	Comparative	Superlative
important	more important	most important
expensive	more expensive	most expensive

## IRREGULAR COMPARATIVES AND SUPERLATIVES

These very common adjectives have completely irregular comparative and superlative forms.

Adjective	Comparative	Superlative
good	better	best
bad	worse	worst
little	less	least
much	more	most
far	further / farther	furthest / farthest

### Examples

1. Today is the **worst** day I've had in a long time.
2. You play tennis **better** than I do.
3. This is the **least** expensive sweater in the store.
4. This sweater is **less** expensive than that you.
5. I ran pretty **far** yesterday, but I ran even **farther** today.

### Test

#### Choose the right variant

1. The exam was quite easy — \_\_\_\_\_ we expected.  
a) more easy that                      c) easier than  
b) more easy than                      d) easier as
2. The more electricity you use, \_\_\_\_\_.  
a) your bill will be higher  
b) will be higher your bill





machine helps to take the mystery out of computers. Above all, it is the programmer who must realize that the machine is controlled by human beings - and that he is the one who is going to control and direct it.

We know that the machine reacts to a series of electrical impulses that can be represented in binary numbers. This is called machine language, and the central processing unit has been designed to execute instructions given to it in machine language. We also know that all data are translated into binary code before being stored in main storage. It would, however, be very tedious and difficult to write all information in binary code. Most programmers therefore use one or more of the standard programming languages to prepare their programs. These programming languages use a combination of numbers, characters, and other symbols that is more and easier to work with than Machine language.

There are many programming languages. They are known by such names as FORTRAN, COBOL, ALGOL, PL/1, and APL. FORTRAN is used primarily for scientific work, and COBOL is used for most commercial applications. COBOL and FORTRAN are the most common of the programming languages. Of the others, ALGOL and APL are used primarily for scientific work, while PL/1 is employed for general-purpose programming. How does the machine understand instructions in one of these languages if the only language to which the machine can react is machine language? It understands them by means of interpreter, just as an American diplomat at the United Nations communicates with a Chinese diplomat through an interpreter. The interpreter for a computer is a systems program.

The systems programs are part of the software, but they are supplied by the manufacturer of the machine. One of the systems programs is called the compiler. The computer takes each instruction in the programs and translates it into machine language- that is, into a binary equivalent. It is this translated program that activates the millions of switches in the machine during processing. There is a separate compiler for each of the standard programming languages.

### **Ex.1. Answer the questions.**

1. What languages are used for writing instructions for the computer?
2. Where the is FORTRAN is used?
3. What does COBOL stand for?
4. Is ALGOL used for scientific or learning purposes?
5. Basic is used by students, isn't it?
6. When is a program called an application?
7. Where the COBOL is used?
8. Where the ALGOL is used?
9. Where the C is used?
10. WHAT is the name of program?

### **Ex.2. Translate the following phrases combinations looking back at the text:**

- 1) to take the mystery out of computers;
- 2) the nature of the computer;
- 3) a combination of numbers and other symbols

### **Ex.3. Find in the text English equivalents to:**

- 1) курсы программистов (курсы по обучению программированию);

2) наиболее распространенные языки программирования; 3) общаться с помощью переводчика

**Ex. 4. Complete the sentences choosing the suitable variant given in brackets.**

**Translate the sentences.**

1. The reason for studying the binary system is ...(to prepare a program, to design a mainframe, to understand the nature of the computer).
2. The computer is controlled by...(human beings, the software, the programmer).
3. It would be... (pleasant, difficult, tedious) to write all information in... (Programming language, binary code, decimal code).
4. COBOL is used primarily for... (teaching, commercial, scientific) purposes.
5. PL/1 is ...(defined, employed, activated) for ...(general-purpose, scientific, educational) programming.
6. The machine understands instructions in one of the computer languages by means of ...(a systems program, programmer, main storage).
7. The compiler translates the instruction into ...(machine language, English, character).
8. This translated program... (develops, corresponds, activates) the millions of switches in the machine during processing.
9. Every standard programming language has a...(separate, powerful, general) compiler.

**Ex.5. Answer the following questions using clichés given in brackets:**

1. Why do most courses in programming begin with a lesson on the binary code? (I think that...)
2. Why is understanding the binary code important to a programmer? (I am sure that ...).
3. How does the machine work? Does it react to electrical impulses or to the programmer's voice? (As far as I know...)
4. What is the purpose of the central processing unit? (In my opinion...).
5. Why do most programmers use one or more of the standard programming languages to prepare their programs? (I am not certain, but I suppose that...)
6. What do the programming languages use? (I was told that...)
7. What are the main programming languages? (Everybody knows that...)
8. Can you say that a systems program performs the function of an interpreter? (I think you agree with me that...)
9. Is the systems program part of the software? (Yes, that's right, but...)
10. What activates the millions of switches in the machine during processing? (From the text I learned that...)

**SWS 6**

**Read the text and retell**

**COMPUTER SYSTEMS**

A modern computer comprises two basic parts - the hardware and the software. The Hardware comprises the computer and all its peripherals. This includes the monitor, Keyboard, mouse, printer, etc. The software is the 'instructions' to control the functions of the computer. Software is generally stored on magnetic disks, CDs or tapes. Software can be subdivided into 'control' or 'operating system' software. In small modern PCs, the operating system may be 'DOS' (Disk Operating System) or 'Windows'. Software is not inexpensive. All digital computers operate by adding, subtracting, multiplying and dividing numbers at

incredibly high speeds. The architecture or arrangement of a basic computer consists of an input device to feed in the data, a device to hold temporary results until they are

Required (an accumulator), an arithmetic and logic unit to perform calculations, a memory to hold data and the program as required, and an output device to display or print data. A control unit is used to decode instructions from a program to control the arithmetic and memory processes.

Great advances have been made in the storage or memory system of a computer since the invention of the first calculator. Instead of the earlier systems such as magnetic tapes, cores and drums disc storage is used in modern computers. Digital compact discs, invented in 1978 by Philips, are unaffected by dust, scratches and fingerprints and are now widely used because of their high storage capability.

The integrated circuit memory chip consists of many thousands of transistors. It is able to store and extract a given pulse or bit when required. The chip is composed of a number of cells. Each cell contains a byte (a number composed of eight bits). There are two kinds of chips: ROM (Read Only Memory) and RAM (Random Access Memory) chips. They can give out their stored programs when needed. In the case of the ROM, this data is fixed, whereas the RAM chip can be instructed to remember patterns.

Calculations are normally performed by using arithmetic. Two numbers only are used 0 and 1 in binary system instead of 0-10 in the decimal system.

As the computer operates in binary code, for a programming language it is necessary to convert words or instructions into suitable binary codes. As for initial low-level Languages, every action of the computer there has to be described in detail, but with modern high-level languages, a simple instruction can result in complicated actions. To make sure that instructions are presented in a logical order a flow chart is used sometimes to specify the program. A number of programming languages were developed and put into service to make the work of the programmer easier, among them FORTRAN (Formula Translation) for scientific use, COBOL (Common Business Oriented Language) for commercial use and BASIC (Beginners All-Purpose Symbolic Code) for teaching

## 6. SSW with TI

### Grammar: Modal verbs

The modal verbs include *can, must, may, might, will, would, should*. They are used with other verbs to express ability, obligation, possibility, and so on. Below is a list showing the most useful modals and their most common meanings:

Modal	Meaning	Example
can	<i>to express ability</i>	I <i>can</i> speak a little Russian.

can	<i>to request permission</i>	Can I open the window?
may	<i>to express possibility</i>	I <i>may</i> be home late.
may	<i>to request permission</i>	<i>May</i> I sit down, please?
must	<i>to express obligation</i>	I <i>must</i> go now.
must	<i>to express strong belief</i>	She <i>must</i> be over 90 years old.
should	<i>to give advice</i>	You <i>should</i> stop smoking.
would	<i>to request or offer</i>	<i>Would</i> you like a cup of tea?
would	<i>in if-sentences</i>	If I were you, I <i>would</i> say sorry.

Modal verbs are unlike other verbs. They do not change their form (spelling) and they have no infinitive or participle (past/present). The modals *must* and *can* need substitute verbs to express obligation or ability in the different tenses. Here are some examples:

<i>Past simple</i>	Sorry I'm late. I had to finish my math test.
<i>Present perfect</i>	She's had to return to Korea at short notice.
<i>Future</i>	You'll have to work hard if you want to pass the exams.
<i>Infinitive</i>	I don't want to have to go.
<i>Past simple</i>	I couldn't/wasn't able to walk until I was 3 years old.
<i>Present perfect</i>	I haven't been able to solve this problem. Can you help?
<i>Future</i>	I'm not sure if I will be able to come to your party.
<i>Infinitive</i>	I would love to be able to play the piano.

Modals are auxiliary verbs. They do not need an additional auxiliary in negatives or questions. For example: *Must I come?* (~~Do I must come?~~), or: *He shouldn't smoke* (~~He doesn't should smoke~~).

## Modal verbs

### Test

#### Choose the right variant

We \_\_\_\_\_ see the lake from our bedroom window.

- a) are able                      c) must





- b) can as well                      d) might as well
17. She is a very nice person. You \_\_\_\_\_ meet her.
- a) can                                      c) must
- b) are able                              d) have
18. I have not phoned Ann for ages. I \_\_\_\_\_ phone her tonight.
- a) could                                  c) must
- b) can                                      d) have
19. He cannot come out with us this evening. He \_\_\_\_\_ to work.
- a) could
- c) must
- b) has                                      d) might
20. I \_\_\_\_\_ get up early tomorrow, because my train leaves at 7:30.
- a) need                                    c) must
- b) have to                                d) might
21. We do not have much time. We \_\_\_\_\_ hurry.
- a) should to                              c) must
- b) have                                    d) might to
22. When we are in the library, we \_\_\_\_\_ not make any noise.
- a) could                                  c) must
- b) can                                      d) might

## Text 7

### Topical Vocabulary

English	Kazakh	Russian
Category	Санат	Категория
Growth	Өсу	Рост, развитие
General	Жалпы	Общий
Maker	Жеткізуші	Поставщик
Simulate	Моделдеу	Моделировать
Microprocessors	Микропроцессорлар	Микропроцессоры
Manage	Басқару	Управляющий
Number	Сан	Число
Improve	Жетілдіру	Улучшать
Reasonably	Ақылға қонымды	Разумный
Computation	Есептеу	Вычисление
Parallel enabling	Параллельді қосылыс	Параллельное включение
Numerically	Сандық түрде	Численно

Involving	Қатысумен	С привлечением
Simultaneous	Бір уақытта	Одновременный
little parallelism	Аз параллелизм	Маленький параллелизм
Equations	Басқару	Управления
Complexity	Күрделілігі	Сложность
Representing	Өкілдік етеді	Представляющий
Mainly	Негізінен	В основном
Steel rolling mill	Илектеу зауыты	Стальной прокат
Store checkout till	Кассалық аппарат	кассовый аппарат

## Read the text

### TYPES OF COMPUTERS

At present, there are four general categories of computers which vary widely in cost and performance.

*The Supercomputer.* In the first and most expensive category are the ‘super’ computers, such as the GRAY where not only is computation done at very fast speeds, but many computation processes occur in parallel enabling a great amount of work to be done.

These computers are used for tasks where an extremely large number of mathematical equations need to be solved numerically in a reasonably short time, often involving the simultaneous input of large volumes of data; such a task is, for example, weather forecasting.

*The Main Frame.* In the second category are the so-called ‘main frame’ computers; Examples of these are the IBM 3033, Univac 90/30 and ICL 2900. In these machines computations are performed fast but with little parallelism. These machines are used for large little parallelism and other accounting tasks, factory management, financial planning and for scientific and design problems where a large number of equations need to be solved.

*The Minicomputer.* In the third category are the minicomputers; calculations in these machines are still reasonably fast; however, the basic word length is short, typically 32bits, therefore the accuracy of calculation for some purposes has to be improved by using several programming steps. These machines are used in the main1 for tasks of moderate complexity in the accounting, scientific and computer-aided design fields. They are also used for controlling large chemical plants, steel rolling mills2 and other complex continuous processes. Examples of these machines are VAX 750, GEC 4080 and HP 1000.

*The Microcomputer (usually called the PC).* In the fourth category are the Microcomputers; their central processing unit is usually on a single chip. These computers have a wide range of occupations, and today both computers and microprocessors are widely distributed throughout businesses. Microprocessors are the heart of home video games, and are used as the main processing element in many automatic machines, such as store checkout tills3 and industrial robots.

*Computer Aided Design (CAD).* Computer Aided Design means using computers to aid the designer to do his job efficiently; for example, in the electronic industry, computers are used to analyze the parameters of proposed circuits, and translate that design onto a printed circuit board. Computers are widely used in the design of integrated circuits. For mechanical design, computers are used for mathematical representing of solid

objects allowing to evaluate such properties as mass, centre of gravity, etc. They can also be used to analyze stresses in components and assemblies; for example, bridges, aircraft components and structures.

**Ex.1. Answer the questions.**

1. How many types computer are there?
2. What are the Classes of Computers?
3. How many type of computer cables are there?
4. What type of computer do programmers most commonly use?
5. How many types of encoders are there?
6. How many types of ware are in a computer?
7. What are the three types of computer?
8. How many types of computer ports are there and what are they used for?

**Ex.2. Translate the following word combinations looking back at the text:**

1) many processes occur in parallel; 2) complex continuous processes; 3) a wide range of occupations; 4) are widely distributed throughout businesses; 5) proposed circuit

**Ex.3. Find in the text English equivalents to:**

1) необходимо решить; 2) так называемый; 3) прогноз погоды; 4) точность  
Расчетов

**Ex.4. Translate the following sentences from Russian into English using the Synonyms of the exercise IV.**

1. Современные компьютеры значительно отличаются от вычислительных машин, спроектированных 300 лет назад. 2. Использование компьютеров позволяет улучшить многие технологические процессы. 3. Я не думаю, что это задача средней сложности. Поэтому помогите мне, пожалуйста. 4. Чтобы провести это научное исследование, вы должны привлечь различные научные источники (sources). 5. Какова цель вашего визита? 6. Эти компьютеры могут выполнять различные задачи. 7. Я не буду подписывать этот документ - это только проект! 8. Современные технологии позволяют изменить нашу повседневную жизнь - то, как мы учимся, работаем, проводим научные исследования. 9. Чем вы занимаетесь? (Где вы работаете?) 10. Internet - это всемирная компьютерная сеть, которая включает миллионы пользователей во всем мире.

**Ex.5. Put questions to the underlined words in the following sentences:**

1. At present, there are four general categories of computers which vary widely in cost and performance. 2. Many computation processes occur in parallel enabling a great amount of work to be done. 3. In the fourth category are the microcomputers; their central processing unit is usually on a single chip. 4. Today both computers and microprocessors are widely distributed throughout businesses. 5. Microprocessors are used as the main processing element in many automatic machines. 6. Computer Aided Design means using computers to aid the designer to do his job efficiently.

**Ex.6. Translate the sentences from English into Russian.**

1. Spain taught me things about myself I had never suspected.
2. My wedding was bought in a little shop in Bath.

3. My parents' home was the nicest place I've ever lived in.
  4. The airport in Memphis was going to Italy to collect a tiger for a zoo.
  5. My little cousin Pam had crazy plans for an expedition to the North Pole.
- A very ordinary-looking woman I met in;  
 A man I met by chance on a business trip to;  
 Some Polish people I was introduced to by;  
 The dress my sister wore to;  
 The little flat I rented just after I left

**Ex.7. Look back at the text and write out all the terms connected with Computer Science. How many are there?**

**Ex.8. Tell about each type of computers using the schemes given below:**

*I. The Supercomputer: II. The Main Frame:*

- a) The most expensive computation; a) computation - fast;
- b) Computation - at very fast speed; b) little parallelism
- c) Computation process - parallel; c) payrolls and other accounting tasks;
- d) The simultaneous input of large d) to solve a large number of equations volumes of data;
- e) Weather forecasting

*III. The Minicomputer: IV. The Microcomputer*

- a) Calculation - fast; a) personal computers;
- b) The basic word length; b) on a single chip;
- c) The accuracy has to be improved; c) a wide range of occupations;
- d) Tasks of moderate complexity; d) as the main processing element;
- e) computer-aided design; e) home video games

## 7. SSW with TI

### Grammar: The Passive voice

*Be + -ed*

The most common passive structure is *be + -ed* form:

*Five million people **watch** the show every week.* (active present simple of *watch*)

*The show **is watched** by five million people every week.* (passive present simple of *be + -ed* form of *watch*)

АНГЛО The table gives examples of the most common forms in the passive.-o

tense	<i>be</i> form		examples
present simple	<i>am</i> <i>are</i> <i>is</i>		<i>Am I invited too?</i> <i>One or two new types of insect <b>are found</b> in Britain each year.</i> <i>It's not <b>made</b> in China.</i>
present continuous	<i>am</i> <i>are</i>	<i>being</i>	<i>Am I being recorded?</i> <i>We're already <b>being served</b>, thanks.</i>

tense	be form		examples
	<i>is</i>		<i>That computer <b>isn't being used</b> any more.</i>
past simple	<i>was</i> <i>were</i>		<i>The story <b>was reported</b> in yesterday's paper.</i> <i>We <b>didn't know</b> what was in the boxes.</i> <i>They <b>weren't labelled</b>.</i>
past continuous	<i>was</i> <i>were</i>	<i>being</i>	<i><b>Was he being examined?</b></i> <i>They <b>were being watched</b> carefully.</i>
present perfect simple	<i>have</i> <i>has</i>	<i>been</i>	<i><b>Haven't they been asked</b> to the wedding?</i> <i>He's <b>been hurt</b>.</i>
past perfect simple	<i>had</i>	<i>been</i>	<i>An important discovery <b>had been made</b>.</i> <i><b>Had he been injured</b> in the war?</i>
modal simple	<i>can</i> <i>will</i> <i>might</i>	<i>be</i>	<i>Reservations <b>can be accepted</b> up to 24 hours before arrival.</i> <i>I don't think I'll ever <b>be paid</b>.</i> <i><b>Might we not be allowed</b> to go in?</i>
modal continuous	<i>could</i> <i>may</i> <i>must</i>	<i>be being</i>	<i>She <b>couldn't still be being interviewed</b>.</i> <i>The photocopier <b>may be being repaired</b>.</i> <i>It <b>must be being done</b> now.</i>
modal perfect simple	<i>could</i> <i>must</i>	<i>have been</i>	<i>Do you think we <b>could have been heard</b>?</i> <i>The document <b>must have been</b></i>

**Exercises 1. Complete the text with the verbs in brackets in the correct tense, active or passive.**

Nylon (1) \_\_\_\_\_ (invent) in the the early 1930s by an American chemist, Julian Hill. Other scientists (2) \_\_\_\_\_ (work) with his intention and finally on 27 October 1938, Nylon (3) \_\_\_\_\_ (introduce) to the world. It was cheap and strong and immediately (4) \_\_\_\_\_ (become) successful, especially in the making of women`s stockings. During the Second World War, the best present for many women was a pair of nylon stockings, but more importantly, nylon (5) \_\_\_\_\_ (use) to make parachutes and tyres. Today, nylon (6) \_\_\_\_\_ (find) in many things: carpets, ropes, seat belts, furniture, computers, and even spare parts for the human body. It (7) \_\_\_\_\_ (play) an important part in our lives for over 50 years. Next year about 36 million tons of it (8) \_\_\_\_\_ (manufacture)

## Passive Voice

### Test

Choose the right variant

- English is the main foreign language which \_\_\_\_\_ within most school systems.
  - teach
  - is taught
  - teaches
  - is teaching
- On festive occasions sweets \_\_\_\_\_ at the end of a meal.
  - are served
  - is served
  - is being served
  - served
- If the vegetable we \_\_\_\_\_ is very soft a crunchy relish
  - are serving, may be added
  - are served, may be added
  - is serving, may be added
  - may be served, added
- In India the right hand \_\_\_\_\_ for eating.
  - used
  - uses
  - is used
  - is being used
- Needless to say, hands \_\_\_\_\_ before and after eating.
  - must wash
  - must be washing
  - wash
  - must be washed
- Some of the rice \_\_\_\_\_ plain to enable us to eat it with other dishes.
  - is left
  - left
  - is leaving
  - is being left
- I haven't got a large appetite and when I \_\_\_\_\_ my favourite food, I leave half of it on the plate.
  - was given
  - gave
  - have given
  - am given
- My father \_\_\_\_\_ that roast meat is not healthy.
  - persuaded
  - has been persuaded
  - has persuaded
  - persuades
- She stood in the shadows of the jungle, knowing that she \_\_\_\_\_ by the Indians.
  - must follow
  - must have followed
  - must have been followed
  - followed
- She thought the arrow \_\_\_\_\_ poisoned.
  - is
  - can be

b) may be                                      d) could be

11. He knew the boys \_\_\_\_\_ rescued.

a) would be                                      c) are

b) have been                                      d) 'll be

12. Japan \_\_\_\_\_ up of a chain of more than one thousand islands.

a) make    c) is making

b) is made    d) makes

13. Japan \_\_\_\_\_ from Korea by the Sea of Japan.

a) is separated                                      c) separated

b) separates                                        d) is separating

14. Japan has a large number of volcanoes, sixty-seven of which \_\_\_\_\_ active.

a) consider                                        c) were considered

b) considered                                        d) are considered

15. Now girls are not embarrassed \_\_\_\_\_ smoking.

a) to see    c) to be seen

b) seeing     d) have been seen

16. Research devoted to the differences between men and women \_\_\_\_\_ discouraged by feminists for a long time.

a) are    b) have been

c) has been                                        d) were

17. Feminists feared that such research \_\_\_\_\_ to justify sex discrimination.

a) may be used                                      c) can be used

b) might be used                                    d) should be used

18. An area of rainforest the size of Austria \_\_\_\_\_ every year.

a) is being destroyed                              c) destroyed

b) destroys                                        d) destroying

19. Who knows what as yet undiscovered weapons against cancer or AIDS \_\_\_\_\_ by the destruction of the rainforests?

a) ruin    c) are ruined

b) ruined     d) are being ruined

20. Do you know how many paintings \_\_\_\_\_ by vandals?

a) are destroyed                                      c) have been destroyed

b) are being destroyed                              d) are destroying

21. Suddenly he thought that something \_\_\_\_\_ of him.

a) expected                                        c) is expected

b) was expected                                      d) has been expected

22. A lot of jazz festivals \_\_\_\_\_ every year in America.

a) are held                                         c) are holding

b) hold    d) held

## TEXT 8

### Topical Vocabulary

English	Kazakh	Russian
Railway	Шойын жол	Железная дорога
Influencing	Әсер ету	Влияние
Revolution.	Неволюция	Революция
Capture	Ұстап алу	Захватить, поймать
Provide	Қамтамасыз еу	Обеспечивать
Analysis	Талдау	Анализ
Phenomenal	Феноменалдық	Феноменальный
Educate	Оқыту	Обучать
Entertain	Көңіл көтеру	Развлекать

### Read and translate the text

#### INFORMATION TECHNOLOGY

The definition of information technology (IT) is as follows: the use of technology to provide the capture, retrieval, analysis and communication of information, which can be done either in the form of data, text, image or voice.

With the invention and exploitation of the integrated circuit or 'chip' since the 1960s, the growth of applications using electronics has been phenomenal. Modern electronic computers can process data, graphics and speech at extremely fast rates. The microprocessor is at the heart of what is known as the IT revolution.

Information and communications technologies are changing the way we work, study, do research, and educate our children and ourselves. They are influencing the way we do our banking, pay our bills, entertain ourselves and do business. New options (choices) are being provided for us in the field of health care, education, environmental protection, culture, and business. Computers control washing machines, cookers, televisions, telephones, home computers, cameras, video games, digital watches and many other devices.

Offices and factories now use microprocessors in the everyday life, as do cars, fax machines, aircraft fly control, railway signaling, police computer databases, etc. The aim of the IT revolution has been to transform labour-intensive work, such as mining, agriculture, iron, steel and cotton industries, hardware manufacturing, etc., into an industry where a few highly-skilled workers manage large factories with mainly automated labour. The influence of the Multimedia is part of the IT revolution. The change from analogue to digital television made it possible to develop special effects, such as the original full screen television image which could be shrunk (уменьшить) to occupy a small portion of the screen.

Compact discs can record complete encyclopedias, as well as provide sound and pictures. The impact of this information revolution on our society cannot yet be fully measured or predicted at this time. The combination of new and rapidly developing interactive multimedia computers and applications with electronic networks will require a restructuring of our traditional approach to strategic planning and organizational structure.



It also means a considerable (great) change in the way we interact with each other, with business and with government.

**Ex.1. Translate the following word combinations looking back at the text:**

washing machine; labour-intensive work; full screen television image; interactive multimedia computers; health care; environmental protection; railway signaling; police computer databases

**Ex.2. Translate the following sentences from Russian into English using the Synonyms of the exercise IV.**

1. Современные компьютеры значительно отличаются от вычислительных машин, спроектированных 300 лет назад. 2. Использование компьютеров позволяет улучшить многие технологические процессы. 3. Я не думаю, что это задача средней сложности. Поэтому помогите мне, пожалуйста. 4. Чтобы провести это научное исследование, вы должны привлечь различные научные источники (sources). 5. Какова цель вашего визита? 6. Эти компьютеры могут выполнять различные задачи. 7. Я не буду подписывать этот документ - это только проект! 8. Современные технологии позволяют изменить нашу повседневную жизнь - то, как мы учимся, работаем, проводим научные исследования. 9. Чем вы занимаетесь? (Где вы работаете?) 10. Internet - это всемирная компьютерная сеть, которая включает миллионы пользователей во всем мире.

**Ex.3. Translate the following sentences paying attention to the forms of predicate.**

1. Luggage is being brought down 2. New guests were being welcomed. 3. There's Somebody behind us. I think we're being followed. 4. Ann can't use her office at the moment. It's being redecorated at the moment. 5. A lot of work is being done by the students. 6. The runways are being lengthened at all the main airports. 7. It is now 6 a.m. and at most of the hospitals in the country patients are being awakened with cups of tea. 8. The house where the dead man was found is being guarded by the police to prevent it from being entered. 9. It is being said that too little money is being spent by the government on roads. 10. Your money could be put to good use instead of being left idle in the bank. 11. The referee was being escorted from the football field by a strong police guard.

**Ex. 4. Match the line A with the line B. Translate the sentences.**

**A B**

1. Modern electronic computers can....
2. Computers control ...
3. The microprocessor is at the heart of...
4. Compact disks can ... educate our children and ourselves
5. Information and communication.
6. The influence of the Multimedia is... cameras, etc

- a) record complete encyclopedias.
- b) Information Technology revolution.
- c) process data, graphics and speech.
- d) the way we work, study, do research

- e) part of the TV revolution. technologies are changing...
- f) washing machines, television, telephones,

**Ex. 5. Answer the followings questions to the text. Retell the text using your answers.**

1. What is Information Technology?
2. When was the integrated circuit invented?
3. What can modern electronic computers do?
4. What is the heart of the Information Technology revolution?
5. In what way (how) are information and communication technologies changing our life?
6. In what fields are information and communication technologies used nowadays?
7. What is the aim of the Information Technology revolution?
8. What was the result of the change from analogue to digital television?
9. Is it possible to record large books on compact disks?

## **SWS 8**

### **Read the text and retell**

#### **Traceability**

Software development process starts with an initial artifact, such as customer statement of work, and ends with source code. As the development progresses, being able to trace the links among successive artifacts is key. If you do not make explicit how an entity in the current phase evolved from a previous-phase entity, then it is unclear what was the purpose of doing all that previous work. Lack of traceability renders the past creations irrelevant and we might as well have started with this phase. It makes it difficult for testers to show that the system complies with its requirements and maintainers to assess the impact of

a change. Therefore, it is essential that a precise link is made from use cases back to requirements, from design diagrams back to use cases, and from source code back to design diagrams.

Traceability refers to the property of a software artifact, such as a use case or a class, of being traceable to the original requirement. Traceability must be maintained across the lifecycle. Maintaining traceability involves recording, structuring, linking, grouping, and maintaining dependencies between requirements and other software artifacts.

**1. Make up your own 10 questions according to this text.**

**2. Give the correct form of the adverb in brackets:**

1) You'll understand it (soon) or (late). 2) I liked the red dress (well) of all. 3) Which of you live (far) from the school? 4) My sister comes to see our mother as (frequently) as I do. 5) His new car runs much (fast) than mine. 6) Working with children you should speak (slowly). 7) She wrote the last test no so (badly) as the rest. 8) During the examination session students have to work (hard) than during the term. 9) Tomorrow I'll have to get up (early) than usual. 10) The (soon) you go to see a doctor the (well).

## **8. SSW with TI**

### **Grammar: Complex Object**

Subject + Predicate + Complex Object (Noun/Pronoun + Infinitive)

The combination of a noun in the common case or a pronoun in the objective case and an infinitive used after the predicate forms a complex object. The relation between the noun (pronoun) and the infinitive is that of subject and predicate.

I saw the boy raise his hand.

I heard him call my name.

I want you to know that it doesn't matter.

The infinitive may be used as a part of a complex object after the following verbs:

1. to hear, to see, to watch, to feel, to let, to make. After these verbs the infinitive has no particle 'to'.

Patterns. Read and memorize!

I heard him describe his new bedroom suite.

He makes his children go to bed early.

I saw him whitewash the fence.

2. To want, to expect, to know, to suppose, to consider, to believe. After these verbs the particle 'to' is used before the infinitive.

Patterns. Read and memorize!

He wanted me to help him choose a new computer.

I consider Bill to be Jack of all trades.

I expected him to paint the walls green.

Complex Object is a construction consists of noun in a common case or pronoun in an objective case and infinitive or gerund

Remember: pronouns in object case I- me ,he- him, it-it, they – them, you- you, she- her ,we- us

F.e: I want my granny to take me to the circus.

They expected him to be caught by the police.

We noticed the woman enter the house through the back door

We use Infinitive with particle to in Complex Object

### Exercise 1

Make up as many sentences as you can using the words and word-groups from each column of the substitution table. Pay attention that after verbs 'to see, to hear, to feel, to let, to make, etc...' the infinitive has no particle 'to' .

1) With the verb 'to see'

We	see(s)	them	move to a summer cottage.
He	saw	a bricklayer	lay a brick house.
Everybody		my friend	enter a two-storey house.
		a boy	draw a skyscraper.
		the landlady	speak to her lodger.
			pull down a house.

2) with the verb 'to hear'

I	hear(s)	my friend	ring the bell.
We	heard	them	praise my two-room flat.
He		a guest	speak to the hostess.
They		the hostess	welcome her guests.
		our teacher	tell his friend of the rest-home.
			read a play.

### Exercise2

Practice in using Complex Object after 'make'. Change the sentences according to the model.

Model:

A: His mother advised him to write a story.

B: His mother made him write a story.

His father advised him to quit smoking.

His brother advised him to get a new job.

Mary's teacher advised her to take part in the writing contest.

Her parents advised her to move to Chicago.

### Exercise3

Practice sentences with Complex Object after the verb 'want'. Say that you (he, she, they, etc.) want somebody to do the following.

Model:

A: I want to be introduced to Mr. Laurie. (the host)

B: I want the host to introduce me to Mr. Laurie.

The patient wanted to be examined. (the doctor)

The man wants to be treated for rheumatism. (Doctor House)

He wished to be cured of his illness. (the specialist)

Usually English people don't like to be asked personal questions. (strangers)

## Text 9

### Topical Vocabulary

English	Kazakh	Russian
Visible	Көзге көрінбейтін	Невидимый
Solve	Шешу(проблеманы)	Решать
Refer	Қатысы болу	Относиться
Cause	Себеп	Причина
Instead	Орнына	Вместо
Require	Талап ету	Требовать
Particularly	Әсіресе	Особенно
Memory	Жады	Память
Move	Қозғау	Движение
Hardware	Жабдық	Аппаратные средства
Software	Бағдарламалық қамтамасыз ету	Программное обеспечение
Firmware	Микробағдарлама	Прошивка

### Read the text and retell

#### **HARDWARE, SOFTWARE, AND FIRMWARE**

The units that are visible in any computer are the physical components of a data processing system, or *hardware*. Thus, the input, storage, processing and control devices are hardware. Not visible is the *software* — the set of computer programs, procedures, and associated documentation that make possible the effective operation of the computer system. Software programs are of two types: systems software and applications software.

*Systems software* is the programs designed to control the operation of a computer system. They do not solve specific problems. They are written to assist people in the use of the computer system by performing tasks, such as controlling all of the operations required, to move data into and out of a computer and all of the steps in executing an application program. The person who prepares systems software is referred to as a systems programmer. Systems programmers are highly trained specialists and important members of the architectural team.

*Applications software* is the programs written to solve specific problems (applications), such as payroll, inventory control, and investment analysis. The word program usually refers to an application program, and the word programmer is usually a person who prepares applications software.

Often programs, particularly systems software, are stored in an area of memory not used for applications software. These protected programs are stored in an area of memory called read only memory (ROM), which can be read from but not written on.

*Firmware* is a term that is commonly used to describe certain programs that are stored in ROM. Firmware often refers to a sequence of instructions (software) that is substituted for hardware. For example, in an instance where cost is more important than performance, the computer system architect might decide not to use special electronic circuits (hardware) to multiply two numbers, but instead write instructions (software) to cause the machine to accomplish the same function by repeated use of circuits already designed to perform addition.

**Ex. 1. Answer the following questions using the text:**

- 1) What is hardware?
- 2) Give the definition of software?
- 3) What are the types of software?
- 4) What is systems software?
- 5) What kind of tasks does systems software perform?
- 6) Who prepares systems software?
- 7) What is applications software?
- 8) What problems does applications software solve?
- 9) What is firmware?
- 10) How can a computer system architect use firmware?

**Ex. 2. Find in the text the equivalents of these word combinations:**

Видимые устройства; система обработки данных; аппаратное обеспечение; набор компьютерных программ; соответствующая документация; эффективная работа; системное программное обеспечение; прикладное программное обеспечение; системный программист; платежная ведомость; переучет; анализ инвестиций; прикладная программа; работающий только в режиме чтения; постоянное запоминающее устройство; последовательность команд; в случае; производительность; электронная цепь; умножать числа; заставить машину выполнять ту же функцию; выполнять сложение.

**Ex. 3. Remember the new lexical words and try to translate these word combinations.**

*Architecture:* communication architecture; computer architecture; disk architecture; microprocessor architecture; network architecture; security architecture; system architecture; virtual architecture.

*Software:* system software; application software; database software; disk software; educational software; game software; management software; simulation software.

**SWS 9 Read the text and retell**

**Automation**

Automation (ancient Greek: = self dictated), robotization or industrial automation or numerical control is the use of control systems such as computers to control industrial machinery and processes, reducing the need for human intervention. In the scope of

industrialization, automation is a step beyond mechanization. Whereas mechanization provided human operators with machinery to assist them with the physical requirements of work, automation greatly reduces the need for human sensory and mental requirements as well. Processes and systems can also be automated.

Automation plays an increasingly important role in the global economy and in daily experience. Engineers strive to combine automated devices with mathematical and organizational tools to create complex systems for a rapidly expanding range of applications and human activities.

Many roles for humans in industrial processes presently lie beyond the scope of automation. Human-level pattern recognition, language recognition, and language production ability are well beyond the capabilities of modern mechanical and computer systems. Tasks requiring subjective assessment or synthesis of complex sensory data, such as scents and sounds, as well as high-level tasks such as strategic planning, currently require human expertise. In many cases, the use of humans is more cost-effective than mechanical approaches even where automation of industrial tasks is possible.

## 9.SSW withTI

### Grammar: «Prepositions», Conjunctions

#### Prepositions At / on / in (time)

Preposition	Usage	Example
<b>On</b>	• Days of the week	<i>On Monday</i>
	• Calendar dates	<i>On 17<sup>th</sup>/on 17<sup>th</sup> May/on 17<sup>th</sup>May 2012</i>
	• Special days	<i>On my birthday /on my wedding anniversary</i>
<b>In</b>	• Months/Seasons	<i>In January/in winter</i>
	• Year/Decade	<i>In 2012/in the 1950s</i>
	• Period of the day	<i>In the morning/afternoon/evening</i>
	• After a certain period (when)	<i>In two hours/ in a few minutes (literally-two hours/a few minutes from now)</i>
<b>At</b>	• Night	<i>At night, we... (not 'in the night')</i>
	• Weekend	<i>At weekends, I normally...('on weekends' is also correct)</i>
	• A precise time	<i>The staff meeting is at 9:30</i>
<b>Before / Prior to</b>	• Earlier than this point	<i>Before/prior to this policy, no such mechanism existed</i>
<b>(From...) to</b>	• Marking a period of time	<i>From Monday to Wednesday</i>
	• Telling the time	<i>Twenty (minutes) to five</i>
<b>Till/until</b>	• Marking a period of time	<i>From Monday till /until Wednesday</i>
	• Marking How long	<i>We are working on this till/until June</i>
<b>Since</b>	• From then to now	<i>I've been working here since 2004 (= for six years)</i>
<b>By</b>	• At the latest	<i>I will finish it by Monday</i>
	• Up to this point	<i>By December 2011, we had completed half</i>
<b>During</b>	• Through the whole of a period of time	<i>Danny read five books during the Easter break.</i>
<b>For</b>	• Over this period of time	<i>The project was for four years</i>
<b>Past</b>	• Telling the time	<i>Half past eight</i>
<b>Ago</b>	• At this past point	<i>It started three year ago(= in 2009)</i>

**Ex1. Put the preposition if necessary from the box.**

**Between, for, in, by, of, to**

Budget helps to aid the planning \_\_\_ actual operations \_\_\_ forcing managers \_\_\_ consider how the conditions might change and what steps should be taken now and \_\_\_ encouraging managers \_\_\_ consider problems before they arise. It also helps co-ordinate the activities \_\_\_ the organization \_\_\_ compelling managers \_\_\_ examine relationships \_\_\_ their own operation and those \_\_\_ other departments.

A budget is a quantitative expression \_\_\_ a plan \_\_\_ a defined period \_\_\_ time. It may include planned sales volumes and revenues, resource quantities, costs and expenses, assets, liabilities and cash flows. It expresses strategic plans \_\_\_ business units, organizations, activities or events \_\_\_ measurable

**TEST**

**Choose the right variant**

1. She was jealous \_\_\_\_\_ her friend because she had a better dress.  
a) at c) of  
b) on d) to
2. The waste paper bin is full \_\_\_\_\_ crumpled sheets of paper.  
a) with c) to  
b) for d) of
3. The computer is capable \_\_\_\_\_ producing graphics.  
a) to c) for  
b) of d) in
4. Moscow is especially famous \_\_\_\_\_ its elegant architecture.  
a) for c) with  
b) of d) at
5. I felt very ashamed \_\_\_\_\_ making such a stupid mistake.  
a) of c) at  
b) for d) to
6. Could you add this up for me? I'm not very quick \_\_\_\_\_ calculating.  
a) with c) at  
b) in d) on
7. After days of preparation the hall is ready \_\_\_\_\_ the grand opening.  
a) on c) at  
b) to d) for
8. Who is responsible \_\_\_\_\_ making such a mess?  
a) for c) with  
b) of d) at
9. She was very proud \_\_\_\_\_ his achievements.  
a) for c) with  
b) of d) at
10. It took some time to get accustomed \_\_\_\_\_ driving on the left.  
a) at c) to  
b) with d) for
11. We always eat food typical \_\_\_\_\_ the region we are travelling in.  
a) for c) at  
b) on d) of
12. Are you aware \_\_\_\_\_ any reason why he is late?  
a) with c) for  
b) about d) of
13. She went out to work not to be dependent \_\_\_\_\_ her husband.  
a) on c) with  
b) at d) for
14. She never goes out at night because she is afraid \_\_\_\_\_ the dark.  
a) at c) of



- b) to  
15. Because of the flu many teachers were absent\_\_\_\_\_ work.  
a) of  
b) from  
16.1 feel really sorry\_\_\_\_\_her because she has fallen ill.  
a) about  
b) with  
17. She isn't satisfied\_\_\_\_\_her progress in English.  
a) of  
b) with  
a) for  
b) with  
22. This incident is very similar\_\_\_\_\_what happened yesterday.  
a) with  
b) to  
23. The teacher got tired\_\_\_\_\_hearing the same old excuses.  
a) of  
b) from  
24. I am suspicious\_\_\_\_\_those people who always ask questions.  
a) in  
b) of  
25. My sister is very keen\_\_\_\_\_fashion.  
a) of  
b) with

d) for

c) for  
d) at

c) of  
d) for

c) from  
d) at

c) in  
d) of

c) in  
d) of

c) at  
d) with

c) from  
d) at

c) on  
d) at

18. My sister is better\_\_\_\_\_sport than me.

a) at  
b) in  
c) of  
d) with

19.1 must hurry or I'll be late\_\_\_\_\_school.

a) at  
b)in  
c) for  
d)to

20. He was found guilty\_\_\_\_\_robbing the bank.

a) of  
b) for  
c) with  
d) at

21.1 am short\_\_\_\_\_money at the moment.

## Text 10

### Topical Vocabulary

English	Kazakh	Russian
Discipline	Пән	Дисциплина
Between	Ортасында	Между
Primary	Алғашқы	Начальный
Activity	Белсенділік	Активность
Software	Бағдарламалық қамтамасыз ету	Программное обеспечение
Principles	Принциптер	Принципы
Information systems	Ақпараттық жүйелер	Информационные системы
Value	Құн	Ценность
Approached	Жақындап қалу	Приближаться
Guidelines	Нұсқаулық	Методические рекомендации

legislative action	Заңнамалық актілер	Законодательные действия
Conceives	Ойлау	Думать
Implications	Салдары	Последствия

### 1. Read the text and retell

#### SOFTWARE ENGINEERING ETHICS

Software engineering ethics can be approached from three directions. First, it can describe the activity of software engineers making practical choices that affect other people in significant ways. Second, it can be used to describe a collection of principles, guidelines, or ethical imperatives that guide or legislative action, and third, it can be used to name a discipline that studies the relationship between the other two of ethics.

Software engineering ethics is clearly both an activity and a body of principles. The discipline of software engineering ethics that studies this activity and formalizes these principles, however, is in its infancy.

#### Software Engineering Ethical Activity

To avoid confusion, “ethics”, as understood here, addresses any intentional action that impacts negatively or positively the lives and values of others. Software engineering conceives of itself primarily as a technical discipline that develops software. There are a variety of names, such as information systems analyst, for those who engage in professional software development. Regardless of the title used, the focus of software engineering activity is primarily on the technical adequacy of the products developed. But the fact that roughly one billion people depend on software systems to effectively conduct their daily lives (Reed, 2000) has led many in computing to give more attention to the nontechnical aspects and to wrestle with the ethical impact of their daily decisions and the values imbedded therein.

The relationship between computers and ethics can be described as occurring when humans make decisions about computers, and those decisions affect people's lives. Human values are linked to technical decisions in this way. The activity of Professional Software Engineering Ethics takes place when any decision made by computing professionals during the design, development, construction and maintenance of computing artifacts affect other people. These decisions may be made by individuals, teams, management, or the profession. The software engineering decision how to design the release of an airbag will affect the lives of others. This technical decision is also guided by an ethical decision about human values. Barry Boehm (1981) begins his work on software engineering economics with an anecdote about how the failure to consider human values affected the development of software for a high school attendance system. His work on this project led him to see that software engineers have "... an opportunity to make a significant positive impact on society, simply by becoming more sensitive to the long-term human relations implications of our work and incorporating this sensitivity into our software designs and products." (Boehm, 1981)

### 2. Guess the meaning of the underlined words.

#### 3. Define true and false sentences:

- People are not interested in getting information quickly.
- With the help of Internet you can make it easily.

- (c) The communication ways at that time were not only vulnerable to attack, they would be also probably the first to go.
- (d) In 1994 Paul Baran connected 4 computers in different parts of the USA and posted a message.
- (e) You could destroy the Internet if some computers will be broken down.
- (f) Nobody owns the Internet, and no organization controls its use.
- (g) In future no techniques will be connected to the Internet.

**4. Answer the following questions:**

- (a) What is Internet for?
- (b) What do you know about the history of Internet?
- (c) Who owns Internet?
- (d) No organization controls Internet's use, does it?
- (e) Who and when posted the first message?
- (f) How many channels does Internet already deliver?
- (g) In future all will be connected to Internet, won't they?
- (h) What techniques can already be connected to Internet?

**5. Ask your partner questions about:**

(a) communication ways; (b) the help of Internet; (c) the history of Internet; (d) modem connection; (e) connection to the entire world; (f) the future of Internet.

**SWS10**

**Read and translate the text**

**Computers in our life**

When Charles Babbage, a professor of Mathematics at Cambridge University, invented the first calculating machine in 1812 he couldn't imagine the situation we find ourselves in today. Nearly everything we do in the world is helped, or even controlled by computers, the complicated descendants of his simple machine. Computers are used more and more often in the world today, for the simple reason that they are far more efficient than human beings. They have much better memories and they can store much information. No man alive can do 500.000 sums in one second, but a computer can. In fact, computers can do many of the things we do, but faster and better. They can predict weather, and even play chess, write poetry or compose music.

**10. SSW with TI**

**Grammar: Pronouns**

**Personal pronouns**

Nominative case	Objective case
I	Me
You	You
He	Him
She	Her
It	It

We	Us
They	Them

He works in my office.  
 I know him well.  
 “Who is this?”- “Its me”  
 “It is I who did it”

**Possessive Pronouns.**

I	My	Mine
You	Your	Yours
He	His	His
She	Her	Hers
It	Its	Its
We	Our	Ours
They	Their	Theirs

I am walking with my brother.  
 The hen is sitting on its nest  
 They have lost their mittens

My pen is broken. Give me yours.

Marina doesn't like her friend's dog. She  
 thinks hers is better

**Reflexive Pronouns**

Sing -self	Plural-selves
Myself	Ourselves
Yourself	Yourselves
Himself	Themselves
Herself	
Itself	
Oneself	

He painted the room himself  
 I bought it myself.

To find oneself, to hurt oneself , to hide oneself, to cut oneself,, to enjoy oneself, to wash oneself, to have oneself, to amuse oneself.  
 But ! I feel bad. He behaved like a child. (without oneself)

**Demonstrative Pronouns**

Singular	Plural
This	These
That	Those

This book is mine.

That tree is very beautiful.

There is no sugar here. Or There isn't any sugar here.

Much is used with uncountable nouns. Much snow

It's not good to eat many cakes. Has he got much work to do?

A lot of, lots of, plenty of, a great many, a good many are used in affirmative sentences instead of many. She has got a lot of pencils.

A lot of, lots of, plenty of, a good deal of, a great deal of many are used in affirmative sentences instead of much. Don't hurry. There's plenty of time.

Little, a little, few, a few.

Little, a little are used with uncountable nouns. A little= some but not much, a positive idea.

I speak a little German.( some German but not much)

Little (without a) = nearly nothing, a negative idea. There was little food in the fridge. It was nearly empty.

Few, a few are used with countable nouns. A few = some but not many, a positive idea. I've got a few friends, so I'm not lonely.( = I've got some friends)

Few (without a) =nearly no..., a negative idea. I'm sad and I'm lonely. I've got few friends. (= nearly no friends)

All

All is used with countable and uncountable nouns. All liked to draw. He is reading all the time.

All is used in combinations: All of them, all the, all my( your, his, her, its, our, their), all this ( these, that, those). All of my friends are boxers.

Both

We use both to talk about two things or people. Marina has two children. Both are married. (Both = the two children)

Both is used in combinations: both the, both my ( your, his, her, its, our, their), both these, both those. Both the boy and his mother were very happy.

Either, neither.

We use either, neither to talk about two things or people. Either= ( each of the two= both) I don't believe that either of these horses has won the race.( и тот и другой) Either = ( one of another) (любой) You can go by either road.

Neither is opposite of either and both. Neither test is satisfactory.( ни тот ни другой). Neither of you is very skillful.

Either ...or = ( or ...or или ...или) He is either in university or in college.

Neither...nor = (not ...not ни ...ни) Neither Anar nor Nurlan came to the meeting.

Each, every.

We use every + singular noun.( every house, every country) We use every when we think of things as a group. The meaning is similar to all

Use a singular verb after everybody, everyone, and everything. Everybody has problems.

We use each when we think of things separately, one by one. Study each sentence carefully. (= study the sentence one by one) Each other = (друг друга) they often meet each other in the corridor.

Other, another.

Other, another are used for nouns and adjectives.

Another (an + other) has two meanings: different and one more. One animal may like it, and another may dislike it. Would you like another cup of tea?

Another + singular noun. I want another horse.

Other+ singular noun. She lives on the other side of the street.

Other + plural noun .I'll have to go and buy other apples. Yours are bad.

When other stand for a noun, it can be used in the plural. That may be your opinion, but others think differently.

The other (definite). Will you show me the other hat?

Another (indefinite). Will you show me another hat?

One, ones.

One is used instead of repeating a singular countable noun when it is clear from the context what we are talking about. Is this your umbrella?- No, mine is the blue one (= umbrella)

Ones can be used instead of repeating a plural noun. I think his best poems are his early ones. (= poems)

Interrogative and Connective pronouns.

Who, whom, whose, what, which- interrogative pronouns. Who is talking? Whom did you see there? Who are you laughing at? Who are you talking about? Who doesn't know the rules? Who are these people?

What is there under the bed? What is this man? What are you thinking about? What are you looking at? What beautiful music they are playing!

What is for persons or things in general? What people live there? Which is for a limited number of persons or things? Which piece of cake is yours? Whose flat are you looking for?

Who, whom, whose, what, which, that, as- connective pronouns.

Who is for people? He is the baker who sells rolls. Which is for animals or things. It's a book which will interest children of all ages. That is for people, animals or things. Here is the tiger that lives in a cage. These are the keys that open the front and back doors.

## Test

### Choose the right variant

1. We saw a lot of pictures at the art shop, but \_\_\_\_\_ was good enough to buy for our museum.

- a) none of them
- b) no of them
- c) not some of them
- d) only any of them

2. If there are \_\_\_\_\_ calls for me, can you ask to leave a message?

- a) some
- b) none
- c) any
- d) no

3. While peeling potatoes my small brother cut \_\_\_\_\_ with a sharp knife.

- a) oneself
- b) him
- c) his
- d) himself

4. There are many good hotels in the town. You can stay at \_\_\_\_\_ of them.

- a) no
- b) some
- c) any
- d) all

5. I've been trying to phone her all day but \_\_\_\_\_ I phone her the line is engaged.

- a) every time
- c) the every time

- b) all the time                      d) the whole time
6. He is invited to lots of parties and he goes to\_\_\_\_\_.
- a) everyone                          c) every one
- b) everything                         d) each
7. These are\_\_\_\_\_organizations operating in our market and even\_\_\_\_\_we would consider real competitors.
- a) a few, many                      b) little, some
- c) some, fewer                      d) few, fewer
8. You are not the only one who failed to hear the news. I didn't\_\_\_\_\_.
- a) neither                            c) either
- b) both                                 d) also
9. If we hadn't taken the same plane, we might have never met\_\_\_\_\_.
- a) ours                                 c) each other
- b) ourselves                         d) both of us
- 10.\_\_\_\_\_food, clothes and some\_\_\_\_\_goods have become more expensive nowadays.
- a) much, others                      c) many, the others
- b) many, others                      d) much, other
11. I'm going to the wedding on Saturday.\_\_\_\_\_is getting married.
- a) a friend of me                    c) mine friend
- b) a friend of mine                 d) a friend of my
12. During the terrible road accident one car bumped into \_\_\_\_\_one. One driver was heavily injured and\_\_\_\_\_died.
- a) another, other                    c) other, the other
- b) another, the other                d) the other, other
13. — Did you hear about the party at Kate's last night? - No, I didn't.\_\_\_\_\_of my friends\_\_\_\_\_there.
- a) none, was                         c) nobody, were
- b) nobody, was                      d) no, were
14. "The system of education is not superb," she said. "Too \_\_\_\_\_mathematics\_\_\_\_\_usually taught at school."
- a) many, are                         c) much, are
- b) much, is                            d) many, is
- 15.\_\_\_\_\_should be present at the meeting. A very serious question will be discussed.
- a) someone                         c) everyone
- b) any one                            d) anyone
16. We've got too\_\_\_\_\_petrol. We must have the car filled at the nearest service station.
- a) a little                            c) much
- b) little                                d) many
17. When the train arrived at the railway station\_\_\_\_\_passengers got their suitcases. So we picked up\_\_\_\_\_too.
- a) other, our                         c) some, ours
- b) others, our                        d) another, ours
18. There are\_\_\_\_\_evenings when I do not want to go to bed. But there are\_\_\_\_\_evenings when nothing could keep me from going to bed.
- a) some, other                        c) several, others
- b) some, the others                 d) some, the other

19. I don't really enjoy going to the cinema\_\_\_\_\_. I'd rather have\_\_\_\_\_to go with me.

a) by my own, no one            c) on myself, someone

b) by myself, someone        d) by my own, anyone

20. I have been talking to that strange man for an hour but I still can't understand if he is\_\_\_\_\_Spanish\_\_\_\_\_Portuguese.

a) either, or                      c) neither, nor

b) neither, or                    d) either, nor

### Test

1. If we meet him, I ... you. a) Introduce;

b) will introduce;

c) would introduce.

d) introduces;

e)introduced

2. Who would he talk to if he ... a very serious problem?

a) has; b) had;

c) had had; d) have

e)will have

3. What would they do if they ... the last train? a) miss;

b) would miss;

c) missed; d) had missed. e) misses

4. If she lost her job, she ... her own business. a) will start;

b) would start;

c) started;

d) would have started;

e) starts

5. If he wanted a quiet holiday, he ... to the mountains. a) would go; b) went; c) would have gone; d) will go; e)goes

6. What will you do when you ... school?

a)will finish; b) finish; c) would finish;

d) finished; e)finishes

7. What ... her, if it's her birthday?

a) will you buy;

b) do you buy;

c) would you buy;

d) have you bought;

e)buys;

8. What would you do if you ... me?

a) are; b) were;

c) have been; d) will be

e) would be;

9. If you ... Mr Snowdon, you would like him.

a) would know;

b) will know; c) knew;

d)had known e)knows

10. If he ... in the evening, he'd have time to see this film.



- a) didn't work;
- b) hadn't worked;
- c) doesn't work;
- d) won't work;
- e) wouldn't work;

11. If I had a car, I ... you a lift.

- a) will give; b) gave;
- c) would give;
- d) would have given;
- e) give

12. If I didn't go to bed late, I ... so tired all day.

- a) would be; b) will be; c) won't be;
- d) wouldn't be; e) was

13. If I go on a diet, I ... weight.

- a) will lose; b) lose;
- c) would lose; d) lost.
- e) have lost

14. If Linda ... hurry, she will be late.

- a) will not hurry;

## Unit 11

### Topical Vocabulary

English	Kazakh	Russian
Arguably	даулы	спорно
Authors	авторлар	авторы
Useful	пайдалы	полезный
Able	Мүмкіншілігі болу	Иметь возможность
Before	алдында	вперед
Established	негізгі	основанный
Necessary	Қажетті	необходимый

#### 1. Read the text and retell

##### Symbol Language

Most people agree that symbols are useful, even if some authors invent their own favorite symbols. UML is the most widely accepted graphical notation for software design, although it is sometimes criticized for not being consistent. Even in mathematics, the ultimate language of symbols, there are controversies about symbols even for such established subjects as calculus (cf., Newton's vs. Leibnitz's symbols for calculus), lest to bring up more recent subjects. To sum up, you can invent your own symbols if you feel it absolutely necessary, but before using them, explain their meaning/semantics and ensure that it is always easy to look-up the meanings of your symbols. UML is not ideal, but it is the best currently available and most widely adopted.

Arguably, symbol language has a greater importance than just being a way of describing one's designs. Every language comes with a theory behind it, and every theory comes with a language. Symbol language (and its theory) helps you articulate your thoughts. Einstein knew about the general relativity theory for a long time, but only when he employed tensors was he able to articulate the theory.

##### Ex.2. Define true and false sentences:

- The study of information systems originated as a sub-discipline of biology.
- Börje Langefors introduced the concept of "Information Systems" at the third International Conference on Information Processing and Computer Science in New York in 1965.
- The third International Conference on Information Processing and Computer Science was in New York in 1974.
- Information technology is a very important malleable resource available to executives.
- Brad Pitt introduced the concept of "Information Systems".
- Information system has matured into a major field of management.
- Many companies have created a position of Chief Information Officer.

**Ex.3. Answer the following questions:**

- (a) Does computer science play an important role in our life?
- (b) How could you imagine our life without computers?
- (c) How often do you use a computer to do personal tasks?
- (d) Do you think that we should learn computer science at school? Why?
- (e) Did computer change your life?
- (f) Can you tell about advantages of computer?
- (g) Can you tell about disadvantages of computer?

**Ex.4. Ask with your partner questions about:**

- (a) information systems; (b) computer science; (c) the management of technology; (d) Börje Langefors; (e) International Conference on Information Processing and Computer Science; (f) Chief Information Officer.

**Ex.5. How do you understand the story? Discuss it with your partner.**

A school teacher injured his back and had to wear...

A school teacher injured his back and had to wear a plaster cast around the upper part of his body. It fit under his shirt and was not noticeable at all. On the first day of the term, still with the cast under his shirt, he found himself assigned to the toughest students in school. Walking confidently into the rowdy classroom, he opened the window as wide as possible and then busied himself with desk work. When a strong breeze made his tie flap, he took the desk stapler and stapled the tie to his chest. Discipline was not a problem from that day forth!

**SWS 11**

**Read the text and choose a suitable title.**

- Embedded systems as one kind of operating systems
- Basic concepts of real-time operating systems
- Development of real-time operating systems
- Real-time and embedded systems in comparison

Real-time and embedded systems operate in constrained environments in which computer memory and processing power are limited. They often need to provide their services within strict time deadlines to their users and to the surrounding world. It is these memory, speed and timing constraints that dictate the use of real-time operating systems in embedded software.

**Basic kernel services**

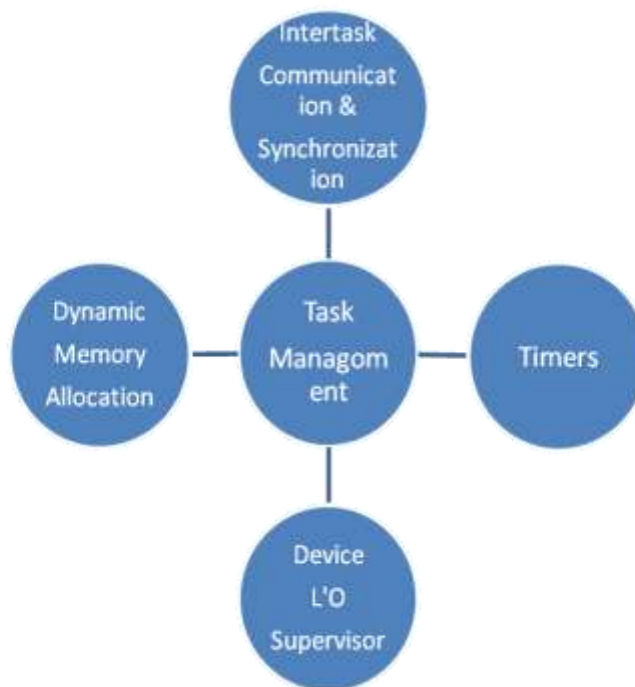
The kernel is the part of an operating system that provides the most basic services to application software running on a processor.

The kernel of a real-time operating system (RTOS) provides an “abstraction layer” that hides from application software the hardware details of the processor (or set of processors) upon which the application software will run. This is shown in Figure 1.



*Fig. 1. An RTOS Kernel provides an Abstraction Layer between Application Software and Embedded Hardware*

In providing this “abstraction layer” the RTOS kernel supplies five main categories of basic services to application software, as seen in Figure 2.



*Fig. 2. Basic Services Provided by a Real-Time Operating System Kernel*

The most basic category of kernel services, at the very center of Figure 2, is Task Management. This set of services allows application software developers to design their software as a number of separate “chunks” of software – each handling a distinct topic, a distinct goal, and perhaps its own real-time deadline. Each separate “chunk” of software is called a “task”. Services in this category include the ability to launch tasks and assign priorities to them. The main RTOS service in

this category is the scheduling of tasks as the embedded system is in operation.

The Task Scheduler controls the execution of application software tasks, and can make them run in a very timely and responsive fashion.

The second category of kernel services, shown at the top of Figure 2, is Inter task Communication and Synchronization. These services make it possible for tasks to pass information from one to another, without danger of that information ever being damaged. They also make it possible for tasks to coordinate, so that they can productively cooperate with one another. Without the help of these RTOS services, tasks might well communicate corrupted information or otherwise interfere with each other.

Since many embed systems have stringent timing requirements, most RTOS kernels also provide some basic Timer services, such as task delays and time-outs. These are shown on the right side of Figure 2.

Many (but not all) RTOS kernels provide Dynamic Memory Allocation services. This category of services allows tasks to “borrow” chunks of RAM memory for temporary use in application software. Often these chunks of memory are then passed from task to task, as a means of quickly communicating large amounts of data between tasks.

Many (but not all) RTOS kernels also provide a “Device I/O Supervisor” category of services. These services, if available, provide a uniform framework for organizing and accessing the many hardware device drivers that are typical of an embedded system. In addition to kernel services, many RTOSs offer a number of optional add on operating system components for such high-level services as file system organization, network communication, network management, database management, user-interface graphics, etc. Although many of these add-on components are much larger and much more complex than the RTOS kernel, they rely on the presence of the RTOS kernel and take advantage of its basic services.

Each of these add-on components is included in an embedded system only if its services are needed for implementing the embedded application, in order to keep program memory consumption to a minimum.

Many non-real-time operating systems also provide similar kernel services. The key difference between general-computing operating systems and real-time operating systems is the need for “deterministic” timing behavior in the real-time operating systems. Formally, “deterministic” timing means that operating system services consume only known and expected amounts of time.

Real-time and embedded systems are used in many applications such as airborne computers, medical instruments and communication systems. Embedded systems are characterized by limited processor memory, limited processing power, and unusual interfaces to the outside world. Real-time requirements impose stringent time deadlines for delivering the results of embedded processing.

### **1. Answer the questions to the text:**

1. What are the constraints that dictate the use of real-time operating systems?
2. What is an “abstraction layer” in RTOS?
3. What are main categories of basic services in RTOS?

4. Inter task Communication and Synchronization controls the execution of application software tasks, does it?
5. Does Device I/O Supervisor or Dynamic Memory Allocation service tasks to “borrow” chunks of RAM memory?
6. Are add-on components always included in an embedded system?
7. What does “deterministic” timing mean?

**2. Look through the text again and copy out the main terms. Find their definition in the Glossary.**

**3. Using the following terms fill in the gaps in the text.**

- a) kernel
- b) deterministic timing behavior
- c) real-time requirements
- d) Inter task Communication and Synchronization
- e) Time Management
- f) real-time system
- g) Dynamic Memory Allocation
- h) Timer
- i) Device I/O Supervisor

\_\_\_\_\_ operates in constrained environment in which computer memory and processing power are limited. \_\_\_\_\_ impose stringent time deadlines for delivering the results of embedded processing. The RTOS \_\_\_\_\_ supplies five main categories of basic services to application software. Services in \_\_\_\_\_ include the ability to launch tasks and assign priorities to them. Without the help of \_\_\_\_\_ service, tasks might communicate corrupted information or otherwise interfere with each other. Some basic \_\_\_\_\_ services provided by RTOS kernels are delays and time-outs. \_\_\_\_\_ allows tasks to borrow chunks of RAM memory for temporary use in application software. A uniform framework for organizing and accessing hardware device drivers are provided by \_\_\_\_\_. In the real-time operating systems there is a need for \_\_\_\_\_ that means that operating system services consume only known and expected amounts of time.

## **11.SSW with TI**

### **Grammar: Conditionals**

There are basically four types of conditional, though combinations of the four are also possible depending on the context.

- Zero Conditional : if + present ==> present

Expresses general truth and scientific facts. Used to show an evidence, when it's always true.

Ex: If it rains, the sun doesn't shine.

- First Conditional : if + present ==> will + inf.

We use it to make predictions or talk about actions or states that may or may not happen ( likely 50/50)

Ex: If it rains, I'll stay at home.

- Second Conditional : if + past simple ==> would + inf

Refers to actions or states that are not real or unlikely to be real in the future.

Ex: If I won 1,000,000, I would travel

- Third Conditional: if + past perfect ==> would have + past participle

Refers to actions in the past, and can be used to express regrets.

Ex: If you hadn't given me a lift, I would have missed the train.

### Test

1. If we meet him, I ... you.

- a) introduce;
- b) will introduce;
- c) would introduce.
- d) introduces;
- e) introduced

2. Who would he talk to if he ... a very serious problem?

- a) has;
- b) had;
- c) had had;
- d) have
- e) will have

3. What would they do if they ... the last train?

- a) miss;
- b) would miss;
- c) missed;
- d) had missed.
- e) misses

4. If she lost her job, she ... her own business. a) will start;

- b) would start;
- c) started;
- d) would have started;
- e) starts

5. If he wanted a quiet holiday, he ... to the mountains.

- a) would go;
- b) went;
- c) would have gone;
- d) will go;
- e) goes

6. What will you do when you ... school?

- a) will finish;
- b) finish;
- c) would finish;
- d) finished;
- e) finishes

7. What ... her, if it's her birthday?

- a) will you buy;

- b) do you buy;
  - c) would you buy;
  - d) have you bought;
  - e)buys;
8. What would you do if you ... me?
- a) are;
  - b) were;
  - c) have been;
  - d) will be
  - e) would be;
9. If you ... Mr Snowden, you would like him.
- a) would know;
  - b) will know;
  - c) knew;
  - d)had known
  - e)knows
10. If he ... in the evening, he'd have time to see this film.
- a) didn't work;
  - b) hadn't worked;
  - c) doesn't work;
  - d) won't work;
  - e)wouldn't work;
11. If I had a car, I ... you a lift.
- a) will give; b) gave;
  - c) would give;
  - d) would have given;
  - e) give
12. If I didn't go to bed late, I ... so tired all day.
- a) would be;
  - b) will be;
  - c) won't be;
  - d) wouldn't be;
  - e) was
13. If I go on a diet, I ... weight.
- a) will lose;
  - b) lose;
  - c) would lose;
  - d) lost.
  - e)have lost
14. If Linda ... hurry, she will be late.
- a) will not hurry;
  - b) doesn't hurry;
  - c) didn't hurry;
  - d) wouldn't hurry;
  - e)hurries
15. If Jane ... hurry, she would be late.



- a) will not hurry;
- b) doesn't hurry;
- c) didn't hurry;
- d) wouldn't hurry.
- e) won't be;

**Unit 12**  
**Topical Vocabulary**

<b>English</b>	<b>Kazakh</b>	<b>Russian</b>
A method	Әдіс	Метод
Methodology	Әдістеме	Методология
Success	Жетістік	Успех
Learning	Оқу	Изучение
Development	Өсу	Развитие
Impede	Бөгет жасау	Мешать
Cycle	Цикл	Цикл
Following	Келесі	Следующий
Insolvent	Банкрот	Банкрот
Knowledge	Білім	Знание
Experience	Тәжірибе	Опыт
Impossible	Невозможно	Мүмкін емес

## Read the text

### Software Development Methods

*“Plan, v.t. To bother about the best method of accomplishing an accidental result.”*

—Ambrose Bierce, *The Devil’s Dictionary*

The goal of software methodologists is to understand how high quality software can be developed efficiently. The hope is that new insights will emerge about effective product development, so both students and experts might benefit from learning and applying methodology. Ideally, the developer would adhere to the prescribed steps and a successful project would result—regardless of the developer’s knowledge and expertise. Methodology development often works by observing how expert developers work and deriving an abstract model of the development process. In reality, life cycle methods are often not followed; when they are, it is usually because of employer’s policy in place. Why is it so, if following a method should be a recipe for success?

There are several reasons why methodologies are ignored or resisted in practice. One reason is that methodology is usually derived from past experience. But, what worked for one person may not work for another. Both developers and projects have different characteristics and it is difficult to generalize across either one. Software development is so complex that it is impossible to create precise instructions for every scenario. In addition, method development takes relatively long time to recognize and extract “best practices.” By the time a method is mature, the technologies it is based on may become outdated. The method may simply be inappropriate for the new and emerging technologies and market conditions.

A development method usually lays out a prescriptive process by mandating a sequence of development tasks. Some methods devise very elaborate processes with a rigid, documentation heavy methodology. The idea is that even if key people leave the project or organization, the project should go on as scheduled because everything is properly documented. This approach is known as “Big Design Up Front” (BDUF). However, experience teaches us that it is impossible to consider all potential scenarios just by thinking. And, regardless of how well the system is documented, if key people leave, the project suffers. It is much more sensible to develop initial versions of the system-to-be from a partial understanding of the problem, let users play with such a prototype, and then redesign and develop a new iteration based on the gained understanding.

### 1. Make up sentences using these words:

- 1) Method ;
- 2) Development;
- 3) Organization;
- 4) Project;
- 5) Experience.

### 2. Guess the meaning of the underlined words.

### 3. Make a short story using these words:

- a) successful project
- b) software

- c) experience
- d) difficult
- e) computer
- f) mouse
- g) program

**4. Complete the sentences:**

- a) \_\_\_\_\_ often works by observing how expert developers work and deriving an abstract model of the development process.
- b) There are several reasons why methodologies are ignored or \_\_\_\_\_ practice.
- c) One reason is that \_\_\_\_\_.
- d) A development method usually lays out a prescriptive process by \_\_\_\_\_ of development tasks.
- e) The idea is that even if \_\_\_\_\_ leave the project or organization, the project should go on as scheduled \_\_\_\_\_ everything is properly documented.

**5. Retell the text.**

**SWS 12. Read the text and retell**

**SOFTWARE ENGINEERING ETHICS**

Software engineering ethics can be approached from three directions. First, it can describe the activity of software engineers making practical choices that affect other people in significant ways. Second, it can be used to describe a collection of principles, guidelines, or ethical imperatives that guide or legislative action, and third, it can be used to name a discipline that studies the relationship between the other two senses of ethics. Software engineering ethics is clearly both an activity and a body of principles. The discipline of software engineering ethics that studies this activity and formalizes these principles, however, is in its infancy.

**Software Engineering Ethical Activity**

To avoid confusion, “ethics”, as understood here, addresses any intentional action that impacts negatively or positively the lives and values of others. Software engineering conceives of itself primarily as a technical discipline that develops software. There are a variety of names, such as information systems analyst, for those who engage in professional software development. Regardless of the title used, the focus of software engineering activity is primarily on the technical adequacy of the products developed. But the fact that roughly one billion people depend on software systems to effectively conduct their daily lives (Reed, 2000) has led many in computing to give more attention to the nontechnical aspects and to wrestle with the ethical impact of their daily decisions and the values imbedded therein.

The relationship between computers and ethics can be described as occurring when humans make decisions about computers, and those decisions affect people's lives. Human

values are linked to technical decisions in this way. The activity of Professional Software Engineering Ethics takes place when any decision made by computing professionals during the design, development, construction and maintenance of computing artifacts affect other people. These decisions may be made by individuals, teams, management, or the profession. The software engineering decision how to design the release of an airbag will affect the lives of others. This technical decision is also guided by an ethical decision about human values. Barry Boehm (1981) begins his work on software engineering economics with an anecdote about how the failure to consider human values affected the development of software for a high school attendance system. His work on this project led him to see that software engineers have "... an opportunity to make a significant positive impact on society, simply by becoming more sensitive to the long-term human relations implications of our work and incorporating this sensitivity into our software designs and products." (Boehm, 1981)

## 12.SSW with TI

### Grammar: Numerals in English

: If a number is in the range 21 to 99, and the second digit is not zero, we should write the number as two words separated by a hyphen:

25 twenty-five

57 fifty-seven

89 eighty-nine

:: Numbers over 100 are generally written in figures. However if you want to say them aloud or want to write them in words rather than figures you put 'and' in front of the number expressed by the last two figures. For example:

203 two hundred and three (AmE: two hundred three)

622 six hundred and twenty-two (AmE: six hundred twenty-two)

:: Numbers between 1000 and 1,000,000 is usually said or written in words as:

1,803 one thousand, eight hundred and three (AmE: one thousand, eight hundred three)

1,963 one thousand, nine hundred and sixty-three (AmE: one thousand, nine hundred sixty-three)

2,840 two thousand, eight hundred and forty (AmE: two thousand, eight hundred forty)

Four-figure numbers ending in 00 can also be said or written as a number of hundreds. For example, 1800 can be said or written as "eighteen hundred"

:: If the number 1963 is being used to identify something, it is said as "one nine six three". We always say each figure separately like this with telephone numbers. If a telephone number contains a double number, we use the word "double":

561 6603 five six one [pause] double six 'oh' three (AmE: five six one [pause] six six 'oh' three)

:: Saying years. We normally say a year in two parts. In the case of years ending in "00", we say the second part in "hundred":

1058 ten fifty-eight

1706 seventeen hundred and six (or 'seventeen oh six')

1865 eighteen sixty-five

1900 nineteen hundred

There are two ways of saying years ending in "01" to "09" before 2000. For example: "1901" can be said as "nineteen oh one" or "nineteen hundred and one". The year 2000 is read "two thousand", 2006 "two thousand and six" (AmE: two thousand six). Post-2010 dates are often said as normal (2010 would be "twenty ten").

:: Flight numbers. We pronounce a flight number in two parts or digit-by-digit. For example:

110 one ten (or 'one one oh')

1248 twelve forty-eight

2503 twenty-five oh three

3050 three oh five oh (or 'three zero five zero', 'thirty fifty')

:: Expressing millions.

1,412,605 one million four hundred (and) twelve thousand six hundred (and) five

2,760,300 two million seven hundred (and) sixty thousand three hundred

Remember: The British use 'and' before tens and ones but the Americans usually leave the 'and' out.

Fractional numbers

$\frac{1}{2}$	a half	0.5	British English nought point five American English zero point five
$2\frac{1}{2}$	two and a half	2.5	two point five
$\frac{1}{4}$	a quarter	0.25	British English nought point two five American English zero point two five
$\frac{3}{4}$	three quarters American English also three fourths	0.75	British English nought point seven five American English zero point seven five

### 1. Write it in numbers.

- Two hundred and forty-five, five hundred and thirty-three, eight hundred and sixteen.
- Three thousand five hundred and sixty-two, seven thousand three hundred and twenty-four.
- One hundred books, a hundred (of) pages, hundreds of people.
- One thousand cars (a thousand cars), thousands of people, millions of books.

5. Two and three is five (two plus three equals five), seven minus four is three, three multiplied by five is fifteen, ten divided by two is five.
  6. The 1st of January (1 January, January 1 — The first of January, January the first), the 8th of March (8 March, March 8 — The eighth of March, March the eighth).
  7. Chapter five, bus six.
  8. Three point four five, eight point zero nine.
9. Two thirds, four fifths

## Text 13

### Topical Vocabulary

English	Kazakh	Russian
Short-run	Аз мерзімге	краткосрочный
requirement	Талап ету	требование
simply	қарапайым	просто
developer	құрастырушы	конструктор
complain	Шағымдану	жаловаться
implementation	енгізу	внедрение
business	сауда	бизнес
loss	шығын	убыток
need	қажеттілік	нуждаться
goal	мақсат	цель

### Read the text and retell

#### Testing

The key idea of Test-Driven Development (TDD) is that every step in the development process must start with a plan of how to verify that the result meets some goal. The developer should not create a software artifact (such as a system requirement, a UML diagram, or source code) unless he has a plan of how it will be tested. For example, a requirement is not well-specified if an automated computer program cannot be written to test it for compliance. Such a requirement is vague, subjective, or contradictory and should be.

The testing process is not simply confined to coding. Testing the system design with walkthroughs and other design review techniques is very helpful. Agile TDD methodology prescribes to make progress just enough to pass a test and avoid detailed analysis. When a problem is discovered, fix it. This approach may not be universally appropriate, e.g., for mission critical applications. Therein, when a problem is discovered, it might have led to a major human or economic loss. Discovering that you missed something only when system failed in actual use may prove very costly. Instead, a thorough analysis is needed in advance of implementation.

However, the philosophy of thinking while creating a software artifact about how it will be tested and designing for testability applies more broadly than agile TDD. Software defects (or, bugs) are typically not found by looking at source code. Rather, defects are found by mistreating software and observing how it fails, by reverse engineering it (approach used by people who want to exploit its security vulnerabilities), and by a user simply going about his business until discovering that a program has done something like delete all of the previous

hour's work. Test plans and test results are important software artifacts and should be preserved along with the rest of software documentation. Agile TDD claims to improve the code, and detect design brittleness and lack of focus. It may well do that, but that is not the main purpose of testing, which is to test the correctness, not quality of software. Even a Rube-Goldberg design can pass tests under the right circumstances. And we cannot ever check all circumstances for complex software systems. Therefore, it would be helpful to know if our system works correctly (testing) and if it is of high quality, not a Rube Goldberg machine. This is why we need software measurement.

**Ex.2. Guess the meaning of the underlined words.**

**Ex.3. Define *true* and *false* sentences:**

- (a) The first calculating machine was invented in 1858.
- (b) Computer was invented by Charles Babbage.
- (c) Computer can do 500 000 sums in one second.
- (d) Any doctor can keep up with all discoveries.
- (e) Young people who finish the school must be trained to operate tractors.
- (f) The pupils teach computers to investigate school problems.
- (g) Computers do not play any role in modern hospitals.

**Ex.4. Answer the following questions:**

- (a) What role does computer play in your life?
- (b) How often do you use computer?
- (c) Can you call yourself as “an Internet user”?
- (d) In what sphere do computers use widely?
- (e) Could a person keep the endless information in his head?
- (f) Do you think that in the future computer can replace a person?
- (g) What advantages of a computer do you know?
- (h) Who invented the first calculated machine?
- (i) How do you imagine our life without computers?

**Ex.5. Ask your partner questions about:**

- (a) Computers; (b) Information science; (c) scientists; (d) medical computer centers; (e) Charles Babbage; (f) school problems.

**Ex.6. How do you understand the joke? Discuss it with your partner.**

AST technical support had a caller complaining that her mouse was hard to control with the dust cover on. The cover turned out to be the plastic bag the mouse was packaged in.

## SWS 13

**Read the text and find out the similarities and differences of the email protocols mentioned in the text.**

### **Email Protocols**

Interactions between email servers and clients are governed by email protocols. The three most common email protocols are POP, IMAP and MAPI. Most email software operates under one of these (and many products support more than one). The most important reason for knowing of their existence - to understand that the correct protocol must be selected, and correctly configured, if you want your email account to work.

The Post Office Protocol (currently in version 3, hence POP3) allows email client software to retrieve email from a remote server. The Internet Message Access Protocol (now in version 4 or IMAP4) allows a local email client to access email messages that reside on a remote server. There's a related protocol called SMTP, which we also discuss below.

The Messaging Application Programming Interface (MAPI) is a proprietary email protocol of Microsoft, that can be used by Outlook (Microsoft's email client software) to communicate with Microsoft Exchange (its email server software). It provides somewhat more functionality than an IMAP protocol; unfortunately, as a proprietary protocol, it works only for Outlook-Exchange interactions.

#### **POP**

POP is the older design, and hails from an era when intermittent connection via modem (dial-up) was the norm. POP allows users to retrieve email when connected, and then act on the retrieved messages without needing to stay "online." This is an important benefit when connection charges are expensive.

The basic POP procedure is to retrieve all inbound messages for storage on the client, delete them on server, and then disconnect. (The email server functions like a mailbox at the Post Office - a temporary holding area until mail gets to its final destination, your computer.)

Outbound mail is generated on the client, and held for transmission to the email server until the next time the user's connection is active. After it's uploaded, the server forwards the outgoing mail to other email servers, until it reaches its final destination.

Most POP clients also provide an option to leave copies of email on the server. In this case, messages are only removed from the server when greater than a certain "age" or when they have been explicitly deleted on the client. It's the copies on the client that are considered the "real" ones, however, with those left on the server merely temporary backups.

#### **IMAP**

IMAP is the newer protocol and oriented toward a "connected" mode of operation. The standard IMAP procedure is to leave messages on the server instead of retrieving copies, so email is only accessible when "on-line." IMAP is more suited to a world of always-on connections, particularly the fast connections offered by broadband mechanisms. Having to be connected to read your email is a trivial obstacle when the connection is always available. (It's a little like leaving your messages at the Post Office, and going there every time you



want to read them. That might be difficult in the physical world, but it's easy in the virtual one.)

Because messages remain on the server, until explicitly deleted by the user, they can be accessed by multiple client computers - an important advantage when you use more than one computer to check your email.

IMAP does not preclude keeping copies on the client, but, in an inversion of the way POP works, it's the server's copies that are considered the "real" ones. That offers an important security benefit - you won't lose your email if, for some reason, your client computer's storage media fails.

IMAP has other advantages over POP (detailed in the links provided below).

It is the standard we recommend if you can't use MAPI.

### **SMTP**

At the risk of overloading you with information, you should know that strictly speaking it's only the incoming mail that is handled by a POP or IMAP protocol. Outgoing mail for both POP and IMAP clients uses the Simple Mail Transfer Protocol (SMTP).

When you set up a POP or IMAP email account on email client software, you must specify the name of the (POP or IMAP) mail server computer for incoming mail. You must also specify the name of the (SMTP) server computer for outgoing mail. These names are typically in the same form as Web addresses (e.g., "imap.med.miami.edu"). Depending on the client, there may also be specifications for email directories and searching.

### **MAPI**

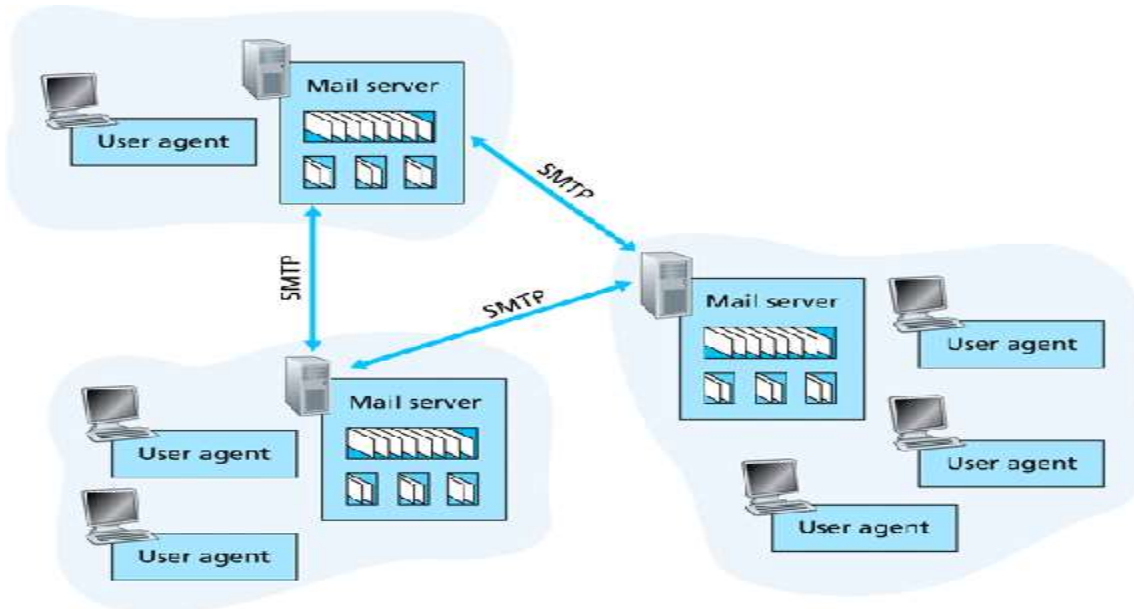
As noted, MAPI is Microsoft's proprietary email protocol. It provides greater functionality than IMAP for Outlook email clients interacting with an Exchange email server. It doesn't work for anything else. (In Outlook you may simply see the connection option "Microsoft Exchange Server" rather than MAPI. It's offering the same thing.)

Remote access using MAPI may require use of a VPN connection, because the ports (communications channels) that MAPI uses are otherwise blocked for security reasons. (That's the case when accessing the medical campus Exchange system remotely.)

### **Web browser email access**

Many email systems can now be accessed using only a Web browser. There is no need to install client email software of any kind. Logically, Web browser interfaces to email are like IMAP, in that all the messages remain on the server unless explicitly deleted. (Message copies can be saved on the client computer.) For example, the medical campus Exchange email system can be accessed by Outlook Web Access (OWA); it provides most of the functionality of an installed version of Outlook. OWA is compatible with most browsers, such as Firefox, Netscape, Opera or Safari, though it works best with Microsoft's Internet Explorer browser.

## **1. Use the picture below and describe the work of the email protocols.**



**Ex.2. We can't imagine our everyday life without using of the Internet. Convince your partner of the importance of this problem. Give 10 statements, using the appropriate words and expressions from the table below.**

<b>Emphasis</b>	<b>Certainty</b>
I particularly want to emphasize	I'm certain
It's essential to realize	There's no doubt
It's well worth noting	Without doubt
I wish to draw your attention to	Undoubtedly
I consider this point of utmost importance	It goes without saying
	I'm positive
	I'm sure

**Ex.3. Answer the following questions:**

- What is **Email Protocol**?
- What is **IMAP**?
- What the interaction between mail servers and clients is regulated by?
- The standard procedure of IMAP is ...?
- Which Internet browsers do you know?

**Ex.4. Guess the meaning of the underlined words.**

**Ex.5. Work in pairs A-B discussing advantages and disadvantages of Email Protocol.**

### 13. SSW with TI

#### Grammar revision: INFINITIVE OF PURPOSE

(1). Write sentences to say why people go to some of the following places. Begin *You go...*

- 1) a library *You go to a library to borrow books*  
a bookshop a cinema a theatre a swimming pool a gymnasium a driving school  
a railway station an airport a travel's agent a football stadium a bank  
a post office a restaurant a supermarket a garage a hospital a newsagent

(2). Match the line A with the line B and the line C.

A B C

- I went for a walk the house smell nice.  
I'm going to the library to do a new car.  
I went to town to make some friends  
I phoned the theatre to buy how to get to my house  
I want to borrow some money to get my books.  
I bought some flowers to change some fresh air.  
I'm going to Paris to visit some shopping.

Translate the sentences from English into Russian.

Ex. 3 Translate the following sentences paying attention to the modal function of the verb *to have*.

1. He sees very badly; he has to wear glasses all the time. 2. I have to do all the typing at my office. 3. The children have to play in the streets till their mothers get home from work. 4. I hadn't enough money and I had to pay by check. 5. I never remember his address; I always have to look it up. 6. Employer; You have to come to work in time 7. The buses were all full: I had to get a taxi. 8. Father to son: I can't support you any more: you'll have to earn your own living from now on. 9. You'll have to report this accident to the police. 10. I have to admit that I never thought that to be in finance is so interesting.

Ex. 4 Make questions with *have to* according to the model. Answer the questions and translate the sentences into Russian.

1. I had to go to hospital last week. Why *did you have to go to hospital*?  
2. I have to get up early tomorrow. Why.....early?  
3. Ann has to go somewhere now. Where.....she.?  
4. George had to pay a parking fine  
Yesterday. How much .....?  
5. I had to wait a long time for the bus. How long ...?  
6. I have to phone my sister now. Why ..?  
7. Paul has to leave soon. What time ?

### Text 14

#### Topical Vocabulary

English	Kazakh	Russian
Hijacked	Басып алу	(Разг). захваченный

Applications	Өтініштер	Заявки
Nowadays	Осы уақытта	Сейчас
Communication	Байланыс	Связь
Accessible	Қолжетімді	Доступный
Promote	Ұсыну	Выдвигать
Problems	Мәселелер	Задачи
Only	Тек қана	Только
Illicit	Заңсыз	Незаконный
Exploitable	Пайдалануға келетін	Годный для использования
Knowledge	Білім	Знание
Resources	Ресурсы	Ресурстар
Security	Қауіпсіздік	Безопасность

## Security

### 1. Read the text.

Most computers, telephones, and other computing devices are nowadays connected to the public Internet. Publicly accessible Web applications and services can be abused and twisted to nefarious ends. Even if the computer does not contain any “sensitive” information, its computing and communication resources may be abused to send out spam and malware as part of a distributed botnet. Such hijacked systems provide a “safe” means of distribution of illicit goods or services on someone else’s server without that person’s knowledge. Because of ubiquitous connectivity, anyone’s security problems impact everyone else, with only rare exceptions.

There are two kinds of technology-based security threats in software systems. One arises because of bad software, where the attacker exploits software defects. The other arises because of network interconnectedness, when the attacker exploits other infected systems to poison the traffic to or from targeted computers. Hence, even if software is designed with security features to prevent unauthorized use of system resources, it may be denied data or services from other computers.

Attackers rely on exploitable software defects as well as continuing to develop their own infrastructure. An experienced developer must understand both the principles of software design and the principles of network security. Otherwise, he will be prone to making naïve mistakes when assessing the security benefits of a particular approach to software development. This book focuses on better software design and does not cover network security.

The Security Development Lifecycle (SDL), promoted by Microsoft and other software organizations, combines the existing approaches to software development with security-focused activities throughout the development lifecycle. Security risk management focuses on minimizing design flaws (architectural and design-level problems) and code bugs (simple implementation errors in program code). Identifying security flaws is more difficult

than looking for bugs, because it requires deep understanding of the business context and software architecture and design. We work to avoid design flaws while building secure software systems. Techniques include risk analysis, abuse cases (trying to misuse the system while thinking like an attacker), and code quality auditing

**2. Guess the meaning of the underlined words.**

**3. What do you know about:**

- a) Dr.Web;
- b) Kaspersky;
- c) Avast.

**4. Ask your partner questions about:**

(a) future profession; (b) the requirements of our society; (c) independent life; (d) personal interest; (e) hobbies; (f) opportunities; (g) computer; (h) knowledge is power.

**5. Retell the text.**

**6. How do you understand the joke? Discuss it with your partner.**

A AST customer was asked to send a copy of her defective diskettes. A few days later a letter arrived from the customer along with photocopies of the floppies.

**7. Discuss with your partner about following statement:**

Attackers rely on exploitable software defects as well as continuing to develop their own infrastructure. An experienced developer must understand both the principles of software design and the principles of network security. Otherwise, he will be prone to making naïve mistakes when assessing the security benefits of a particular approach to software development.

**Grammar: Prepositions**

**Definition:** Prepositions are a class of words that indicate relationships between nouns, pronouns and other words in a sentence. Most often they come before a noun. They never change their form, regardless of the case, gender etc. of the word they are referring to.

Some common prepositions are:

about	by	outside
above	despite	over
across	down	past
after	during	since
against	except	through
along	for	throughout
among	from	till
around	in	to

at	inside	toward
before	into	under
behind	like	underneath
below	near	until
beneath	of	up
beside	off	upon
between	on	with
beyond	onto	within
but	out	without.

Prepositions typically come before a noun:

For example:

- **after** class
- **at** home
- **before** Tuesday
- **in** London
- **on** fire
- **with** pleasure

A preposition usually indicates the temporal, spatial or logical relationship of its object to the rest of the sentence.

For example:

- The book is on the table.
- The book is beside the table.
- She read the book during class.

In each of the preceding sentences, a preposition locates the noun "book" in space or in time.

Prepositions are classified as simple or compound.

### Simple prepositions

Simple prepositions are single word prepositions. These are all showed above.

For example:

- The book is **on** the table.

### Compound prepositions

Compound prepositions are more than one word. **in between** and **because of** are prepositions made up of two words - **in front of**, **on behalf of** are prepositions made up of three words.

For example:

- The book is in between War and Peace and The Lord of the Rings.
- The book is in front of the clock.

### Examples:

- The children climbed the mountain without fear.
- There was rejoicing throughout the land when the government was defeated.
- The spider crawled slowly along the banister.

The following table contains rules for some of the most frequently used prepositions in English:

## Prepositions of Time:

English	Usage	Example
• on	• days of the week	• on Monday
• in	• months / seasons • time of day • year • after a certain period of time ( <i>when?</i> )	• in August / in winter • in the morning • in 2006 • in an hour
• at	• for <i>night</i> • for <i>weekend</i> • a certain point of time ( <i>when?</i> )	• at night • at the weekend • at half past nine
• since	• from a certain point of time (past till now)	• since 1980
• for	• over a certain period of time (past till now)	• for 2 years
• ago	• a certain time in the past	• 2 years ago
• before	• earlier than a certain point of time	• before 2004
• to	• telling the time	• ten to six (5:50)
• past	• telling the time	• ten past six (6:10)
• to / till / until	• marking the beginning and end of a period of time	• from Monday to/till Friday
• till / until	• in the sense of <i>how long something is going to last</i>	• He is on holiday until Friday.
• by	• in the sense of <i>at the latest</i> • up to a certain time	• I will be back by 6 o'clock. • By 11 o'clock, I had read five pages.

## Prepositions of Place:

English	Usage	Example
• in	• room, building, street, town, country • book, paper etc. • car, taxi • picture, world	• in the kitchen, in London • in the book • in the car, in a taxi • in the picture, in the world
• at	• meaning <i>next to, by an object</i> • for <i>table</i> • for events • place where you are to do	• at the door, at the station • at the table • at a concert, at the

English	Usage	Example
	something typical (watch a film, study, work)	party • at the cinema, at school, at work
• on	<ul style="list-style-type: none"> <li>• attached</li> <li>• for a place with a river</li> <li>• being on a surface</li> <li>• for a certain side (left, right)</li> <li>• for a floor in a house</li> <li>• for public transport</li> <li>• for <i>television, radio</i></li> </ul>	<ul style="list-style-type: none"> <li>• the picture on the wall</li> <li>• London lies on the Thames.</li> <li>• on the table</li> <li>• on the left</li> <li>• on the first floor</li> <li>• on the bus, on a plane</li> <li>• on TV, on the radio</li> </ul>
• by, next to, beside	• left or right of somebody or something	• Jane is standing by / next to / beside the car.
• under	• on the ground, lower than (or covered by) something else	• the bag is under the table
• below	• lower than something else but above ground	• the fish are below the surface
• over	<ul style="list-style-type: none"> <li>• covered by something else</li> <li>• meaning <i>more than</i></li> <li>• getting to the other side (also <i>across</i>)</li> <li>• overcoming an obstacle</li> </ul>	<ul style="list-style-type: none"> <li>• put a jacket over your shirt</li> <li>• over 16 years of age</li> <li>• walk over the bridge</li> <li>• climb over the wall</li> </ul>
• above	• higher than something else, but not directly over it	• a path above the lake
• across	<ul style="list-style-type: none"> <li>• getting to the other side (also <i>over</i>)</li> <li>• getting to the other side</li> </ul>	<ul style="list-style-type: none"> <li>• walk across the bridge</li> <li>• swim across the lake</li> </ul>
• through	• something with limits on top, bottom and the sides	• drive through the tunnel
• to	<ul style="list-style-type: none"> <li>• movement to person or building</li> <li>• movement to a place or country</li> <li>• for <i>bed</i></li> </ul>	<ul style="list-style-type: none"> <li>• go to the cinema</li> <li>• go to London / Ireland</li> <li>• go to bed</li> </ul>
• into	• enter a room / a building	• go into the kitchen / the house
• towards	• movement in the direction of something (but not directly to it)	• go 5 steps towards the house
• onto	• movement to the top of	• jump onto the table



English	Usage	Example
	something	
<ul style="list-style-type: none"> <li>from</li> </ul>	<ul style="list-style-type: none"> <li>in the sense of <i>where from</i></li> </ul>	<ul style="list-style-type: none"> <li>a flower from the garden</li> </ul>

### 1. Fill in the blanks:

1) The helicopter is \_\_\_ the city. 2) The sun is \_\_\_ the sky. 3) The sky \_\_\_ us is blue. 4) The river flows \_\_\_ the bridge. 5) The temperature today is five degrees \_\_\_ zero. 6) There was a small street \_\_\_ the two buildings. 7) The bench was in the back of the garden, \_\_\_ the trees. 8) John was \_\_\_ the street waiting for the bus. 9) They decided to have a rest \_\_\_ a big tree \_\_\_ side of the road. 10) He thought that it was a good idea to place a table \_\_\_ the two windows.

### 2. Test your knowledge of the *prepositions in / at / to / -* - showing place and movement.

He lives \_\_\_\_\_ Karaganda.  
 She went \_\_\_\_\_ home.  
 Madi works \_\_\_\_\_ Halyk bank.  
 He went \_\_\_\_\_ his friend's house.  
 She arrived \_\_\_\_\_ Manchester for the celebrations.  
 I'm going to stay \_\_\_\_\_ home this weekend.  
 Joanna works \_\_\_\_\_ the hospital.  
 Why don't we go \_\_\_\_\_ the movies tonight?  
 I'm going to see Mariya \_\_\_\_\_ France this summer.  
 I arrived \_\_\_\_\_ work early this morning.  
 She came home \_\_\_\_\_ early.  
 We stayed \_\_\_\_\_ the Ankara Hotel.  
 They visited \_\_\_\_\_ England last summer.  
 She's going to travel \_\_\_\_\_ Finland this summer.  
 I'll be \_\_\_\_\_ school later today.

### 3. Test you knowledge of the *prepositions for / while / during*:

He's been working \_\_\_\_\_ three weeks.  
 I fell asleep \_\_\_\_\_ the film.  
 Did you see Dana \_\_\_\_\_ your holiday?  
 We talked \_\_\_\_\_ an hour.  
 He watched TV \_\_\_\_\_ I cooked.  
 \_\_\_\_\_ our stay in London, we visited a lot of museums.  
 What did you do \_\_\_\_\_ you were in London?  
 I think I need to study German \_\_\_\_\_ a few months before I go there.  
 I came up with a great idea \_\_\_\_\_ I was thinking about my class.  
 They drove through the countryside \_\_\_\_\_ they were staying in France.  
 He was out of work \_\_\_\_\_ six months before he found a new job.  
 I broke my finger \_\_\_\_\_ I was playing squash.  
 Please, don't interrupt the teacher \_\_\_\_\_ he is speaking.

Maira broke into tears \_\_\_\_\_ the film.  
Could you hold on \_\_\_\_\_ a few moments?

**4. Test your knowledge of the *prepositions* in / at / on showing time and date. Choose either in, at or on:**

Let's meet *at* seven o'clock.  
He was born \_\_\_\_\_ July.  
I went there \_\_\_\_\_ 1998.  
She'll be at work \_\_\_\_\_ Thursday.  
We met \_\_\_\_\_ Christmas day.  
They drove to Astana \_\_\_\_\_ September 15th.  
We arrived in this country \_\_\_\_\_ September.  
I love to go shopping \_\_\_\_\_ Christmas time.  
We get up early \_\_\_\_\_ the morning.  
Do you dream \_\_\_\_\_ night?  
What do you like doing \_\_\_\_\_ weekends?  
He's working on his homework \_\_\_\_\_ the moment.  
I lived in Holland \_\_\_\_\_ the 1990s.  
I'll see you \_\_\_\_\_ a few weeks.  
We like going to the cinema \_\_\_\_\_ Fridays.

**5. Put proper *prepositions*:**

- 1 - She wasn't short, she wasn't tall; she was \_\_\_\_\_ average height.
- 2 - What are you going to buy Aliya \_\_\_\_\_ her birthday?
- 3 - The police are looking \_\_\_\_\_ a tall, black man who was seen standing outside the bank just before the robbery took place.
- 4 - The teacher asked the class to do the exercise \_\_\_\_\_ the bottom of page 12.
- 5 - As a child I was always ashamed \_\_\_\_\_ my parents because they were uneducated.
- 6 - I was always very good \_\_\_\_\_ Geography when I was at school.
- 7 - My uncle specializes in \_\_\_\_\_.
- 8 - We arrived \_\_\_\_\_ Taraz at 3.30 in the morning.
- 9 - I didn't see you \_\_\_\_\_ the party on Saturday.
- 10 - There was a lot of coughing \_\_\_\_\_ the performance of Moniusko's 'Fairy Tale' symphony.
- 11 - He saw her as the most attractive woman \_\_\_\_\_ the world.
- 12 - Simon is completely useless \_\_\_\_\_ sports.

**6. Put the correct *preposition* into each space:**

- 1) Sonia gets a bus \_\_\_\_\_ the morning to go to school.
- 2) Many tourists shop \_\_\_\_\_ Government Street \_\_\_\_\_ the summer.
- 3) Sue will be \_\_\_\_\_ the classroom \_\_\_\_\_ 8:30.
- 4) Ann went home \_\_\_\_\_ this morning.
- 5) Alphonse went \_\_\_\_\_ skiing \_\_\_\_\_ 1997.
- 6) Jennifer watches a movie \_\_\_\_\_ television \_\_\_\_\_ every Tuesday.
- 7) I met Donna \_\_\_\_\_ a party Friday night.

- 8) When the children are \_\_\_\_ bed, let's listen \_\_\_\_ music \_\_\_\_ the radio.  
 9) I will go \_\_\_\_ Nova Scotia \_\_\_\_ March \_\_\_\_ 2005.  
 10) She will call you \_\_\_\_ two weeks.  
 11) The cat stayed \_\_\_\_ the house last night.  
 12) I went out \_\_\_\_ dinner the weekend.

#### **4. Prepositions of place, direction and time:**

I'm Peter and I live \_\_\_\_ Germany. \_\_\_\_ Summer I like to travel Italy, because the weather and the people there. Last summer I took a plane \_\_\_\_ Munich to Rome. \_\_\_\_ the airport we went to our hotel bus. We stopped \_\_\_\_ a small restaurant for a quick meal. The driver parked the bus \_\_\_\_ the restaurant. Nobody could find the bus and the driver, so we waited \_\_\_\_ the restaurant \_\_\_\_ one hour. The driver was walking \_\_\_\_ the small park \_\_\_\_ the restaurant which we did not know. So we were very angry \_\_\_\_ him. But my holidays were great. We sat \_\_\_\_ campfires and went dancing \_\_\_\_ the early morning.

#### **SWS 14 . Read the text**

### **Expert Systems**

Expert Systems are an area of AI that explores how to computerize the expertise of a human expert. Computerized versions of the same general ideas are called expert systems. An expert system typically consists of four major components:

1. Knowledge Base. This is the knowledge in the expert system, coded in a form that the expert system can use. It is developed by some combination of humans (for example, a knowledge engineer) and an automated learning system (for example, one that can learn through the analysis of good examples of an expert's performance).
2. Problem Solver. This is a combination of algorithms and heuristics designed to use the Knowledge Base in an attempt to solve problems in a particular field.
3. Communicator. This is designed to facilitate appropriate interaction both with the developers of the expert system and the users of the expert system.
4. Explanation and Help. This is designed to provide help to the user and to provide detailed explanations of the "what and why" of the expert systems activities as it works to solve a problem.

Researchers in AI often base their work on a careful study of how humans solve problems and on human intelligence. In the process of attempting to develop effective AI systems, they learn about human capabilities and limitations. One of the interesting things to come out of work on expert systems is that within an area of narrow specialization, a human expert may be using only a few hundred to a few thousand rules.

Another finding is that typically takes a human many years of study and practice to learn such a set of rules and to use them well. The set of rules is a procedure that involves both algorithmic and heuristic components. In certain cases the set of rules can be fully computerized or nearly fully computerized, and can produce results both very quickly and that may well be more accurate (on average) than highly qualified human experts.

**1. Look through the text and say:**

- What are the main parts of any expert system?
- What is the basis of AI researchers' work?

**2. Mark the following statements as True or False:**

Statements	True	False
Expert systems form a part of AI.		
The communicator facilitates interaction with the developers of an expert system and its users.		
Researchers in AI study human capabilities and limitations		
The set of rules is a procedure that involves only heuristic components.		

**3. Write an annotation to the text “Expert Systems” (See Appendix).**

**4. What are the components of the expert system?**

**14. SSW with TI**

**Grammar: The Gerund**

Recognize a gerund when you see one.

Every gerund, without exception, ends in **ing**. Gerunds are not, however, all that easy to identify. The problem is that all present participles also end in **ing**. What is the difference?

Gerunds function as nouns. Thus, gerunds will be subjects, subject complements, direct objects, indirect objects, and objects of prepositions.

**Verb + -ing**

(a) After verbs

stop enjoy fancy admit consider missfinish mind imagine deny  
involve postpone delay suggest regret avoid practice risk we use –  
ing ( not to)

- Stop talking!
- I'll do the shopping when I've finished cleaning the flat.
- I don't fancy going out this evening.
- Have you ever considered going to live in another country?
- I can't imagine George riding a motor-bike.
- When I'm on holiday, I enjoy not having to get up early.

We also use **-ing** after:

give up (= stop) put off (= postpone) keep или keep on

go on (= continue) carry on (= continue)

- Are you going to give up smoking? After these verbs we do not use infinitive (to do/to dance etc):

- I enjoy dancing.( not' to dance')
- Would you mind closing the door? (not `to close')

- Tom suggested going to the cinema. (not `to go')

**Ex1. Choose the right variant.**

- They like \_\_\_\_\_ their relatives during the holidays.  
 receiving  to receive
- 2) David loves \_\_\_\_\_ to classical concerts.  
 to listen  listening
- 3) The wicked stepmother tried everything \_\_\_\_\_ Snow White.  
 killing  to kill
- 4) I remember \_\_\_\_\_ the Pyrenees for hours and hours when I was young.  
 to climb  climbing
- 5) As he was walking down the street Stuart stopped \_\_\_\_\_ to a colleague.  
 to talk  talking
- 6) My boss doesn't like \_\_\_\_\_ in public, but he does it anyway.  
 to talk  talking
- 7) I like Australia so much!. Why don't you try \_\_\_\_\_ there for some time?  
 living  to live
- 8) Don't forget \_\_\_\_\_ Tom from school at 5.  
 to pick up  picking up
- 9) I hate \_\_\_\_\_ the cooking when I am tired.  
 to do  doing
- 10) I regret \_\_\_\_\_ told you that you were too weak to pass this exam.  
having  to have

**Unit 15**

**Topical Vocabulary**

English	Kazakh	Russian
Depending	Байланысты	В зависимости
Architecture	Сәулет	Архитектура
Intend	Ынталану	Намереваться
Dominate	Басым болу	Доминировать

Applicable	Қолданыста болу	Применимый
Database	Дерекқор	База данных
Store	Қор	Запас
Extensible	Кеңейтілген	Расширенный
Recovery	Сауықтыру	Лечение
Combination	Комбинация	Сочитание

### 1. Read the text.

#### Database

Depending on the intended use, there are a number of database architectures in use. Many databases use a combination of strategies. On-line Transaction Processing systems (OLTP) often use a row-oriented data store architecture, while data-warehouse and other retrieval-focused applications like Google's Big Table, or bibliographic database (library catalogue) systems may use a Column-oriented DBMS architecture.

Document-Oriented, XML, Knowledge bases, as well as frame databases and rdf-stores (Triple-Stores), may also use a combination of these architectures in their implementation.

Finally it should be noted that not all database have or need a database 'schema' (so called schema-less databases).

Over many years the database industry has been dominated by General Purpose database systems, which offer a wide range of functions that are applicable to many, if not most circumstances in modern data processing. These have been enhanced with extensible data types, pioneered in the Postage SQL project, to allow a very wide range of applications to be developed. A computer database relies upon software to organize the storage of data. This software is known as a database management system (DBMS). Database management systems are categorized according to the database model that they support. The model tends determine the query languages that are available to access the database. A great deal of the internal engineering of a DBMS, however, is independent of the data model, and is concerned with managing factors such as performance, concurrency, integrity, and recovery from hardware failures. In these areas there are large differences between products.

Relational database management systems implements the features of the relational model outlined above. In this context, Date's "Information Principle" states: "the entire information content of the database is represented in one and only one way. Namely as explicit values in column positions (attributes) and rows in relations (tuples). Therefore, there are no explicit pointers between related tables."

#### Ex.2. Guess the meaning of the underlined words.

#### Ex.3. Define *true* and *false* sentences:

- Many databases use a combination of strategies.
- The model tends determine the query languages that are not available to access the database.
- General Purpose database systems offer only one function that is applicable to many.
- DBMS is not independent of the data model.
- Over many years the database industry has been dominated by General Purpose database systems.

- (f) Finally it should be noted that all database need a database 'schema'.
- (g) There are explicit pointers between related tables.

**Ex.4. Answer the following questions:**

- (a) What strategy does On-line Transaction Processing system use?
- (b) What system is dominated during many years?
- (c) What does General Purpose database system offer?
- (d) What does computer database do?
- (e) What is DBMS?
- (f) What does Information Principle state?

**Ex.5. Ask your partner questions about:**

(a) On-line Transaction Processing systems; (b) DBMS; (c) library catalogue; (d) schema-less databases; (e) row-oriented data store architecture; (f) Google's Big Table; (g) hardware failures.

**Ex.6. Retell the text.**

**Ex.7. How do you understand the joke/ proverb? Discuss it with your partner.**

A Dell customer called to say he couldn't get his computer to fax anything. After 40 minutes of troubleshooting, the technician discovered the man was trying to fax a piece of paper by holding it in front of the monitor screen and hitting the "send" key.

**15. SST with TI**

**Grammar: Indirect Speech**

**Reported speech (1) (He said that ...)**

(косвенная речь 1)

Study this example situation:



You want to tell somebody else what Tom said. There are two ways of doing this:

You can repeat Tom's words (direct speech):  
Tom said 'I'm feeling ill.'

Or you can use reported speech:  
Tom said that he was feeling ill.

Compare:

direct:	Tom	said	'I am feeling ill.'	In writing we use ' and ' to show direct speech.
reported:	Tom that	said	he was feeling ill.	

When we use reported speech, the main verb of the sentence is usually past (Tom said that... / I told her that... etc.). The rest of the sentence is usually past too: Tom said that he was feeling ill.

You can leave out that: Tom said (that) he was feeling ill

In general, the Present form in direct speech changes to the Past form in reported speech:

am/is -> was	do/does -> did	will -> would
are -> were	have/has -> had	can -> could

want/like/know/go etc. -> wanted/liked/knew/went etc.

Compare direct speech and reported speech:

You met Judy. Here are some of the things she said to you in direct speech:

'My parents are very well.'

'I'm going to learn to drive.'

'John has given up his job.'

'I can't come to the party on Friday.'

'I want to go away for a holiday but I don't know where to go.' 'I'm going away for a few days. I'll phone you when I get back.'

Later you tell somebody what Judy said. You use reported speech:

Judy said that her parents were very well.

She said that she was going to learn to drive.

She said that John had given up his job.

She said that she couldn't come to the party on Friday.

She said that she wanted to go away for a holiday but (she) didn't know where to go.

She said that she was going away for a few days and would phone me when she got back.

The Past Simple (did / saw / knew etc.) can usually stay the same in reported speech, or you can change it to the Past Perfect (had done / had seen / had known etc.):



direct Tom said: 'I woke up feeling ill, so I didn't go to work.'

reported Tom said (that) he woke up feeling ill, so he didn't go to work.  
or  
Tom said (that) he had woken up feeling ill, so he hadn't gone to work.

It is not always necessary to change the verb when you use reported speech. If you report something and it is still true, you do not need to change the verb:

direct Tom said 'New York is more lively than London.'  
reported Tom said that New York is more lively than London.  
(New York is still more lively. The situation hasn't changed.)

direct Ann said 'I want to go to New York next year.'  
reported Ann said that she wants to go to New York next year.  
(Ann still wants to go to New York next year.)

Note that it is also correct to change the verb into the past:

Tom said that New York was more lively than London.

Ann said that she wanted to go to New York next year.

But you must use a past form when there is a difference between what was said and what is really true. Study this example situation:

You met Sonia a few days ago.  
She said: 'Jim is ill.' (direct speech)



Later that day you see Jim. He is looking well and carrying a tennis racket.

You say:  
'I didn't expect to see you, Jim. Sonia said you were ill.'  
(not 'Sonia said you are ill', because clearly he is not ill.)



### Say and tell

If you say who you are talking to, use tell:

Sonia told me that you were ill. (not 'Sonia said me')

**TELL SOMEBODY**

Otherwise use say:

Sonia said that you were ill. (not 'Sonia told that...') What did you say?

~~**SAY SOMEBODY**~~

But you can 'say something to somebody':

Ann said goodbye to me and left. (not 'Ann said me goodbye')

What did you say to the police?

Tell/ask somebody to do something We also use the infinitive (to do / to stay etc.) in reported speech, especially with tell and ask (for orders and requests):

direct 'Stay in bed for a few days,' the doctor said to me.  
reported The doctor told me to stay in bed for a few days.

direct 'Don't shout,' I said to Jim.  
reported I told Jim not to shout.

direct 'Please don't tell anybody what happened,' Ann said to me.  
reported Ann asked me not to tell anybody what (had) happened.

'...said to do something' is also possible:

The doctor said to stay in bed for a few days. (but not 'The doctor said me...')

**Test**

**Reported speech. Sequence of tenses**

**Choose the right variant**

1. She said that she \_\_\_\_\_ keep on drawing.

- a) was c) has been  
b) is d) were

2. I \_\_\_\_\_ her that I \_\_\_\_\_ time to play the piano.

- a) told, have no c) told, did not have  
b) tells, did not have d) told to, had not have

3. Jane answered that she \_\_\_\_\_ very early, so she \_\_\_\_\_ the news.

- a) went to bed, hadn't seen  
b) had gone to bed, hadn't seen  
c) has gone to bed, hasn't seen  
d) had gone to bed, didn't see

4. Mary told me that she \_\_\_\_\_ to leave for London the next week.

- a) is going c) were going  
b) has gone d) was going

5. I replied that I \_\_\_\_\_ her when I \_\_\_\_\_ back.

- a) will phone, got  
b) would phone, got  
c) will have phoned, will have come  
d) is to phone, get

6. Mary said that Paris \_\_\_\_\_ beautiful in spring.

- a) is c) was  
b) has been d) were

7. The teacher\_\_\_\_\_a report on the Civil War.  
 a) told Jane to make           c) told Jane make  
 b) tell to Jane to make       d) told to Jane to make
8. Jane\_\_\_\_\_worry about her health.  
 a) ask to me not to           c) asked me not to  
 b) asked to not               d) asked not
9. I said that I\_\_\_\_\_if I\_\_\_\_\_time.  
 a) will go, have               c) would go, have had  
 b) would go, had              d) will go, had
10. Mary answered that she\_\_\_\_\_wake up early in the morning when she was young.  
 a) did get used to             c) gets used to  
 b) is getting used to         d) used
11. Jane told me\_\_\_\_\_calm.  
 a) to stay                      c) to have stayed  
 b) stay                         d) staying
12. I am surprised to see you. Your mother said you\_\_\_\_\_ ill.  
 a) were                         c) has been  
 b) are                          d) had been
13. She said that Mary\_\_\_\_\_into her flat because she \_\_\_\_\_her key.  
 a) cannot get, lost            c) couldn't get, had lost  
 b) couldn't get, has lost     d) can't get, was losing
14. Jane told everybody that she\_\_\_\_\_a meeting\_\_\_\_\_.  
 a) had, tomorrow  
 b) was having, tomorrow  
 c) will have, the next day  
 d) was having, the next day
15. Mary told me that writing a test\_\_\_\_\_her nervous.  
 a) is making                  c) will make  
 b) made                        d) make
16. He said that he\_\_\_\_\_in America for two years.  
 a) lived                        c) had been living  
 b) had lived                  d) lives
17. They said that we\_\_\_\_\_when Mary\_\_\_\_\_.  
 a) would leave, came         c) will leave, came  
 b) would leave, comes       d) would leave, had come
18. Jane told me that Africa\_\_\_\_\_than America.  
 a) was nicer                  c) is being nicer  
 b) has been nicer             d) is nicer
19. I told everyone that I \_\_\_\_\_to the party at ten, but \_\_\_\_\_as soon as possible.  
 a) couldn't come, would arrive  
 b) can't come, would arrive  
 c) couldn't come, arrive  
 d) can't come, will arrive
20. "How are your parents?" she asked. I answered that they \_\_\_\_\_ very well.  
 a) were                         c) have been  
 b) are                          d) were being

21. — The play is boring.

— Is it? I thought you said it \_\_\_\_\_ exciting!

- a) is
- b) were
- c) was
- d) had been

22. Mary told me that she \_\_\_\_\_ Helen in the park and that she \_\_\_\_\_ fine.

- a) saw, had seemed
- b) had seen, had seemed
- c) had seen, seemed
- d) has seen, was seeming

23. He said that his car \_\_\_\_\_ a few days ago.

- a) was stolen
- b) has been stolen
- c) had been stolen
- d) is stolen

24. Jane told me that I \_\_\_\_\_ at her house if I \_\_\_\_\_ ever in Paris.

- a) could stay, was
- b) could stay, was
- c) can to stay, was
- d) can to stay, was

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