MINISTRY FOR DEVELOPMENT OF INFORMATION TECHNOLOGIES AND COMMUNICATIONS OF THE REPUBLIC OF UZBEKISTAN

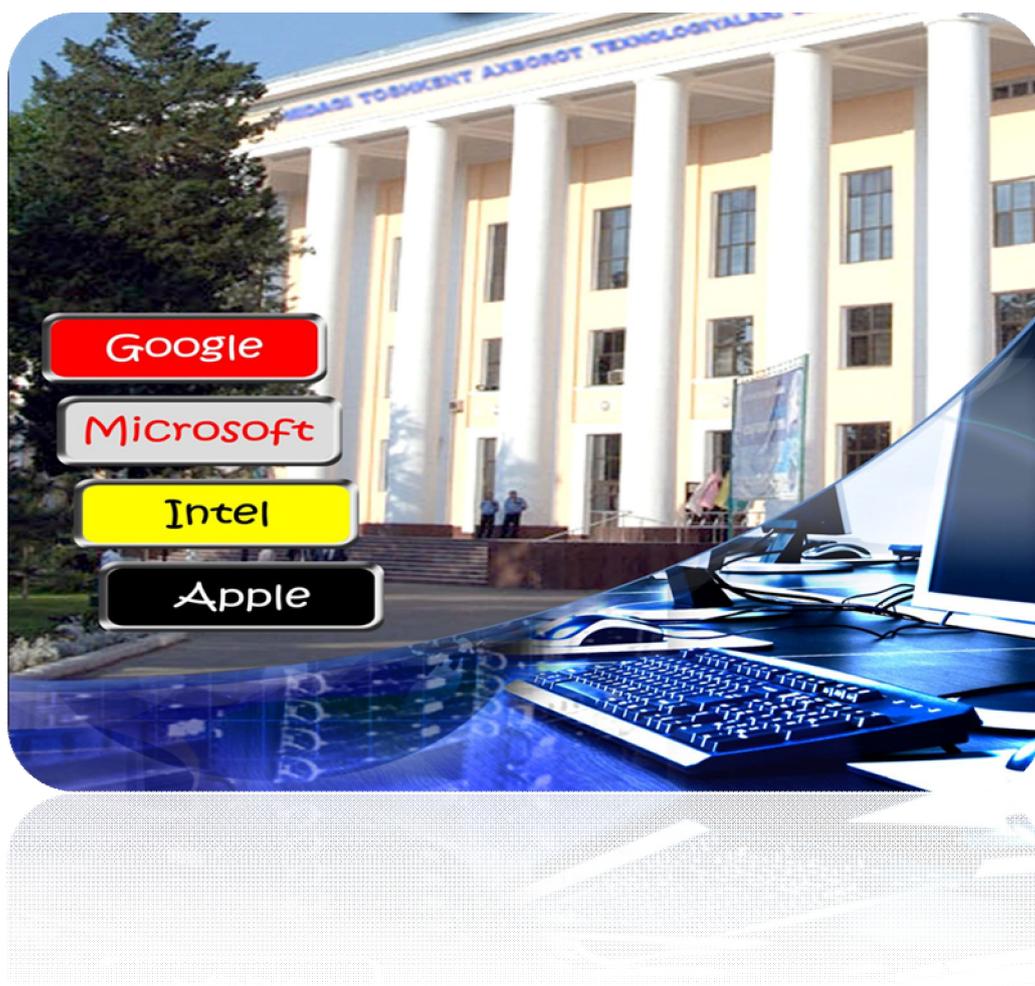# TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES NAMED AFTER MUHAMMAD AL-KHWARIZMI

"FOREIGN LANGUAGES" DEPARTMENT

G. SULEYMANOVA

"IT RELATED ENGLISH"

The methodical manual for the third year students of IT direction

Tashkent-2018

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"IT RELATED ENGLISH" for the third year students of IT direction.
 Manual. – T.:TUIT,2018. -176 p.

Preface

After gaining independence, much attention is paid to the development of the education sector in the Republic of Uzbekistan; especially significant attention is paid to the education and upbringing of the youth. To correspond the standards of higher education in Uzbekistan to the world standards, modern educational methods are implemented in the education system and new innovative approaches are introduced into the curricula of the educational process. For this reason, the creation of new generation educational textbooks and manuals in higher education institutions is a requirement of the time. The creation of the textbook "IT-Related English" is the proof of the above.

This manual is intended for students studying English in the direction of (IT) information technology. The manual consists of 6 units and each unit consists of 3 lessons, which include IT texts, tasks for speaking and listening, topic-related words and phrases on information technology as well as glossary. Exercises of the lessons are interactive and authentic, and there are tables and diagrams as well. Each lesson consists of assignments for the development of writing skills, in particular, essays.

The assignments are intended both for self-study and for working in groups that are aimed at developing analytical and critical thinking, and for expanding the outlook of the learners. Such approach allows not only to allocate the teacher's and student's time in the process of training, but also improves the effectiveness of classes, as well as it contributes to students formation as a personality, to be able to prove their thoughts and defend their points of view.

CONTENTS

Lesson 1   **INVALUABLE HERITAGE**

Work in pairs. Discuss the statements.

- **"**Al-Khwarizmi is the grandfather of Computer Science.|"

- Algebra and algorithms are enabling the building of computers, and the creation of encryption.

- The modern technology industry would not exist without the contributions of Muslim mathematicians like Al-Khwarizmi.

1. Discuss the questions.

1. What is the causal relationship between the pictures?
2. What is Al-Khwarizmi's contribution?
3. What is algebra?
4. Algebra was applied for solving problems in the Islamic empire at that time. What kind of problems could that practical system solve?
5. Why do we need studying algebra?
6. What exact sciences are taught the university you study at?

2. List the names of other famous people of orient and their contribution to the development of science.

*e.g. **Omar Khayyam** made an attempt to classify most algebraic equations, including the third degree equations and, in fact, offered solutions for a number of them. In geometry, he contributed to the theory of parallel lines.*

1._____

2._____

3._____

🔊 **3. (T1) Listen to the "Uzbekistan Today" news and answer the questions:**

1. When was the Tashkent University of Information technologies (TUIT) named after the great scientist and thinker Muhammad al-Khwarizmi?

2. What measures does the Decree of the President of Uzbekistan focus on?

3. What important events related to the perpetuation of wide study of Muhammad al-Khwarizmi's heritage are planned at TUIT?

🔊 **4. Listen again, decide if the statements are True (T) /False (F).**

1. Our government is doing a lot for creating favorable conditions for the education of young people. **True /False**

2. The system of training highly qualified specialists in ICT for major industries and sectors of economy of the Republic is planned to be improved. **True /False**

3."The Book of pictures of the Earth» was written in Arabic. **True /False**

4. The astrolabe device served in the Middle Ages for the observation of the starry sky. **True /False**

5. Al Khwarizmi ranks as the earliest historians who wrote in Arabic because "Book of chronology" is mentioned in several medieval writings. **True /False**

5. **<u>Underline</u> unknown words from the box below and guess their meaning. Consult the dictionary if necessary.**

> **exact sciences, to deal with, treatise, root, medieval, quadratic equations, to rank, the unknown quantity, diamond, truncated, square pyramid.**

6. Read the text and answer the questions below.

Muhammad ibn Musa al-Khwarizmi occupies an important place among the Central Asian scholars, whose names are entered into the history of the exact sciences. In the IX century, at the dawn of medieval East science, he made a great contribution to the development of arithmetic and algebra, gave the rules for calculating the area of a square, triangle, and diamond. It gives rules for calculating volume, including the truncated square pyramid.

The modern name of algebra comes from the word al-jabr. And there was the word algorithm, on behalf of Al-Khwarizmi. The diverse research interests Al Khwarizmi dealt with mathematics, theoretical and practical astronomy, geography and history. Not all the works written by him, survived, it found Al Khwarizmi was the author of nine works, and from these writings come down to us only seven.

The algebraic treatise of al-Khwarizmi is known under the title: "Brief book replenishment and opposition"(in Arabic). It consists of two parts - theoretical and practical. The first one presents the theory of linear and quadratic equations, as well as addresses some issues of geometry.

The algebraic methods applied to solve specific household, commercial and legal problems are in the second part. In the introduction al-Khwarizmi said what prompted him to take up writing an essay: "I made a brief book on calculus algebra and almukabala embodying simple and complex arithmetic questions, because it is necessary for people in the division of the inheritance, drafting wills, division of property and court cases, and all kinds of trade transactions, as well as in land measurement, carrying channels, geometry, and other species of similar cases." Thus, it stressed that with the help of algebraic methods various application tasks can be solved. Further, Al Khwarizmi shows which numbers are used in algebra. If the arithmetic operates with ordinary numbers which «are made up of units, » that appear in the algebra of a special kind - the unknown quantity, its square and the free term of the equation. Unknown quantities of al Khwarizmi describes the term "root" (Jisr) and gives the definition: "The root - is everything, multiplied by itself, whether it is a number equal to or greater than one, or a fraction lower it." The term "root" is the translation of the Sanskrit word "mule" ("root of the plant"), which refers to the unknown in the equation of Indian mathematics. The greatest glory in the history of science, Al- Khwarizmi brought his mathematical writings.

7. Answer the questions

1. What is the origin of the word 'algebra'?
2. What does the word algorithm mean?
3. How many writings of al-Khwarizmi arrived to us?
4. What is known under the title: "Brief book replenishment and opposition"?

5. What parts does the mathematic treatise consist of?
6. What does the term "root" (Jisr) mean?

8. Find the words in the text with the similar meaning.

1. triumph _____
2. include_____
3. make someone to do something(a word)_____
4. accomplishment _____
5. thoroughly _____
6. coeval _____
7. stranger_____
8. craft _____
9. bargain _____
10. uniting _____

9. Discuss in groups Al Khwarizmi's contribution to the development of arithmetic and algebra. Share the ideas with the class.

10. Read any article related to your field of study and fill in the form. (See the example of an Article Review)

Article Review

Title: *In touch with the World*

Author ('s) Name(s): *Ravshan Rustamov*

Date of article: *September 8, 2017*

Main Topic: *Joint implementation of projects in digital economy and e-government*

Three new facts you learned:

1) *creation of a cross border telecommunications network into a single digital hub*

2) *improvement of internet access for the landlocked countries*

3) *the development of software products in the Innovation Center*

What was the most interesting for you: *the expected effect has been already designed –residents of the post-Soviet south will get access to cheap broadband internet through alternative networks*

Would I recommend this article to a friend? *Yes/ No .(If no ,why not?) It was useful for my future specialty. The article is very stimulating as it is scheduled to continue consultations promising projects on digital economy and e- government.*

1. Title of the article: _____

The author:_____

The name of journal: _____

Publication information: date, volume, issue, page, numbers, publishing house: _____

2. Short introduction and overview of the article:_____

3. Explanatory statement about how well the author addressed the topic_____

4. Summary of the main points of the article and your opinions about its significance, accuracy and clarity: _____

Which early devices are shown in these pictures?
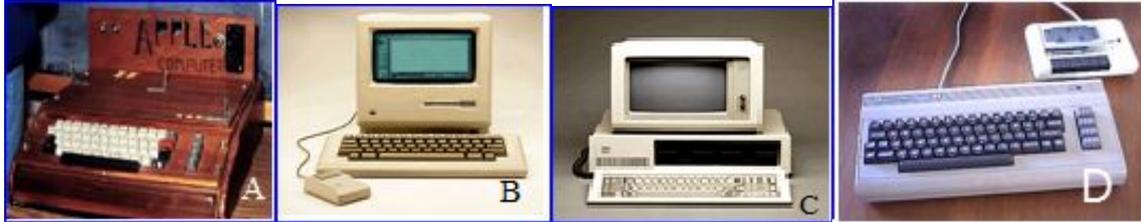
Discuss in pairs the following questions.

1. What facts about the early inventions can you mention?

2. What is their role in the development of computers?

3. What was the very first calculating device?

4. How long have mechanical examples of computers existed?

5. When were the first electronic computers developed?

6. What does the computer history hold?

7. How did the different types of computers evolve?

🔊 **1. (T2) Listen to the guide's speech of the Museum of the History of computers   about the early devices and complete the table.**

Invention	Purpose	Significance
e.g. abacus	Mathematical computations	It aids the memory of the human performing the calculation.

◀)) **2. Listen to the tape again and answer the questions.**

  1. What is abacus? What was it used for?

  2. Whose ideas were used to produce logarithm?

  3. What was invented by Sir Isaac Newton and Leibnitz?

  4. What did Charles Babbage design?

  5. When was the first analog computer built? How did people use it?

  6. Who built the first digital computer?

3. <u>Underline</u> **unknown words and word combinations from the box below and guess their meaning. Consult the dictionary if necessary.**

> **punched cards, vacuum tubes, assembly language, bulky, computing, integrated circuits, to introduce, to be capable of doing something, voice recognition.**

4. **Undertake a technological journey "EVOLUTION of COMPUTERS". Read the presented information and discuss the questions below.**

FIRST GENERATION COMPUTERS

- Vacuum tubes
- Were expensive and bulky
- Used machine language for computing

SECOND GENERATION COMPUTERS

- Transistors
- Punched cards for input
- Assembly language for computing

THIRD GENERATION COMPUTERS
- Integrated circuits
- Operating system as user interface to computing
- Increased speed and efficiency

FOURTH GENERATION COMPUTERS
- Microprocessors were introduced

FIFTH GENERATION COMPUTERS
- Capable of parallel processing
- Support voice recognition
- Understand natural language
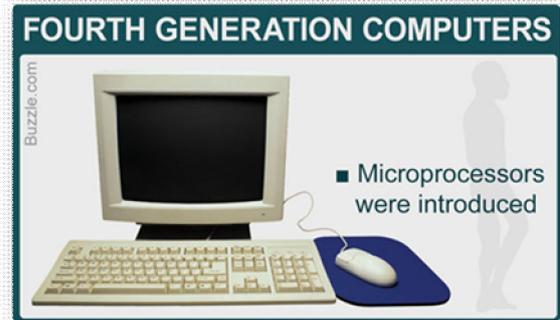
5. Find the answers to the following questions:

1. How did the first generation of computers work?

2. What are the differences between 1G and the 2G computers?

3. Why could 3G computers do a million calculations a second, which is 1000 times faster than the first generation computers?

4. What is the fourth-generation computer?

5. What is the next generation of computers?

7. Read the sentences, decide if the statements are True (T) or False (F).

1. The reason for the extra speed was the use of transistors instead of vacuum tubes in the first generation of computers.   **True / False**

2. The second generation of computers was developed and could perform work ten times faster than their predecessors.   **True / False**

3. Unlike the second-generation computers, the third-generation computers controlled by tiny integrated circuits. **True / False**

4. The third-generation computers faster than the first generation computers. **True / False**

5. 'Microprocessor' is the main concept behind the fourth generation of computer, which is used in a computer for any arithmetical or logical functions to be performed in any program. **True / False**

6. With the use of microprocessor in the fourth generation computers, the size of computer becomes very fast and efficient. **True / False**

7. The 5G computers are in their development phase. They would be capable of massive parallel processing, support voice recognition.

True / False

8. The fifth generation computers will possess artificial intelligence and it would be able to take self decisions like a human being. **True / False**

7. Match the definitions (1-10) and their synonyms (a-j).

1. tiny	**h**	a) mechanical
2. tedious		b) facilities
3. required		c) speaker identification
4. independently		d) needed
5. increased		e) without assistance
6. a predecessor		f) anancestor
8. imprinted		g) impressed
9. aids		h) small
10. automatic		i) monotonous
10. speech recognition		j) grown

8. Learn the poem about the gadgets below. Discuss what message the poem carries through the following phrases. Paraphrase them.

> - Part of our essence
>
> - Tells us fine stories as it has wit
>
> - Applications galore to entertain and make us productive
>
> - We write on it
>
> - Waste our lives with it
>
> - iPhones, iPads, iPods now their escort

GADGETS NOW

This new technology
Part of our essence
Part of our physiology
An inseparable alliance
It wakes us up in the morning
It tells us when and what to do
It has 30 alarm rings
It buzzes when money is due
We write on it
We plan our trips with it
We calculate with it
We get directions from it
We cook with it
It sings songs to us
Tells us fine stories as it has wit
Makes us perfect no need to guess
We watch movies with it
We play video games with it
We play chess and cards with it
Waste our lives with it
Applications galore
To entertain and make us productive
It's all there no need to go to the video store
Has it taken over our lives and is it destructive?
Kids now not playing sports
Not climbing trees not being active
iPhones, iPads ,iPods now their escort
Will they control us with their directive?

9. Discuss the last question from the poem with your partner. Give details to support your answer and share your opinions in groups.

11. Form derivatives with the following words:

Model: to process – processor – processing- processed

to control	to compare	to develop
to manage	to destroy	to charge
to access	to require	to produce
to apply	to act	to transfer
to protect	to provide	to support

10. Write an opinion essay about the future of computers. Use these steps and transitional connectives in the box.

> *Expressing opinion:* **In my opinion,…I believe that,.. It seems to me that…** *Adding arguments:* **In addition, furthermore,…**
> *Conclusion:* **To sum up, in conclusion**

Introduction: *Present the topic in one or two sentences*_____

_____

The body *(2 or 3paragraphs with facts and examples):*_____

_____

Paragraph1: **_____**

_____

Paragraph2: **_____**

Conclusion: *Summarize your main ideas and opinions*_____

_____

Discuss the following questions in group:

1. What is a computer? Does a computer take an essential part in your life? Why?

2. What types of computers do you know?

3. How often do you use a computer at home or at the university?

4. What do you use it for?

5. Do you find most computers user-friendly? Why / Why not?

6. What software programs are you familiar with?

Find the item in the picture and write the corresponding letter next to the word.

☐ Desktop PC   ☐ Mainframe

☐ PDA   ☐ Super PC
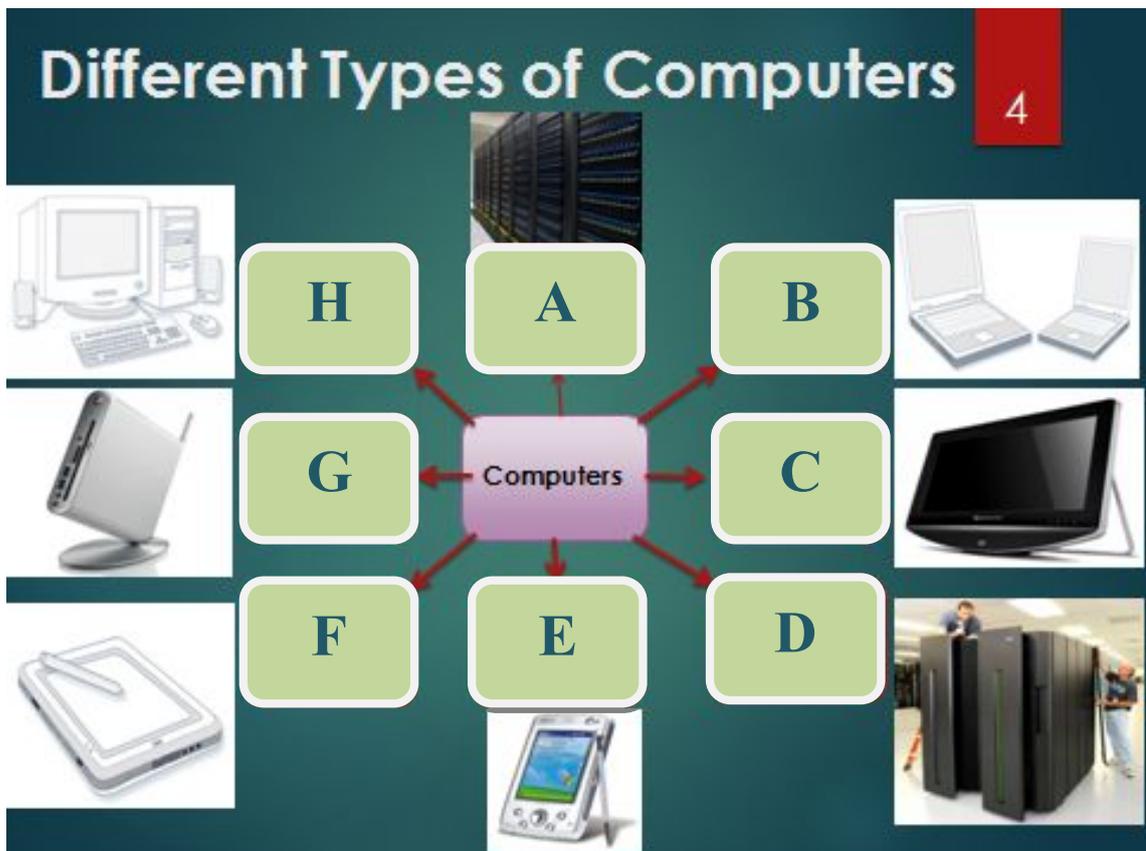
☐ Tablet PC   ☐ All in one

☐ Laptop and Netbook ☐ NET top

🔊 **1.(T3) Listen to the tape and make a list of advantages and disadvantages of computers. Check the answers with your partner.**

Advantages:	Disadvantages
e.g. Computers are user-friendly. _____	**e.g.** Computers are dangerous to our health. _____
_____	Computers sometimes break down and you can lose your data.
Computers saves storage place.	_____
_____	_____
_____	The other threat is that you can be a computer addict.
Computers can calculate and process information faster and more accurate than a human.	_____

🔊**2. Listen again and discuss in groups the role of computers in our daily life.**

3. <u>Underline</u> unknown words from the box below and guess their meaning. Consult the dictionary if necessary.

> relevant, endless, creativity, curriculum, to simplify, to deny, broadband, real-time ,boundary, facilities , enroll, opportunity, provide

4. Read the text and discuss in class the effectiveness of computer technology in education.

With the recent advancement in the education industry, the use of computers in education has become relevant. Computers play a great role in helping students learn faster and they also increase the level of creativity of students because of the endless equations they present to a student. Teachers use computers to create graphic illustrations which can help students learn easily, yet students use computers in typing of notes and reading of electronic books which can be downloaded from the internet. However, educational curriculum should not replace teachers with computers, because a computer is just a tool which can be of no function without a teacher's guide. This means that we shall still need and will always need to have teachers in the classrooms, but use computers to help them do their job easily and also attract students to get involved in academic activities. The exact effectiveness of computers is not yet clear, but it cannot be denied that they have simplified the way we learn. Computer technology can be used in real time education. With the use of broadband internet, teachers and students can get real-time example on

specific subjects. This makes learning easy because students can easily interact with those live examples, which simplifies the way they learn.

Without computers, educational facilities like" online education" would be next to impossible. Many universities have added online education on their curriculum and they enroll students from all parts of the world. This has opened boundaries to so many students, who have got the opportunity to study advanced courses which are not provided in their universities. Also adults who want to continue with education have embraced the online education system, because it allows them to learn at any time and also give them the freedom to work.

5. Answer the questions. Check them with your partner.

1. What ways do students and teachers embrace the potential of computer technology for personal, business or educational advancement?

2. Do you think educational curriculum should replace teachers with computers? Why? / Why not?

3. How can computers empower students to become intellectual explorers?

4. How do you understand   the difference between real time education and online education?

 5. What are opportunities of long distance learning education?

6. Read the sentences and decide if the following statements are True (T) or False (F).

1. The use of computers in educational process has become important to learners.   **True/False**

2. A computer is a pure tool which can be of no function without a teacher's guide.   **True/False**

3. Neither universities nor colleges have added online education on their educational curriculum. **True/False**

4. The use of broadband internet simplifies the way students learn.

True/False

5. Distance learning courses gives great possibilities for adult education.

True/False

7. Match the words on the left from (1-8) with the definitions on the right from (A-H).

1.	advancement	B	A. inventiveness
2.	creativity		B. improvement
3.	curriculum		C. data is available virtually immediately as feedback to the process from which it is coming
4.	to enroll		D. to contain (something) as a constituent part
5.	to simplify		E. the subjects comprising a course of study
6.	real-time		F. to make less complicated
7.	to embrace		G. a special feature of a service, which offers the opportunity to do or benefit from something
8.	facility		H. to register as a student on a course

8. Look through the suggested collocations and guess their meaning. This may help you to increase the comprehension of the following task.

> **launch a program, customize your desktop, arrange the icons on the desktop, put the file on a USB memory key, view as a web page**

9. Match the verbs with possible words/phrases in each box. Work in pairs.

1.

	a file
down load	a software
	a hardware

2.

	your software
up grade	your hardware
	the menu

3.

	a new scanner
create	a new document
	a new password

4.

	Anapp
pull down	a menu
	a document

5.

	a file
attach	an e-mail
	a document

6.

	all folders
log off	after session
	on a USB memory key

7.

	a window
open	the document in a new window
	some text

8.

	text in a new document
send	the file to a different folder
	a program

✍ **10. Write a complaint letter (See the Example of Complaint) .**

Dear Sir/Madam,

(Paragraph1) The reason I am writing to you is poor quality of a food processor, which I bought in your store two weeks ago. After only two times it was in use, problems started to appear

(Paragraph 2a) The first malfunction that I noticed was safety lock that demanded applying of great force. My daughter had to ask me for help, because she wasn't strong enough to push the safety lock through. We discovered another problem when tried to use the blender. I put some ice-cream and milk in the blender and pushed the "Start" button. It started working but suddenly got stuck and we were unable to use it since.

(Paragraph 2b)I was very surprised to discover that much problems in a quite expensive model.

(Paragraph 2c) Naturally, I returned the blender to you to be replaced with a new one. Your assistant said that I would have to wait only a week. After two weeks the food processor had still not arrived. Finally, four weeks later, I was contacted by your representative.

(Paragraph 2d)Imagine my feelings when I learned from him that I can not receive the same model of food processor as I bought. As a solution he offered that I upgrade my model to a better one and this too will take two weeks.

(Paragraph 3) I am very disappointed with both the equipment and the service have I received. Therefore, I expect a full refund of 200.000 sums as soon as possible.

Yours faithfully,
Mr. Sultanov

Lesson 4   IT in OUR LIFE

Work in pairs. Give as many words as possible related to information technology

Comment on the following quote.

"As life and technology merge, they will both become more interesting."

(Glenn Zorpette and Carol Ezzell)

1. Discuss the questions with your partner.

• What changes have taken place in our life with the advancement of technology?

• Do you think technology makes your life easier ? Give examples .

• Is the advancement of technology always a good thing ? Why/ Why not?

2. Look at the diagram and explain the use of IT in different fields. Discuss in groups other applications of IT.
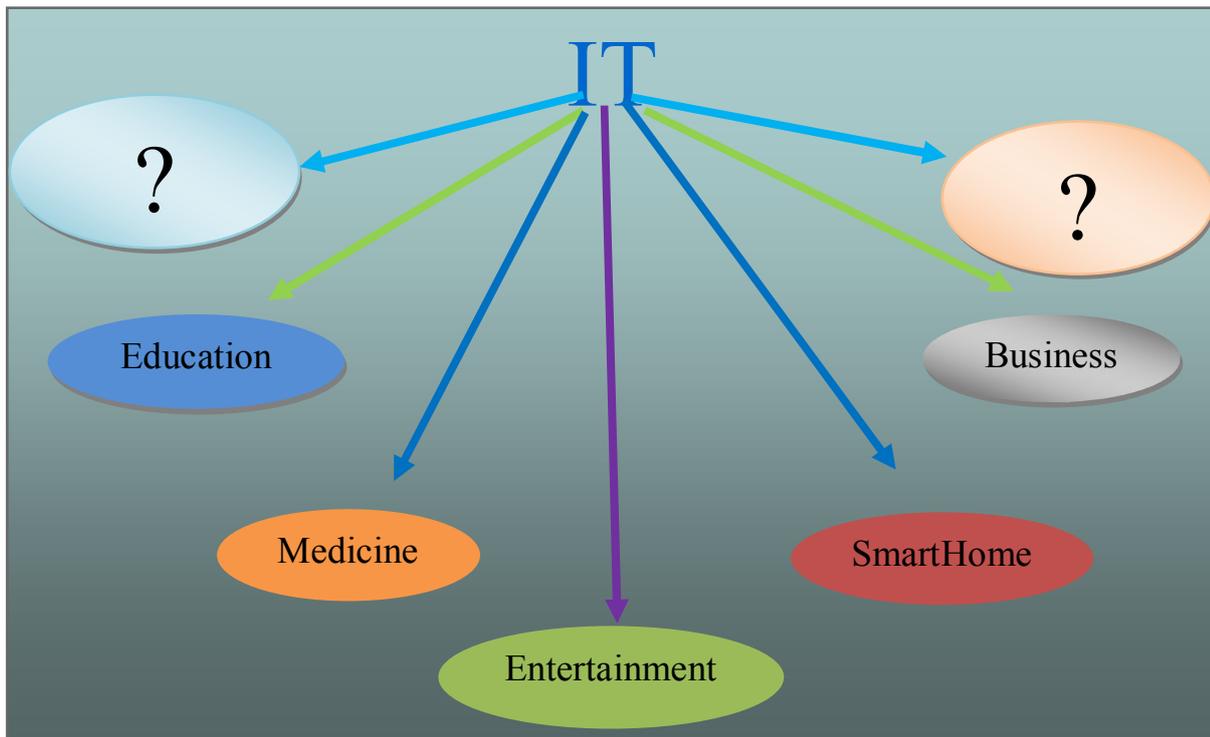
3. Discuss in pairs. Which areas of IT do you find the most interesting and why?

🔊 **4. (T4) Listen to the text about Uzbekistan's famous Company producing home appliances and find answers to the following questions.**

1. When was Artel put into operation?
2. What was the purpose of establishing a new business line in Uzbekistan?
3. What is the basic principle of Artel ?
4. What kind of appliances does Artel offer to Uzbekistan's consumers?
5. Do you think Artel home appliances meet all the requirements of our people? Why?/ Why not?
6. What kind of qualities should each employee of Artel possess?
7. How do you understand KAIZEN method?

🔊 **5. Listen again and match mentioned Artel's offered appliances. Have you ever bought any of them? If yes, describe one domestic electric appliance. How often do you use it?**

☑ Vacuum cleaners	☐TV sets
☐Printers	☐Stove heating
☐Gas, electric and combined stoves	☐Built-in kitchen appliances
	☐Refrigerators
☐DVDs	☐CDs
☐ Electric mini-ovens	☐Vacuum cleaners
☐Cameras	☐Laptops
☐ Scanners	☐Washing machines
☐ Air conditioners	☐Cellular phones
☐ Microwave ovens	

6. Role play-Buying a computer. Work in pairs. Imagine you are a customer in a computer shop and you don't know what model to buy.

Steps to follow:

1. Explain a shop assistant what you are looking for.

2. Ask for technical specifications about the product:
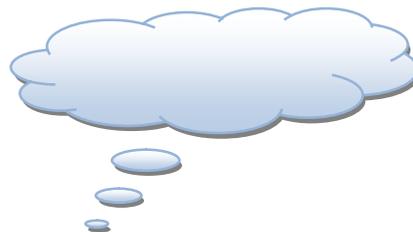
Processor speed RAM

Hard drive capacity

DVD drive

Operating system

Internet connectivity

3. Ask the price of the chosen model.

4. Explain your choice to your group mates! Enjoy your digital life!

7. <u>Underline</u> **unknown words from the box below and guess their meaning. Consult the dictionary if necessary.**

exponential, to store, to conceive, to process, to secure, to transmit, to retrieve, fore mentioned, predominantly, paramount, authentic, widespread, to couple, to covet, apotheosis, impairment, flexibility

8. Read the text dealing with Information Technology and discuss in class the   importance of IT.

The demand for IT in Uzbekistan is expected to grow tremendously. Exponential growth in computing power will unlock further applications of Information Technology. IT is used for storing, protecting, processing, securing, transmitting, receiving, and retrieving information. In business establishments, it is used predominantly to solve mathematical and logical problems. IT helps in project management systems as well. Firstly, planning is done, then the data is collected, sorted and processed, and finally, results are generated. It helps managers, and workers to inquire about a particular problem, conceive its complexity, and generate new products and services; thereby, improving their productivity and output. The primary importance of IT with regards to education is that various learning resources can be accessed instantly by students as well as teachers, with paramount importance laid on the convenience factor. Learners can also adapt to the multimedia approach, coupled with collaborative learning. The information is authentic with the updated information being widespread in terms of availability. Multiple communication approaches, like, chats, forums, emails, etc., can be adopted by them. Students may access the online libraries, in turn having distance learning programs perform a successful feat. In addition, many

people with knowledge of computers have got jobs in this field, and have successfully made a career out of it. Different kinds of software are provided for individuals with visual or hearing impairment; thereby, aiding them in their passion to learn new concepts, and gather information parallel to their subject of interest. The IT sector has been coveted the apotheosis of flexibility. IT has developed tremendously and will continue doing so in/for the future.

9. Read the text again and decide if the statements are True (T) or False (F).

1. Exponential growth in computing power will display further applications of IT. **True/False**

2. IT generates new products and services improving their productivity and output. **True/False**

3. Various resources can be accessed by learners with the use of IT.
True/False

4. People who deal with computers can successfully make a career in IT sphere. **True/False**

5. Students can access the digital libraries and distance learning programs.
True/False

6. It is difficult for learners to adapt to the multimedia approach, associated with collaborative learning. **True/False**

7. Different kinds of software can be an obstacle for disabled people in the way of gathering data parallel to their subject of interest.
True/False

10. Match the words 1-9 from column A with the words a-g from column B.

A	B
1.support hardware	a) word-processing software
2.initial loading program	b) central processing unit
3.text processor	c) inessential data
4.fresh information	d) educational software
5.teaching program	e) startup software
6.irrelevant information	f) ancillary equipment
7.central data processor	g) latest news

11. Discuss in pairs how IT is used in the are as shown below, make your own topic related presentation. Share opinions.

1. Education
2. Entertainment
3. Engineering
4. Medicine
5. Mathematics
6. Business
7. Scientific research

12. Useful tips for structuring a presentation:

Welcome the audience → Introduce yourself → Introduce the topic → Tell the audience → Give an overview of the topic → Main points → Concluding the presentation why you are in terested in the topic
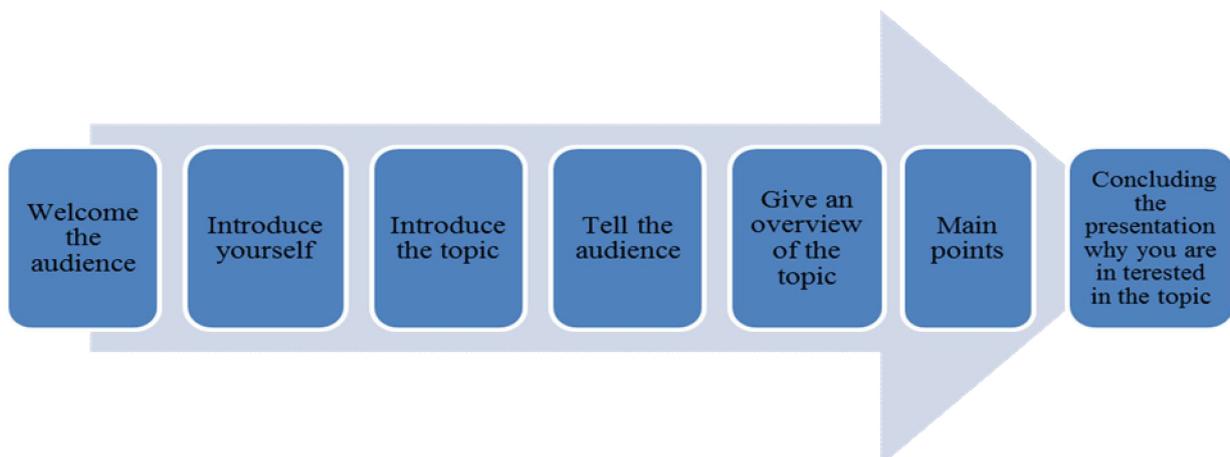
✍ 13. Choose one of the spheres shown in Task 11 and summarize your ideas how IT is used in different areas and what for. See the example.

Example # IT in Education:

It is difficult to overestimate the huge advantages of IT in modern life. Despite the most obvious ones like being able to store all the necessary documents in one tiny device, computers help to broaden the minds of modern society. New information technologies are really useful for people's education and development. Why are computers so indispensible?

The primary importance of IT with regards to education is that various learning resources can be accessed instantly by students as well as teachers, with paramount importance laid on the convenience factor. Learners can also adapt to the multimedia approach, coupled with collaborative learning. The information is authentic with the updated information being widespread in terms of availability. Students may access the online libraries, in turn having distance learning programs perform a successful feat.

Work in pairs. Discuss the pictures and name the professions.

JOBS
in IT
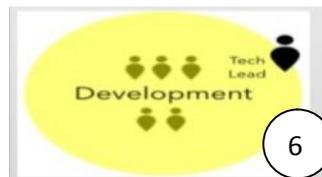
Discuss the questions with your partner.

1. What do these people do?

2. What are their responsibilities?

3. What other professions of IT sphere do you know?

🔊 **1. (T5) Listen to the text about IT professions and answer the questions:**

1. Who is responsible for a company's IT goals?

2. Who is charged with the duty of controlling a multi-user computing environment?

3. What does the team leader monitor for the purpose of achieving a key result?

4. Does a software expert dictate technical standards and platforms?

5. What do you know about a computer programming specialist?

6. What are the programmer's responsibilities?

🔊 **2. Listen again. Discuss in pairs. What knowledge and skills IT specialists should have according to the text.**

Introduction to IT professions

👤 **3. Read the text about different fields people are engaged in and match them with proper professions according to their descriptions:**

> 1. Design and development professions
> 2. Consulting professions
> 3. Management professions
> 4. Teaching and training professions
> 5. Marketing professions
> 6. Operation and production professions

a. The goal of these professions is to help a group of individuals acquire practical and theoretical knowledge in a given domain, with an eye on improving their vocational practice._____

b. This group includes all people whose job is to check that information systems and networks are working properly, to help users to use new technology, and to fix any problems that they may have._____

c. These types of professions require a certain degree of experience, so as to be able to study existing needs and solutions within a business in order to help implement a new structure. The main fields of application are information systems and computer security. _____

d. These professions are largely business-oriented, aim to optimize sales of a company's products and services, based on identifying and fulfilling customers' needs, finding new customers, and building customer loyalty._____

e. Management rests on the ability to define a strategy and manage an organization's resources so as to meet goals which have been set. Such professions generally require skills in project management, human resources management, and financial management._____

f. These types of professions involve assessing a need, designing solutions, modeling them with computer assistance and implementing them, i.e. translating them into a computer language. These professions combine the ability to analyze with a creative and technical mind. _____.

4. Read the text again and discuss in groups which professions do you find the most and least interesting and why?

Brief information of IT professions

5. Match the professions (1-8) with the their definitions (a-h):

1 .Team leader	**a.** Specialist who similarly to detective the observes and examines how application works, and looking for mistakes
2. Business analyst	**b**. They remind stewards, because their primary goal is to establish and ensure the stable operation of the computer park

3.Developer	**c**. First phases of any construction is projecting and designing the object. That's exactly what software architects do, but for informational systems.
4. Designer	**d.**"Platoon commander" who leads project workflow. He sets goals, monitors their progress and resolves operational issues.
5. System administrator	**e.**"Digital"artist who creates interface of programs, websites, applications, etc. His main task is to make create design that would solve the user's problems.
6.Tester (QA)	**f.** Engineer that is involved in "construction" of "IT-facilities" - coding using some programming language (eg, Java, PHP, Python).
7. Project manager	**g.** A "naturalist" who analyzes business and processes those need to be automated. Describing and structuring them, he tries not to miss anything important and "discover the laws of nature" that allow other

	project members to quickly understand what they are dealing with.
8. Software architect	**h.** Foreman who manages team of developers and understands technical details, controls the quality of the work and solves the most difficult tasks of the project.

6. Look at the pictures and explain why these new skills are in demand in the world nowadays. Discuss in groups.

Leadership   Digital literacy Communication Emotional Intelligence
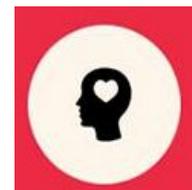
Entrepreneurship   Citizenship   Problem solving   Team-working
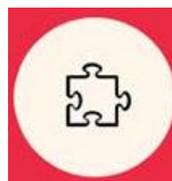
7. Answer the questions and share your opinions in the group.

1. What kind of requirements do you need to be a good specialist?

2. Why is it important the English language acquisition?

3. What skills and knowledge are the most important?

4. Have you ever been interviewed? If yes, how did you feel?

5. Imagine you are having a job interview. What questions are you asked?

8. Choose the words from the box that can go in front of "job". Use a dictionary to help you.

Ex. part-time job

> ~~part- time~~ overtime   permanent   contract   employee   full-time
> sometimes

✍ **9. CV writing. Design your own CV (*the example is given for you*).**

CURRICULUM VITAE

Personal information Name	ZiyadinovTimurRustamovich
Date of birth	March 26, 1979
Address	Karmanad st., Tashkent str. 36,Navoi
Telephone	+99890912 97 95
E-mail	siydinovtr@rambler.ru
Education and Training 2006 2002 1996-2001 **Work experience** September 2008 up to now August 2006-2008	Course in web design at Uzbek-Indian Information Technologies Center. Course in computer hardware and networking at TUIT. Degree in Computer Science , TUIT Tashkent College of IT T, a teacher of programming and Informatics Navoi school-gymnasium # 1, Informatics teacher

Skills and personal characteristics	
Languages:	Russian, English, Uzbek
Computer skills:	Microsoft Office, Internet/Email, , C++, Python, Delphi.JAVA
General:	Responsible, sociable, hard working, creative
Hobbies and interests:	Sport, fishing, reading, traveling, doing crosswords
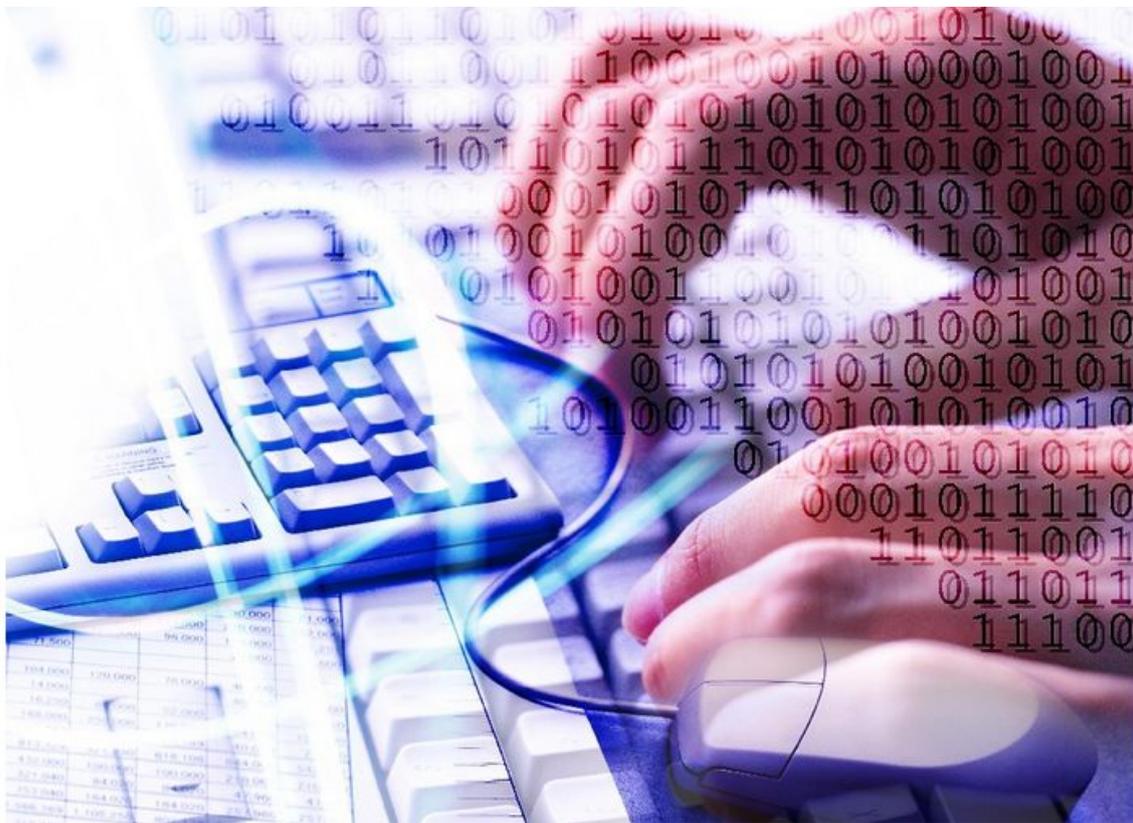
Discuss the questions in pairs.

How are you going to launch a career?

Do you think to be an IT specialist is a promising career? Why/ Why not?

Look and talk about the 21st century skills and answer the questions.

Work in pairs.

1. What kind of learner are you?

2. What skills and knowledge are the most important for choosing a career?

1. **The websites below can be used as networking opportunities in choosing a career. Give the information and recommend your frequently visited websites and explain their significance to your group mates.**

OLX.uz

Linked in facebook DOSTANG
where talent lives

🔊 **2. (T6) Listen to the academic advisor and put down the recommendations you find wholesome for your career.**

1._____

2._____

3._____

🔊 **3. Listen again .Decide if the statements are True (T)**

or False (F).

1. Career counselors can help graduates discover their strengths and weaknesses, evaluate their values and goals and sort through what type of career they want   **True/False**

2. Professionals will not help identify what factors may lead to successful and interesting career options.   **True/False**

3. Networking offers opportunities in choosing a career nowadays.

True/False

4. There are a few useful sites on job resources.   **True/False**

5. It is possible to use Internet resources for a particular position.

True/False

4. Useful tips for choosing a career!

Work in groups. Discuss and put these tips in the proper order.

_____ Determine the company's philosophy.

_____ Determine the general requirements of the job.

_____ Research the company and employer.

_____ Learn about the day-to-day tasks and responsibilities.

_____ Identify the skills and experience necessary to perform the job you want.

5. Look at "Holland's Hexagonal Model of Career Fields"and choose career options that match your values and share your choice with your partner. Give specific reasons.

6. <u>Underline</u> unknown words from the box below and guess their meaning. Consult the dictionary if necessary.

on-board computing, multitude, customer tracking, to entail, insurance, computer-aided, embedded, hi-fi, land-line, inventory management, payroll

Read the text "The world of information technologies" and complete the gaps (1-9) with the word combinations.

a. a simple tool to improve	**f.** customer tracking to employee payrolls
b. on-board computing	**g.** can be useful for understanding
c. a computing tool to manufacture	**h.** convergence of all these sectors via the Internet
d. has broadened into a multitude of specialized occupations	**i.** while the lack of a need for computer expertise
e. the use of mathematics	**j.** land-line telephony

Today, information technology is such an integral part of most businesses that the profession of being a computer expert **(1)**_____involving networking, software development, computer security, and designing graphics or interfaces. Some professions correspond to specific courses of study, **(2)**_____ makes certain technical occupations available to everyone. A good understanding of what each occupation basically entails **(3)**_____ their requirements, limits, and essential skills.

Professional IT may be viewed as **(4)**_____ a company's performance. For this reason, IT is found in nearly all sectors (including banking, insurance, industry, services, etc.), but it is generally divided into three distinct fields of application:

1. Industrial IT involves using **(5)**_____ industrial products, whether from a research department (computer-aided design) or in their production (computer-aided manufacturing, automation, robotics), while touching on logistics, inventory management, etc.

Technological IT, sometimes called **(6)**_____, involves applications embedded in electronic devices, such as mobile phones, hi-fi equipment, GPSs, etc.

Finally, scientific IT involves applying computing to basic research laboratories or to R&D (research & development) departments of business. Based essentially around **(7)**_____, it involves using computers to model, simulate, and analyze phenomena.

2. Management IT is the use of a computing tool to simplify the administrative management of a business, from **(8)**_____, and touching upon relationships with distributors. Management IT is directly linked to the business's information system and, for large companies, takes the form of enterprise resource planning software.

3. The field of telecommunications and networking refers to using computing to send information, and represents a vast sector which includes computer networks, mobile and **(9)**_____ , and digital television. The **(10)**_____has made it a rich and dynamic market.

8. Read it again and discuss the fields of IT application. Work in groups.

9. Find the words in the given text with the similar meaning.

   1. support_____

   2. significant_____

   3. physical equipment and components_____

   4. test_____

   5. awareness _____

10. Sort out the instructions from the box and write in the table what organizational stages you should do or not for choosing a carrier.

> **Factors to consider:** ~~get involved;~~ assume that you have it all figured out; follow your passion; ~~select a major just because it is "cool" or seems to promise prestige;~~ let someone else push you into a job; get advice from people in your target occupation; dare to try something new; explore a number of careers and majors; focus on a major just to get a career out of it.

DO	DON' T
e.g. get involved	*e.g. select a major just because it is "cool" or seems to promise prestige*

11. Assess your skills! Discuss with your partner what skills are more important for the professional career. Underline the most important ones for you.

Academic Strengths

☐ Reading, Writing, Speaking, and Listening

☐ Math and Creative Thinking

☐ Problem Solving and Decision Making

Personal Qualities

☐ Self-Esteem, Self-Management, Responsibility

People Skills

☐ Social, Negotiation, Leadership, Teamwork

12. **Write a letter of application for the job you want to realize ideal. The example is given for you.**

Paragraph1 "Dear Sir/Madam, "."I would like to apply for the position of software engineer advertised on the OLX of September 19th 2017."

Paragraph 2

"I am a Software Engineer with more than five years of experience in …"

"I graduated from Tashkent University of information technologies, 2012"

"At present I am employed as a … by company …"

"I am familiar with…"

"My skills include working with …, performing …"

"In course of my present job I have been responsible for …"

"I am used to working at a fast pace to meet deadlines".

 Paragraph 3

"I would like to apply my skills in your company."

"I believe the position you offer will give me opportunity to..."

"If you find my skills and experience suitable, please contact me to schedule an interview."

"I am looking forward to discussing my credentials with you personally."

Paragraph 4

"Thank you for your time and consideration."

"Yours sincerely, Mr. Ibragimov "

Paragraph1_____

Paragraph 2. (Write about your skills, diplomas and experience.) ____

_____

Paragraph 3 (Explain, why you are interested in this job, express your motivation to contribute. Ask to schedule an interview as soon as possible.)_____

Paragraph 4. (Thank the person.) _____

Lesson 7 INFORMATION SYSTEMS

In pairs, answer these questions.

1. What is an information system?

2. What are the related components of an information system? Describe the main components of an information system.
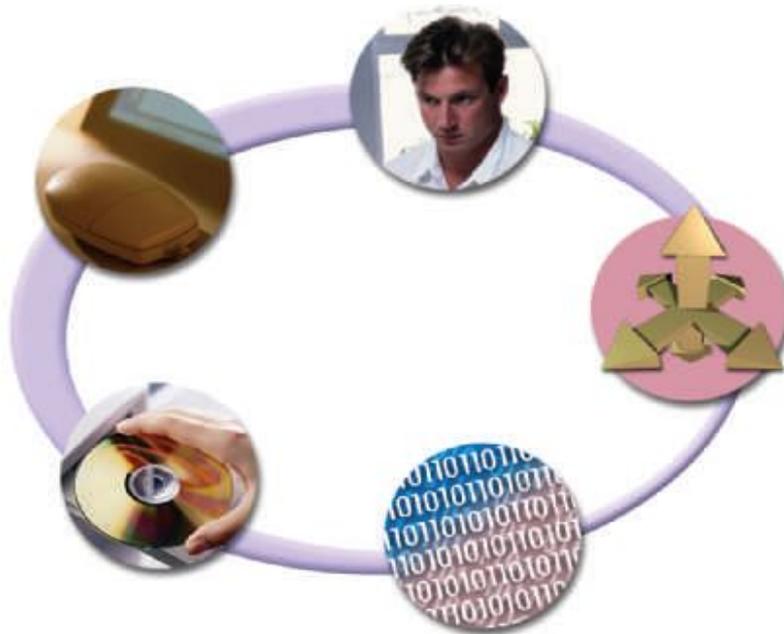
Work in pairs and discuss if launching a new information system involves risks as well as benefits. Give examples.

🔊 **1. (T7) Listen to the text and choose the best title.**

A. Many hardware and software companies offer attestation for IT professionals.

B.IT organization in a company that has networked PCs, enterprise-wide databases, centralized processing, and Web-based operations.

C. Information systems.

📢 **2. Listen again .Decide if the statements are True (T) or False (F).**

1. In a large corporation, a real person might handle all computer support activities and services, whereas a small firm might require a great number of people with specialized skills to provide information systems support.   **True /False**

2. Network administrators install, configure, manage, monitor, and maintain system software for controlling user access.   **True / False**

3. Web support specialists answer questions, troubleshoot problems, and serve as a clearinghouse for user problems and solutions. **True / False**

4. User support specialists design and construct Web pages, monitor traffic, manage hardware and software, and link Web-based applications to the company's information systems.   **True / False**

5. Big IT departments use a quality assurance team that reviews and tests all applications and systems changes to verify specifications and software quality standards.   **True / False**

3. Work in pairs. Choose one of the key components of Government to describe its relationship with information systems and technologies. See examples below.

E.g*. Public Reception offices and on-line services (portals) as a part of*
Citizen's involvement component.

1. Technology/ Infrastructure_____

2. Administration/Management _____

3. Strategies Legislation_____

4. Institutes-e.g. *Education management system–'e-decanat' at higher*
   educational establishments in Uzbekistan.

Example:_____

5. Application and join projects (partnership)_____

6. Capacity building _____

7. Citizen involvement _____

7. Financing of innovations _____

4. <u>Underline</u> unknown words from the box below and guess their meaning. Consult the dictionary if necessary.

> interchangeably, due to, existence, associated with, invention,
> undergone, shrinking, to proliferate, storage devices, tally, precision,
> exponential, sophisticated, to benefit, decision making,

5. Read the text "Information Systems vs. Information Technology" and discuss the differences between them.

It is often observed that terms information system and information technology are used interchangeably. In a literal sense, information technology is a subset of information systems. Information systems consist of people, processes, machines and information technology. The great advancement in information systems is due to development in information technology and introduction of computers.

Information system and information technology are similar in many ways but at the same time they are different. Following are some aspects about information system as well as information technology.

- **Origin:** Information systems have been in existence since pre-mechanical era in form of books, drawings, etc. However, the origin of information technology is mostly associated with invention of computers.

- **Development:** Information systems have undergone great deal of evolution, i.e. from manual record keeping to the current cloud storage system. Similarly, information technology is seeing constant changes with evermore faster processor and constantly shrinking size of storage devices.

- Businesses have been using information systems for example in form of manual books of accounts to modern TALLY. Information technology has helped drive efficiency across organization with improved productivity and precision manufacturing. IT has shown exponential growth in the last decade, leading to more sophisticated information systems. Modern medicine has benefited the most with better information system using the latest information technology.

Information systems have been known to mankind in one form or the other as a resource for decision making. However, with the advent of information technology information systems have become sophisticated, and their usage proliferated across all walks of life. Information technology has helped managed large amount of data into useful and valuable information.

6. Group discussion: Information system Vs Information technology.
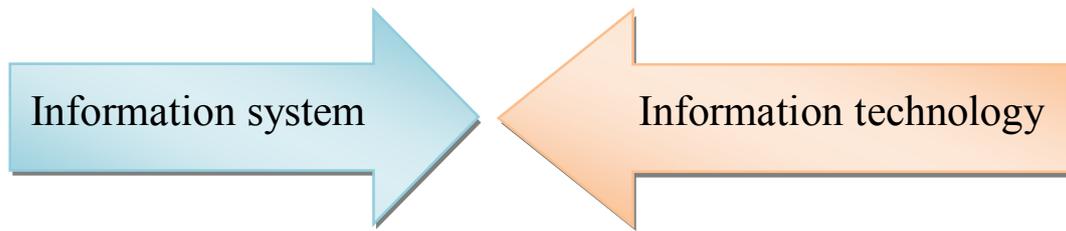
7. Decide if the statements are True (T) or False (F).

1. Information system and information technology terms are used mutually. **True/False**

2. The great progress in information systems is due to development in IT and introduction of computers. **True/False**

3. Information systems have undergone from manual record keeping to the current cloud storage system**.** **True/False**

4. There are some temporary changes in information technology with the evolution of computers. **True/False**

5. Information system is a resource for decision making. **True/False**

8. Discuss the questions with your partner:

1. Why is it frequently said that information system and information technology are interchangeable?

2. What does the development in information technology promote?

3. What are the similarities of Information system and information technology?

4. What are the differences between them?

5. How can you explain the achievements in modern medicine?

6. What is the future of Information technology?

7. What is the future of Information system?

9. Vocabulary extension. There are more than 40 words related to IT in this puzzle. Work with a partner and try to find/solve at least 20 words.

P	M	I	C	R	O	P	H	O	N	E	A	F	G	K	N	E	K	L	C	P	O
R	B	N	M	O	E	V	R	W	M	E	G	A	B	Y	T	E	S	L	A	D	O
O	P	O	R	F	T	U	N	I	K	G	S	F	D	U	A	L	C	O	R	E	M
C	Q	F	L	A	T	P	A	N	E	L	M	O	N	I	T	O	R	W	D	S	O
E	R	L	T	X	Y	G	U	P	Y	I	L	H	A	S	H	K	E	Y	O	K	P
S	H	O	C	K	A	R	M	O	B	I	L	E	P	H	O	N	E	T	Y	T	S
S	O	P	L	U	G	A	R	H	O	U	S	E	F	B	U	R	N	F	U	O	R
O	I	P	D	A	U	D	D	W	A	Z	U	X	C	O	G	Y	H	J	K	P	L
R	L	Y	K	J	H	E	A	U	R	O	P	R	I	N	T	E	R	O	L	V	E
Q	W	D	R	A	W	E	R	A	D	N	P	R	O	J	E	C	T	O	R	L	P
R	E	I	N	T	R	A	N	E	T	O	L	N	M	W	I	R	E	L	K	J	H
V	A	S	A	C	B	A	T	T	E	R	Y	A	E	R	S	T	A	N	D	T	U
S	N	K	E	Y	P	A	D	R	A	S	P	O	T	E	R	M	I	N	A	L	S
K	Y	D	I	G	I	T	A	L	C	A	M	E	R	A	G	O	H	O	L	A	C
R	P	R	I	N	T	E	R	O	T	L	F	A	R	A	M	N	M	L	K	P	A
S	P	I	C	E	S	O	P	T	O	W	E	R	P	O	L	I	T	A	N	T	N
U	O	V	S	A	L	O	M	R	C	H	I	P	S	U	H	T	T	Y	O	O	N
S	P	E	E	D	R	H	A	R	D	O	R	I	V	E	S	O	A	Y	O	P	E
E	N	U	S	E	O	F	B	R	I	T	S	E	R	V	E	R	H	A	L	A	R
P	O	W	E	R	B	U	T	T	O	N	M	C	A	B	L	E	A	D	R	I	D

1. **DESKTOP**	11. _____
2. _____	12. _____
3. _____	13. _____
4. _____	14. _____
5. _____	15. _____
6. _____	16. _____
7. _____	17. _____
8. _____	18. _____
9. _____	19. _____
10. _____	20. _____

✍ **10. Write an argumentative essay on the topic –related issue:**

"*Information system and information technology are similar in many ways but at the same time they are different.*"

Useful Tips:

1. **Argumentative Essay** is a type of essay that presents arguments about both sides of an issue. It could be that both sides are presented equally balanced, or it could be that one side is presented more forcefully than the other. It all depends on the writer, and what side he supports the most. The general structure of an argumentative essay follows this format:1.**Introduction**

2. **Body:** Three body paragraphs (three major arguments)

3. **Counterargument**: An **argument** to refute earlier arguments and give weight to the actual position.

4. **Conclusion**: Rephrasing the **thesis statement**, major points, call to attention, or **concluding remarks**.

5. **An argumentative essay** presents both sides of an issue. However, it presents one side more positively or meticulously than the other one, so that readers could be swayed to the one the author intends. The major function of this type of essays is to present a case before the readers in a convincing manner, showing them the complete picture.

Introduction: (Background information, thesis statement.) _____.

Body: Paragraph1_____.

Paragraph2_____.

Paragraph3_____.

Counterargument:_____.

Conclusion _____.

Discuss the questions in pairs.

1. How do you understand the term 'communication'?

2. How often do you communicate with your relatives, friends?

3. How do your parents inquire about you and your study?

4. Do you prefer online or face-to-face communication? Explain why.

5. Is communication important nowadays? Why / Why not?

6. What will the communication gap lead to?

1. Look at the pictures and discuss in groups the ways people communicate.

1	2	3	4	5	6	7	8	9

2. Discuss the following questions with your partner.

1. How do wireless communications make our life easier?

2. What kind of components can you identify in the picture below?

◄⁾3. (T8) Listen to the abstract from the article and discuss the questions below.

1. In a few years, people will be able to communicate more effectively face to face than online. **True/ False**

2. People are entering a new technological era in which they will be able to interact with the richness of living information as active participants in an ongoing process. **True/ False**

3. There is much direct interaction with the airline information service according to the article. **True/ False**

4. Interactive communication requires a creative medium that can be modeled. **True/ False**

5. The computer can change the nature and value of communication more profoundly. **True/ False**

6. Due to a well-programmed computer direct access can be provided both to informational resources and to the processes for making use of the resources. **True/ False**

4. Listen again and discuss in groups how computers are useful to communicate to the world.

5. <u>Underline</u> unknown words from the box below and guess their meaning. Consult the dictionary if necessary.

high-speed, technological convergence, binary, essence, digitize, sampling, merge, broadcast, to come together , tremendous , unified, pace of change, exposure, well-defined jobs.

6. Read the text about Computers & Communications and complete the sentences with the fragments (a–h) given in the list below.

a) the gradual fusion,	*e) can also be communicated*
b) a unified digital technology	*f) may be exchanged*
c) the start of a new story,	*g) high-speed communications links*
d) on computing and communications	*h) are accustomed*

The essence of all revolution is (1)_____in human experience. For us, the new story may be said to have begun in 1991. In that year, according to one report, "companies for the first time spent more (2)_____gear . . . than on industrial, mining, farm, and construction machines." It adds: "Info tech is now as vital ... as the air we breathe."

"Info tech" is technology that merges computing with (3)_____ carrying data, sound, and video. The arrival of information technology is having powerful consequences, the most

53

notable being (4) _____ of several important industries in a phenomenon that has been called technological convergence. Information can be communicated in all the ways we (5)_____ to receiving it. These include the familiar media of newspapers, photographs, films, recordings, radio, and television. However, it (6)_____ through newer technology- satellite, fiber-optic cable, cellular phone, fax machine. More important, as time goes on, the same information (7)_____among many kinds of equipment, using the language of computers. Understanding this shift from single, isolated technologies to (8)_____ means understanding the effects of this convergence on your life.

7. Mark the following statements T (True) or F (False).

1."Technological convergence"- the technological merger of several industries through various aids and appliances that exchange information in the electronic format used by computers.   **True/False**

2. Info tech is now as signify cant as the air people breathe." **True/False**

3. *Information technology* is technology that merges data processing with high-speed communications links carrying data, sound, and video.

True/False

4. The same information may be exchanged among many kinds of equipment, using a foreign language.   **True/False**

5. The great advance of a unified digital technology means understanding the effects of the convergence on people's life.   **True/False**

8. Work in pairs. Discuss the questions.

1. Is the consolidation of technologies an overnight phenomenon? Why? / Why not?

2. Do you think it has been developing over several years? Why? / Why not?

✍ **9. Write an opinion essay "*Does digital technology have positive or negative impact on our society?*"**

Write about your opinion and prove it with several examples. Use the following words

I think
In my opinion
To my mind
As far as I know

10. Find a student who has different opinion about digital technology and its impact on the society and debate it.
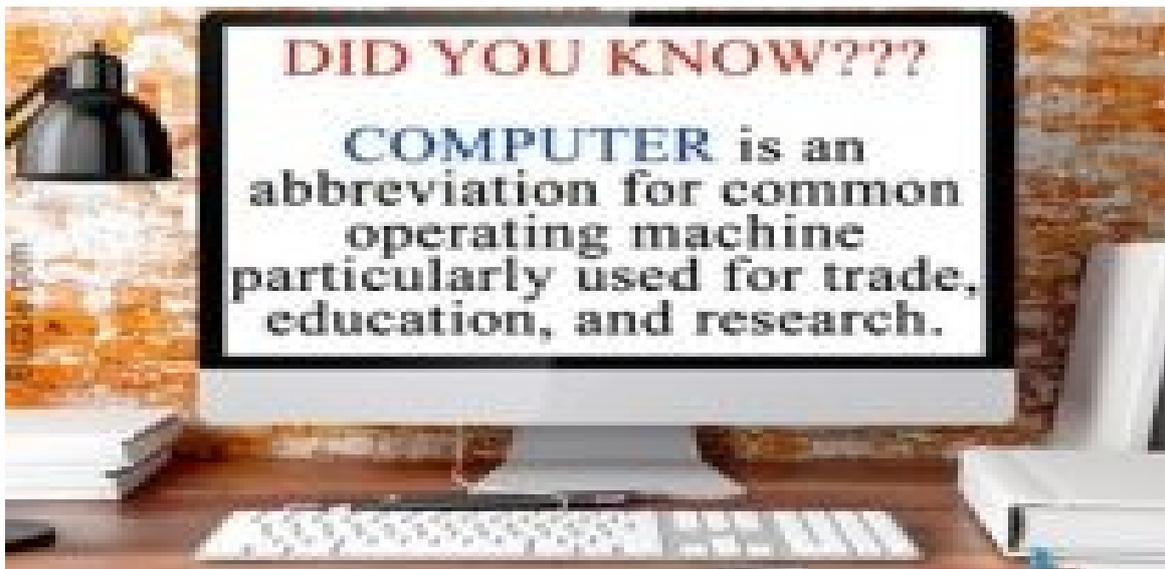
Compare and discuss in pairs. Do you think computers are very good at tasks that humans are bad at, and humans are exceptionally good at certain kinds of tasks that computers simply cannot perform yet? Why? / Why not?
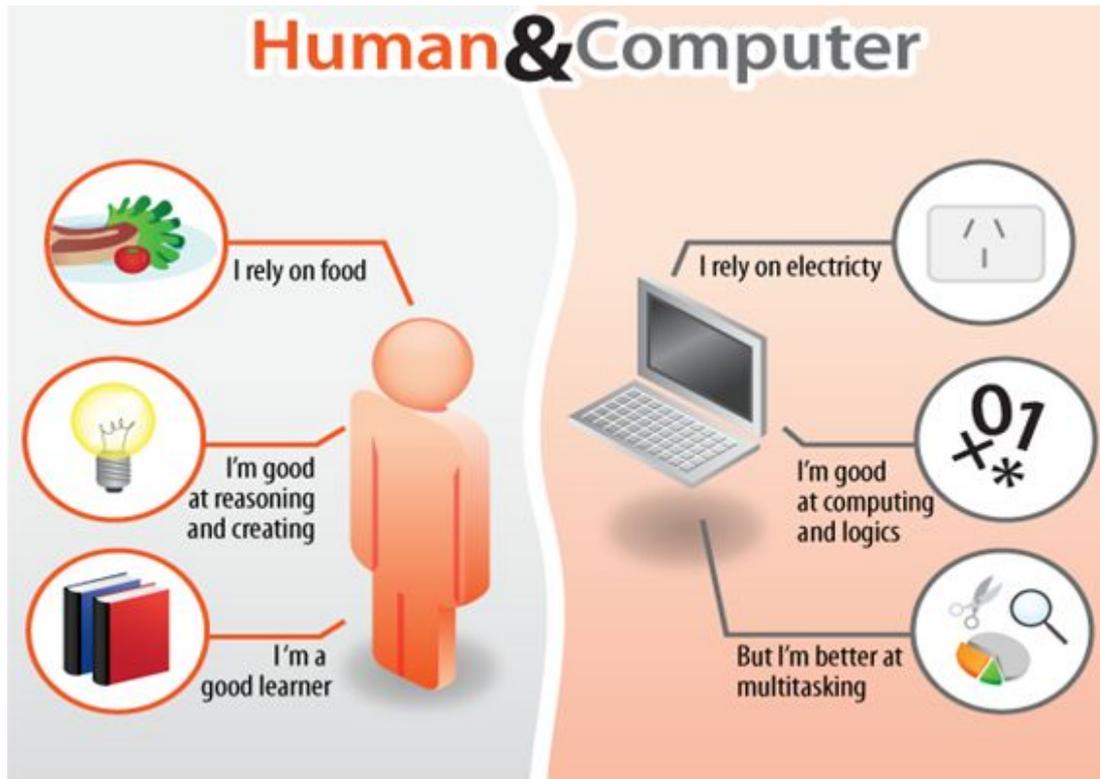
Language competition: Study the following quotes about man and technology and give your arguments what you can learn from them.

> The saddest aspect of life now is that science knowledge faster than society gathers wisdom

> Education makes machines which act like men and produces who act like machines

> The production of too many useful things results in too many useless people

🔊**1. (T9) Listen to the tape and discuss** in pairs which would have more computational power, a human brain or a fully functioning quantum computer.

🔊 **2. Listen again and decide if the statements are True (T) or False (F).**

1. Computer's processor has two alphabets (0 and 1), the combinations of two letters shapes the words of computer's languages.   **True/False**

2. The speed of computer processing is achieved by operating the machine in synchronization with extreme clock speed.   **True/False**

3. The extraordinary processing abilities of brain are just one of the peculiarities of computer power.   **True/False**

4. Such powers of human brain as the power of imagination and dreaming, wisdom and vision are considered by the scientists to bring under the preview of computers processing.   **True/False**

5. In future, people will invent new computing system based on a totally different architecture, which will directly understand instructions in English from any user.   **True/False**

3. Underline unknown words from the box below and guess their meaning. Consult the dictionary if necessary.

> artificial intelligence, sophisticated imitation, the first glimmers of intelligence, silicon receptacles, dexterity and wit, networked computer, humanlike, computerized future

4. **Read the text and discuss the differences between computers and humans.**

Computers and humans are two radically different types of' things." Despite the early hopes of artificial intelligence theorists, to date no computer has been able to demonstrate the sort of consciousness and understanding that is characteristic of people. Many researchers are genuinely cynical about the possibility of artificial intelligence ever existing. We frequently use the terms like "intelligence" when referring to computers. But this kind of language usage is metaphorical. If we mean something more than just a metaphorical parallel, then we must consider carefully what exactly we mean by "intelligent machines," and be prepared to answer the problems of artificial intelligence. Some people see computers becoming more like humans. It is because we impart a "shadow of our intelligence" to computers that they constitute a genuine threat. However, computers are more and more able to appear humanlike: through more sophisticated imitation, through the greater complexity of functions they can perform, even, partly, through their greater prevalence as cultural icons in society.

Consider, for a moment, the following quotes: "Unless we can recollect ourselves in the presence of our intelligent artifacts, we have no future". "Scholars and engineers hover like winged angels over a high-tech cradle, singing the algorithms and structures of their minds into silicon receptacles, and eagerly nurturing the first glimmers of intelligence in the machine-child." and even, "The technological genie, now loosed from all restraints, tempts us with visions of a surreal future. It is a future with robots who surpass their masters in dexterity and wit; intelligent agents who roam the

Net on our behalf, seeking the informational elixir that will make us whole. Not all of this is idle or fantastic speculation, even if it is the rather standard gush about our computerized future. Few observers can see any clear limits to what the networked computer might eventually accomplish. It is this stunning, wide-open potential that leads one to wonder what the genie will ask us in return for the gift." These quotes strongly imply that computers and humans share an equivalent sort of intelligence. It is a mistake to think that the computers have actually become more humanlike. But it is extremely plausible, indeed almost certain, that many people are experiencing computers as increasingly humanlike.

5. What is the difference?
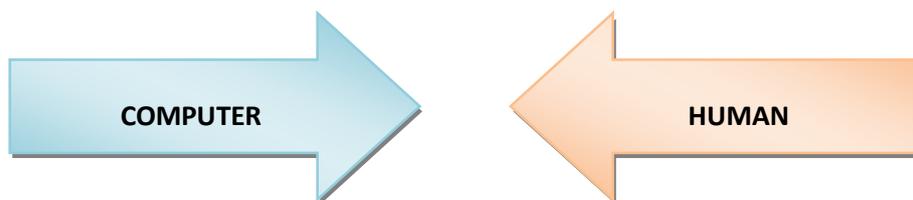
10. Match the words 1-9 from column A with the words a-g from column B.

A		B
1.roam	B	A. authentic
2. gift		B. move about or travel aimlessly
3. glimmer		C. a thing given willingly to someone without payment
4. artifact		D. a wavering light
5. consciousness		E. the state of being aware of and responsive to one's surroundings
6. genuine		F. an object made by a human being,
7. artificial		G. made by human beings rather than occurring naturally

7. Read again and discuss the questions with your partner.

1. Why are computers and humans different types of "things"?

2. How can the importance of the new computer-aided communication be appreciated?

3. What are the prospects of the development of the information society?

8. Choose the words from the box that can go in front of "ware" used in IT sphere.

Ex. software

~~soft~~ delft kitchen mal live china spy glass hard

9. Write an essay on the topic: *Computers can (can't) replace humans. See the example.*

(Paragraph 1) Introduction (Present the topic in one or two sentences):

_____

(Paragraph 2) The body (Give pros and cons with facts and examples:

_____

(Paragraph 3) Conclusion (Summarize the main ideas):_____

_____

Example#

Computers can take in and process certain kinds of information much faster than we can. They can swirl that data around in their "brains," made of processors, and perform calculations to conjure multiple scenarios at superhuman speeds. For example, the best chess-trained computers can at this point strategize many moves ahead, problem-solving far more deftly than can the best chess-playing humans. Computers learn much more quickly, too, narrowing complex choices to the most optimal ones.

Yes, humans also learn from mistakes, but when it comes to tackling the kinds of puzzles computers excel at, we're far more fallible.

Computers enjoy other advantages over people. They have better memories, so they can be fed a large amount of information, and can tap into all of it almost instantaneously. Computers don't require sleep the way humans do, so they can calculate, analyze and perform tasks tirelessly and round the clock. Notwithstanding bugs or susceptibility to power blackouts, computers are simply more accurate at pulling off a broadening range of high-value functions than we are. They're not affected or influenced by emotions, feelings, wants, needs and other factors that often cloud the judgment and intelligence of us mere mortals.

On the other hand, humans are still superior to computers in many ways. We perform tasks, make decisions, and solve problems based not just on our intelligence but on our massively parallel processing wetware — in abstract, what we like to call our instincts, our common sense, and perhaps most importantly, our life experiences.

Finally, computers can be programmed with vast libraries of information, but they can't experience life the way we do. Humans possess traits we sometimes refer to (again, in the abstract) as creativity, imagination and inspiration. A person can write a poem, compose and play music, sing a song, create a painting or dream up a new invention. Computers can be programmed to replicate some of those tasks, but they don't possess the innate ability to create the way humans do.I strongly believe that computers will become very powerful in the coming years but it doesn't stand a chance against the human brain.

10. Find a student who has different opinion and debate it.

Study the quote and give your arguments what you can learn from it

It is difficult to say what is impossible for the dreams of yesterday are the hopes of today ,and the realities of tomorrow

Look at the cluster and name possible fields of science and technology fusion.
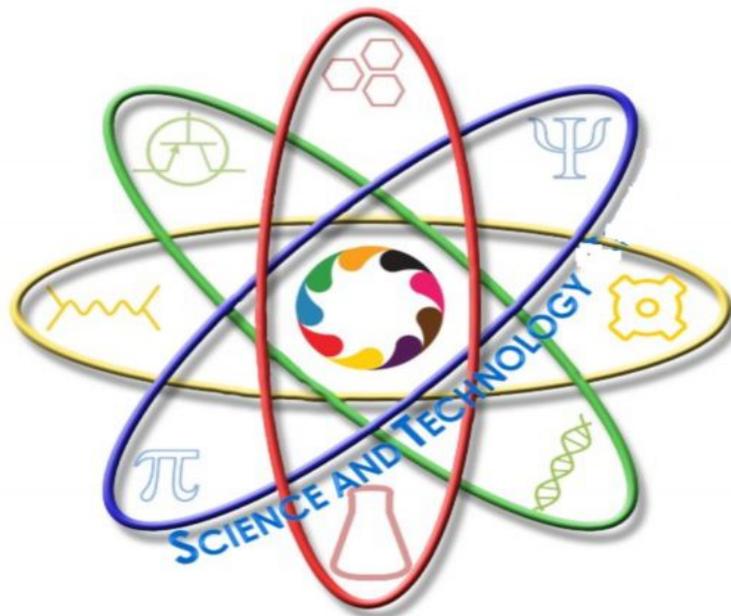
1. **Work in pairs. Describe the cluster and discuss what favor to the fusion of science and technology is. Add some options if necessary.**

2. **Answer the questions and share your versions with the whole group.**

- What do you think about the integration of science and technology?

- Where will it lead to?

3. Work in pairs. Describe the scheme and answer the questions.
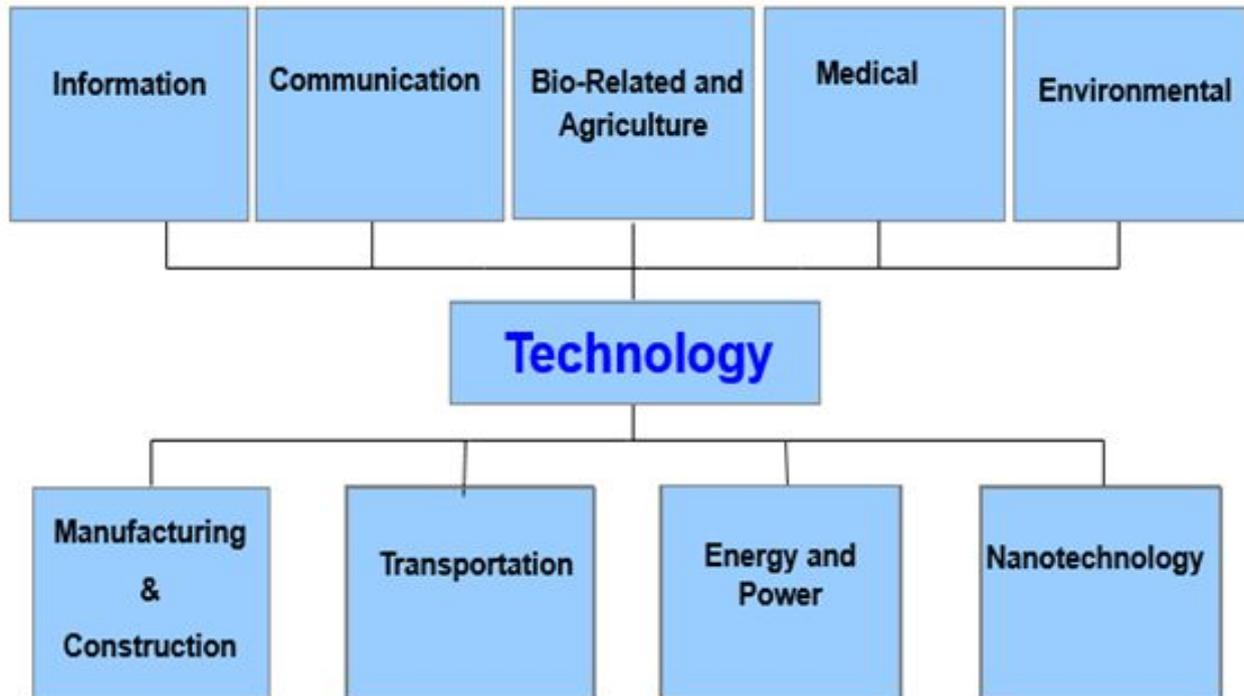
1. How does technology address human needs and wants?

2. What are impacts of information technology?

4. Work in pairs. Suggest your ideas about positive and negative impacts of technology .Share it with the whole group.

Sphere	Positive impacts	Negative impacts
Information	e.g. the internet- Information is stored for easy access	e.g. the internet- It is harder to distinguish between reliable and unreliable sources
Communication		
Bio-related agriculture		
Medical		
Environmental		

Manufacturing/ construction		
Transportation		
Energy /power		
Nanotechnology		

🔊 **5. (T10) Listen to the tape and discuss in groups how the progress in science and technology influences on people's lifestyle.**

🔊 **6. Listen again and answer the questions. Check the answers.**

1. What do up-to-date technologies depend on?

2. How does one invention lead to another?

3. What tools does technology supply science with?

4. What purposes are inventions used for?

5. When did industrial technology begin?

6. What motivates people to make new discoveries and inventions?

7. What was the significant discovery initiating science and technology work together?

8. Who encouraged inventing the first practical system of electrical lighting?

9. What was the starting point of the first modern technological research?

👤 **7. Read the text and fill in the blanks with the suitable words and phrases from the box.**

blessings, ubiquitous access, improved and advanced, social networking repurpose materials, improved technology, within hours, importan occasions, food requirements, getting addicted, natural fertility, alongside the robots

There are so many advantages with (1)_____ in our daily life. With the help of internet, we are able to learn new things and online courses etc. With the help of aviation technology we are able to reach distant places (2)_____which took years of time to reach in olden days. With the help of (3)_____ we are able to find our childhood friends, relatives etc. and important events in their life. With progressive technology in the agriculture field, we are able to meet (4)_____of people all over the world. On the other hand, there are instances which show the problems with (5)_____technology or the solution for one problem with the help of technology is giving rise to another problem. Instead of taking care personally we are sending SMS or giving a call on (6)_____which were attended personally in olden days. With the use of same internet children are (7)_____to online games and their physical activities and exercises are becoming considerably less. With the heavy usage of fertilizers soil is losing its h) _____and several varieties of plants became extinct. But, at the same time, democratized, (8)_____ to the digital network creates more education and employment opportunities for individuals and businesses. There is a strong place for human touch and experience j) _____and the algorithms. Technical advances improve our ability to recycles and (9) _____. We reduce waste. We should also welcome the (l0) _____of people living better as they age, so they can continue to create and serve others. The developing world is much younger, and the need for education and job creation will drive technology adoption.

8. Read the text again and discuss the following questions.

1. How does the advanced technology help people in education?

_____

2. How do you understand the term "networking" according to the text?

_____

3. What significant opportunities does ubiquitous access to the internet give?_____

4. How do people usually congratulate each other on the important occasions nowadays in comparison with in bygone days?

_____

5. What is the problem of being addicted to online games for children?

_____

6. What will make a great push in the field of education?

_____

9. Write a comparative essay "*Technology has both positive and negative impacts on the world.*" Use the steps and connectives shown below.

A **comparison** and **contrast essay** compares two similar objects, or contrasts dissimilar objects, in a way that readers become informed about the advantages and disadvantages of both the objects. Readers are then able to weigh pros and cons of the objects compared and contrasted to select a better product. It, however, does not mean that it is only a comparison or contrast of products; it could be a situation after which readers are to make a decision, weighing pros and cons. Although a comparison and contrast essay is set to demonstrate both similarities as

well as differences, sometimes it only shows similarities, and at other times, only differences.

> **Contrast**: but, yet, or, and yet, however, still, nevertheless, on the other hand, on the contrary, conversely, even so, notwithstanding, for all that, in contrast, at the same time, although this may be true, otherwise, nonetheless.

Introduction: _____

Present the topic in one or two sentences_____

The body (two and three): _____

Paragraph 1. Give pros(arguments in favour) with facts and examples_____

Paragraph 2. Give cons (arguments against) with facts and examples_____

Conclusion: Summarize your main ideas and opinions_____

_____

Look at the following photos and tell what connections they have with the theme of the lesson.
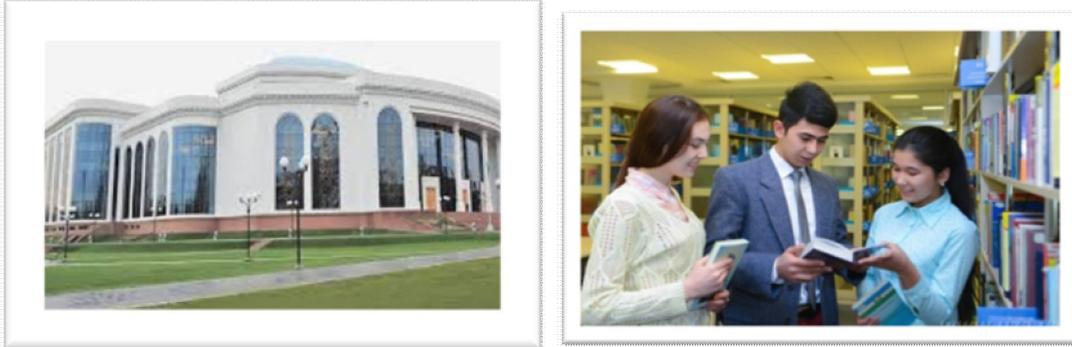
Work in pairs. Read and discuss the expression. Share your opinions with the whole group: "People like reading, but reading due to their specialty will increase their professional and social value in a global village."

Look at the pictures, discuss in groups if E-books – the books of the future.

1. Work in pairs and find the answers to the following questions and bring together all of your ideas and fill in the table below.

1. What role do books play in our life?

2. What kind of books, newspapers, magazines, journals are you interested in ?

3. How often do you need them for your work and study?

4. Do you think you are a bookworm? Why? / Why not?

5. How often do you use online English dictionaries?

6. If you surf the Internet are you sure the information is not fake?

7. What books of popular Uzbek, Russian and English writers do you prefer to read and in what format?

8. What are e- books?

9. What is the key difference between printed books and electronic books?

2. Think of advantageous and disadvantageous of printed books and electronic books. Work in pairs, complete the table and compare your ideas.

Advantages	Disadvantages
e.g. E-books are very handy	*e.g. They have small screen*

3. Listen to the FAQs given to the administration of the National Library of Uzbekistan named after Alisher Navoi and answer the questions.

1. What Identity documents are required for entry to the library?

2. What advices are given to users for the restoration of their ID-card in case of loss or damage?

3. What changes are done by the administration of the Library in case of state-level events?

4. What kind of literature is given home?

5. How often can the users access the Internet and in what price?

6. How can users acquire the information about legal regulations?

7. What are extremely important funds available in the library?

8. What is being done   for assisting intensive interchange of information in the library?

9. How can users search the books they need from the e- catalog?

4. Listen again, check the answers and discuss with your partner if the information mentioned is useful for enrolling in the library. Why/Why not?

5. Underline unknown words from the box below and guess their meaning. Consult the dictionary if necessary.

> e- government projects, medium-sized, to carry out, ICT based, library database, digital format,   to accelerate, superb information, data center, cyber security, approximately, digital library system

6. Read the article about the implementation of Uzbekistan Digital Library System and fill in the blanks with appropriate words and phrases given in the box above.

LGCNS(CEO: Kim Young-Seob), Korea's Representative IT service company in the field of electronic government, starts(1) _____the Uzbekistan e-Government business. LG CNS signed a contract with the Ministry of Development of Information Technologies   and   Communications   (MDITC),   an   Uzbekistan

government organization, on the establishment of Uzbekistan (2) _____(National Educational Electronic Library (NEEL) Project). This project aims to implement the (3)_____digital library system in the National Library in Navoiy, Uzbekistan. Overall size of the project is (4)_____ 13.5 billion KRW and the project is carried out with the support of Economic Development Cooperation Fund (EDCF) managed by the Export-Import Bank of Korea. LG CNS will build a multimedia center, digitalizing center, electronic library system, and an integrated (5)_____in the National Library in Navoiy, Uzbekistan. Once the project is completed, an integrated library system that connects 20 local libraries in Uzbekistan with the Uzbekistan national library will be established, making it possible to convert the important library data into (6) _____and providing convenience to the library users.

LG CNS will cooperate with small- and (7) _____ companies in Korea, including Future Nuri, inc., a provider of library solutions, to carry out the digital library project. LG CNS successfully carried out a digital library system project for the National Library of Korea in 2008, and has proven its superiority in the ICT field by building the e-Government systems of other countries, including (8)_____ center for Morocco, an emergency rescue system for Mongol, and an ICT-based education system for Columbia. Lee Chul, a public project manager of LG CNS, said, "This digital library system will be a good opportunity for LG CNS to show its (9) _____ and communications technologies to

Uzbekistan." He also said, "We will continue to expand the business of e-Government systems by receiving orders for an ICT-based education system, a national (10)_____, and a new airport, which the Uzbekistan government plans to build in near future, and use the opportunity as a foothold to make inroads into the overseas e-Government markets." Meanwhile, LG CNS received an order or was chosen as a preferred bidder for five (11) _____, including those of Uzbekistan, Laos, and Bahrain, contributing to the export of e-Government systems.

LG CNS has continuously expanded its e-Government business, targeting Asian and Middle East countries and plans (12) _____the business, exporting the e-Government systems to countries all around the world.

7. Decide if the following statements are True (T) or False (F).

1. The goal of NEEL Project is to   implement the ICT-based digital library system in Uzbekistan._____   **True / False**

2. After carrying out the project into practice, there will be an integrated library system   with great opportunities for library access. _____

    True / False

3. Data conversion of important literature will find favour with library readers. _____   **True / False**

4. LG CNS has proven its superiority in the ICT field by building the e-Government systems of other countries, including an ICT-based education system for Lao sand Bahrain._____ **True / False**

8. Write an essay "E-books vs. printed books".(You can use the transitions in the box used to signal conflict, contradiction).The example is given for you.

> **Conflict:** *but, however, in contrast, when in fact, by way of contrast, on the other hand, whereas, while, though, conversely, still, (and) yet.*

Example # Nowadays, one of the hottest topics under debate in publishing industry is the **E-books vs. printed books competition**. While millions of people prefer continuing reading on paper, e-books are becoming more and more popular. Some people say printed books are living on borrowed time; others assure that e-books cannot compete with the magic of reading on paper. And another opinion is that electronic books are going to replace paper books in the future. ...Who is right and who is wrong? **As for me………**

Introduction(paragraph one) : _____

The body: Give pros and cons with facts and examples_____

Conclusion: Summarize your main ideas and opinions _____

Identify as many programming languages as possible. List three of them you have already known in the space provided below; compare your list with your partner. Share your opinions about programming languages with the whole group.
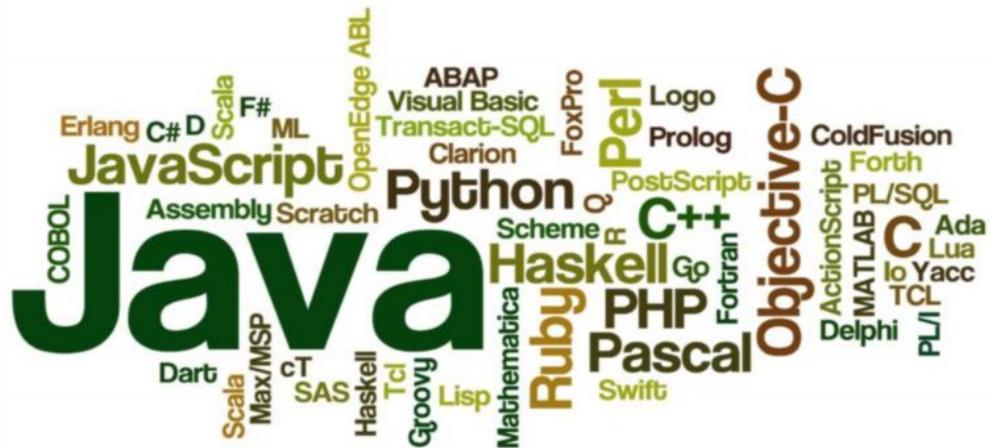
1. eg. COBOL - is mainly used for business applications

2._____

3._____

4._____

1. **Provide comments on the application of programming languages for creating,** *evaluating, analyzing, applying, understanding, remembering.* **See the example below.**

1. creating_____

2. evaluating_____

3. ~~analyzing~~#-*stock markets' data in marketing research*_____

4. applying _____

5. understanding_____

6. remembering _____

\

2. Discuss the questions in pairs:

1. What is a programming language?

2. What are the most popular programming languages?

3. What kind of a skill is learning programming language?

4. What are the best techniques for learning programming languages?

5. Whenever you're learning to use a new tool, why is it useful to identify its purpose, external model and internal model?

🔊 **3. Listen to the tape and summarize the information on different programming languages.**

🔊 **4. Listen again and complete the table below.**

Language	Purpose	Characteristic
Java	eg.- designed to work across multiple software platforms, meaning a program written on Mac OS X	eg.- a standard for enterprise software, web-based content, games and mobile apps, as well as the Android operating system
C language		
C++		

75

C#		
Objective-C		
PHP		
Python		
Ruby		
JavaScript		
SQL		

5. Underline unknown words from the box below and guess their meaning. Consult the dictionary if necessary.

high-level languages, machine language, set of keywords, assembly languages, to compile, source code, executable, interpreted, generated, available, numerical, to run on, built-in, to execute

6. Read the article about programming languages and discuss the questions below.

The term *programming language* usually refers to high-level languages, such as BASIC, C, C++, COBOL, FORTRAN, Ada, and Pascal. Each language has a unique set of keywords (words that it understands) and a special syntax for organizing program instructions. High-level programming languages, while simple compared to human languages, are more complex than the languages the computer actually understands, called *machine languages*. Each different type of CPU has its own unique machine language. Lying between machine languages and high-level languages are languages called assembly languages.

Assembly languages are similar to machine languages, but they are much easier to program in because they allow a programmer to substitute

names for numbers. Machine languages consist of numbers only. Lying above high-level languages are languages called *fourth-generation languages* (usually abbreviated *4GL*). 4GLs are far removed from machine languages and represent the class of computer languages closest to human languages. Regardless of what language you use, you eventually need to convert your program into machine language so that the computer can understand it. There are two ways to run programs written in a high-level language. The most common is to compile the program; the other method is to pass the program through an interpreter.

Programmers write programs in a form called source code. Source code must go through several steps before it becomes an executable program. The first step is to pass the source code through a *compiler*, which translates the high-level language instructions into object code. The final step in producing an executable program after the compiler has produced object code is to pass the object code through a *linker*. The linker combines modules and gives real values to all symbolic addresses, thereby producing machine code.

An interpreter translates high-level instructions into an intermediate form, which it then executes. In contrast, a compiler translates high-level instructions directly into machine language. Compiled programs generally run faster than interpreted programs. The advantage of an interpreter, however, is that it does not need to go through the compilation stage during which machine instructions are generated. This process can be time-consuming if the program is long. The interpreter, on the other hand, can immediately execute high-level programs. For this reason, interpreters are sometimes used during the development of a

program, when a programmer wants to add small sections at a time and test them quickly. In addition, interpreters are often used in education because they allow students to program interactively.

Both interpreters and compilers are available for most high-level languages. However, BASIC and LISP are especially designed to be executed by an interpreter. In addition, page description languages, such as PostScript, use an interpreter. Every PostScript printer, for example, has a built-in interpreter that executes PostScript instructions.

The question of which language is best is one that consumes a lot of time and energy among computer professionals. Every language has its strengths and weaknesses. For example, FORTRAN is a particularly good language for processing numerical data, but it does not lend itself very well to organizing large programs. Pascal is very good for writing well-structured and readable programs, but it is not as flexible as the C programming language. C++ embodies powerful object-oriented features, but it is complex and difficult to learn. The choice of which language to use depends on the type of computer the program is to run on, what sort of program it is, and the expertise of the programmer.

7. Read the text and answer the questions. Check your answers.

1. What is a high-level language?

2. What is an assembly language?

3. What is the difference between high-level languages and machine languages?

4. What is an assembly language primary used for?

5. What does it combine?

6. What is a statement/syntax?

7. What is the difference between two ways to run programs written in a high-level language?

8. What is FORTRAN created for?

9. What are the strengths and weaknesses of C++?

10. Which language is the best to use according to computer professionals?

8. Mark the following statements T (True) or F (False).

1. High-level languages have an inimitable set of keywords and a special syntax for organizing program instructions. **True/False**

2. Assembly languages are divergent in comparison of machine languages, but they are much easier to program in because they let a programmer to substitute names for numbers. **True/False**

3. FORTRAN is a particularly good language for processing digital data.

True/False

4. The C programming language is as flexible as Pascal. **True/ False**

5. C++ unites powerful object-oriented features, but it is complex and puzzling to learn. **True/False**

6. The initial step in producing an executable program after the compiler has produced object code is to pass the object code through a *linker*.

True/ False

9. **Look at the words in the boxes. Are they nouns, verbs or adjectives? Write *n v or adj* next to each word. Complete the sentences with the words from the boxes.**

bug_____	debug_____	debugger_____	debugging _____

1. A _____ is a program used to test and _____ other programs.

2. The process of going through the code to identify the cause of errors and fixing them is called_____.

3. Any error of a computer program is known as a_____.

compiler _____	compilation _____	compile_____

4. Programs written in a high-level language _____, that is translation into machine code, the language understood by the processor.

5. Programmers usually_____ their programs to generate an object program and diagnose possible errors.

6. A source program is converted into machine code by software called a _____.

10. Write an abstract describing the programming language you are learning at present time. Give a short explanation of how a program is written. The linking words in the box can be helpful in writing!

> ***Summary, repetition, exemplification, intensification***: to sum up, in brief, on the whole, in sum, in short, as I have said, in other words, that is, to be sure, as have been noted, for example, for instance, in fact, indeed, to tell the truth

You can start like this:

e.g.*C ++ is a high-level language developed....*

Lesson 13   **THE INTERNET**

Make a list of the things you can use the Internet for. Work in teams.

Talk in groups about Web sites you have visited and what you learned from your visits.

🔊 **1.(T13) Listen to the text and discuss how you would define the Internet.**

🔊 **2. Listen again and answer the questions:**

1. How did the Internet begin?
2. Why do you think the Internet represents one of the most successful examples of the benefits of sustained investment and commitment to research and development of information infrastructure?
3. In what direction did the Internet evolve?

3. Match the definitions (1-7) with the following words (a-g):

1. Messages sent from one person to another via computer. They can also be sent automatically to a large number of addresses, called mailing list.	a) E-mail

2. A software package, that provides a specific kind of service to software running on other computers. The term can refer to a particular piece of software, such as a WWW server. A single server machine could have several different server software packages running on it.	b) Browser
3. A network-oriented programming language specifically designed for writing programs that can be safely downloaded to a computer through the Internet. Using applets, web pages can include functions such as animations, calculators, and other fancy tricks.	c) Homepage
4. The account name used to gain access to a computer system. It is not secret unlike the password. And it is also the act of entering into a computer system.	d) Host
5. Any computer that is a repository for services available to other computers on the network. It is common to have one host machine provide several services, such as WWW.	e) Java
6. The web page that the browser is set to use when it starts up. The more common meaning refers to the main web page for a business, organization, person or simply the main page out of a collection of web pages.	f) Login

7. A software program that is used to look at various kinds of Internet resources. It is a specific kind of client program that enables to contact and obtain data from a server software program on another computer.	g) Server

4. <u>Underline</u> **unknown words from the box below and guess their meaning.   Consult the dictionary if necessary.**

immune to ,networked, file transfer, capability, development, a nuclear attack to create, nodes, main frame, eventually, server, software packages ,to capture

5. Read the abstract about the Internet and complete the missing part with the words given below.

a. file transfer	**e.** to create
b. developments	**f.** the number of nodes
c. capabilities	**g.** growth
d. a nuclear attack	h. networked

The Internet began as a Cold War project (**1)**_____a communications network .As it was said that was immune to **(2)**_____. In the 1969, the US government created ARPANET (Advanced Research Projects Agency Network), connecting four western universities and allowing researchers to use the main frames of any of the **(3)**_____institutions. New connections were soon added to the network, bringing **(4)**_____ up to 23 in

1971, 111 in 1977, and up to almost 4 million in 1994. As the size of the network grew so did its **(5)**_____.In its first 25 years, the Internet added features such as **(6)** _____, email, Usenet news, and eventually HTML. Now, new **(7)**_____ come to the Net one right after the other. It is this explosive **(8)**_____in recent years that has captured the imagination of computer users the world over.

6. Read again and discuss the questions.

1. What is the ARPANET?

2. How did it come into being?

7. Learn the topic -related abbreviations and put them next to their descriptions. What do the abbreviations stand for?

LAN; HTML; TCP/IP; FTP; URL; WWW; HTTP	
1. The coding language used to create Hypertext documents (documents that contain links to other documents -words or phrases that can be chosen by a reader and which cause another document to be retrieved and displayed) for use on WWW.	eg.HTML Hyper Text Markup Language)
2. HTML looks a lot like old-fashioned typesetting code, where a block of text is surrounded with codes that indicate how it should appear. Additionally, in HTML a block of text, or a word can be specified to link to another file on the Internet.	

3. A very common method of moving files between two Internet sites. It is a special way to login to another Internet site for the purposes of retrieving and / or sending files. There are many Internet sites that have established publicly accessible repositories of material that can be obtained using this protocol, by logging in using the account name anonymous.	
4. The protocol for moving hypertext files across the Internet. It requires a HTTP client program on one end, and an HTTP server program on the other end. It is the most important protocol used in WWW.	
5. A computer network limited to the immediate area, usually the same building or floor of a building, although sometimes the computer network can be as large as to cover a whole University campus.	
6. The suite of protocols that defines the Internet. TCP/IP software is available for every major kind of computer operating system. To be truly on the Internet, the computer must have TCP/IP software	
7. The universe of hypertext servers which allow text, graphics, sound files, etc. to be mixed together.	

8. Work in groups. Write other computer terms and abbreviations you know.

9. Vocabulary extension: Work with a partner. Complete the cluster. Write the words which can go with "hardware "and "software". Use dictionary or the internet to help you.

Example #: *computer software / computer hardware*

~~Computer,~~ bare, proprietary, application, basic, common, bundled, compatible, public-domain, support, cryptographic, system,   soft, interactive, user
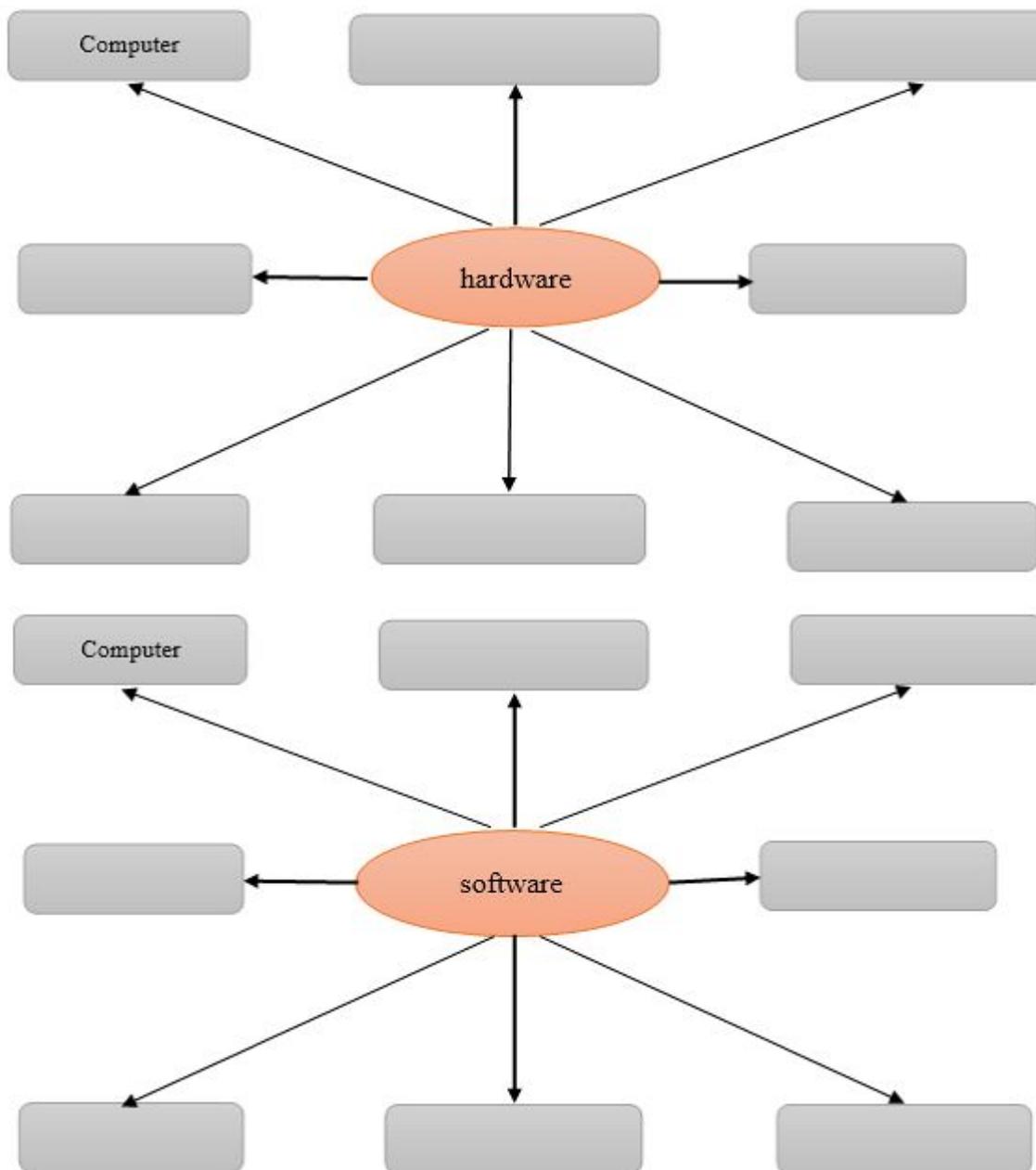
10. Write an essay (80-120 words) "Is the Internet bad for young people?" (A model essay is provided below)**.**Use these steps and useful expressions in the box to help you.

> ***Alternative and addition****: or, nor, and, and then, moreover, last, further, furthermore, besides, likewise, also, too, again, in addition, next, the first, the second, the third, in the first place, in the second place, finally.*
>
> ***Conclusion:*** *Personally, to sum up, to conclude.*

Introduction: Present the topic in one or two sentences_____

_____

_____.

The body (paragraphs two and three): Give facts and examples_____

_____

_____

_____

_____.

Conclusion: Summarize your main ideas and opinions

_____

_____

_____

Work in pairs and discuss if Cloud computing is a real buzzword.

Look at the picture. What major examples of cloud computing can you make?

1. Discuss the following questions with your partner.

- Have you ever heard   about cloud computing?

- What is really new for you?

2. Use the illustration below to help you answer these questions.

1. What is cloud computing?

2. How does cloud computing impact what you do?

3. What is the cloud?

4. Where is the cloud?

5. What does a private cloud mean?

🔊   **3. (T14) Listen to the text about the use of cloud computing and write what kind of things can be done with the cloud.**

1. e.g. New apps and services can be created

2._____

3_____

4_____

5._____

6._____

🔊 **4. Listen again , list top benefits of cloud computing ,describe them below taking into consideration 6 common reasons organizations are turning to cloud computing services:**

E.g.1.Cost - Cloud computing eliminates the capital expense of buying hardware and software and setting up and running on-site datacenters—the racks of servers, the round-the-clock electricity for power and cooling, the IT experts for managing the infrastructure. It adds up fast.

2. Speed -_____

_____

3. Global scale-_____

_____

4. Productivity- _____

_____

5. Performance -_____

_____

6. Reliability -_____

_____

5. <u>Underline</u> unknown words from the box below and guess their meaning. Consult the dictionary if necessary.

entire service, bug-free ,to be shipped on, inexpensive alternatives, to duplicate the storage, cloud-based backup, simplicity, subscription fee, up-front cost, browser, to purchase, ubiquitous availability, sustainability

6. Read the text about cloud computing and discuss its benefits and drawbacks.

Cloud computing is a method of delivering technology to the consumer by using Internet servers for processing and data storage, while the client system uses the data. While in the past, software had to be shipped on a CD-ROM, and updates had to be downloaded afterwards to keep the software secure and bug-free, cloud computing allows vendors to deliver software and services over the Internet without the need for traditional media or installation. A related idea is called **Software as a Service**, or SAAS. When the Internet became capable of transmitting large amounts of data in a short period of time, it became possible to offer not just simple web pages, but entire services online. The client system could be a desktop computer, a laptop computer, a phone, or a TV. Cloud computing allows the client to be a very **thin client**. Thin clients can be hardware based or software based .When designing computer networks, engineers often connect computers to each other with lines. Such lines represent cables and connections. Switches and servers are also often connected to each other in this way. When networks are connected to one another, engineers often use an abbreviation or representation of a network - a drawing of a cloud. A cloud represents a network we don't know much about, perhaps a network we don't own, or a network that provides connectivity in its own way. From here, the external network of the Internet has always been drawn as a cloud. Many services today are called cloud services. The Internet, as a network, provides private

parties and companies with many inexpensive alternatives to owning their own services. The advantages of cloud computing are:

1. **The simplicity.** In order to use a cloud-based backup, all you need to do is install a client program and start using it. In the past you would have to install software, connect to external hard drives, physically secure the drives, duplicate the storage of the backup in case it got damaged, etc. Today, all of these steps are performed by the backup company; you just need to be connected to the Internet. It's the same for saving your documents with dropbox.com or sharing your photos through iCloud.

2. **The up-front cost**. For a relatively small subscription fee, you get to enjoy an enterprise-level service. If you were to purchase the servers yourself, it would be a much, much higher up-front cost. If you no longer want the service, you aren't stuck with costly hardware or telecommunications investments; you simply stop using the service.

3. **The ubiquitous availability.** If you use Apple Music, you purchase a song once. Apple stores it for you and allows you to play it through the browser as many times as you wish. Later, in the car, you can play the same song on your phone. Finally, at your friend's house, you can use their computer to play the song under your Apple account. The service follows you wherever you are at an Internet connection.

The first disadvantage of cloud computing is sustainability. If you are using Google Docs as your main company document management system, you become dependent on Google. While Google is a strong company, some cloud companies do go out of business. Your business

may suffer when your provider is no longer there. You may even lose data or business.

7. **Answer the questions. Check your answers.**

   1. What is the origin of the cloud computing concept

   2. Where does the expression 'the cloud' come from?

   3. What are the functions of cloud computing?

   4. What are advantages of cloud computing?

   5. What are disadvantages of cloud computing?

8. **Decide if the following statements are True (T) or False (F).**

1. Cloud computing allows computer manufacturers to deliver programs and services over the Internet without the need for installation.

                                                          True/False

2. Thin clients can be neither hardware based nor software based.

                                                           True/False

3. Most often the browser program is considered a fat client.

                                                           True/False

4. The internal network of the Internet has always been drawn as a cloud.

                                                           True/False

5. It is impossible to play your favorite song in different places until you purchase the song.   **True/False**

6. One can store data without any problems when his provider is no longer in business.   **True/False**

9. **Quiz. What makes a computer service a cloud computing service?**

a. Being hosted on the internet

b. Being hosted through a hardwired network

c. Being available only on one computer

d. Having only meteorological content on it

2. What is one advantage of cloud computing?

a. Privacy

b. Security

c. Simplicity

d. Sustainability

3. Where does the cloud concept originate?

a. Network diagram

b. Weather

c. Cabling

d. Programming

10. Summarize the text in Task 5 in 70—75 words. You may like to follow these 6 steps:

1. Read through the whole text again and think of a suitable title for it.

2. Make sure you understand all the main points. Go through the text underline the relevant information in each paragraph.

3. **Make notes** about the main points. Omit repetitions and unnecessary phrases. Leave out details, such as examples.

4. **Make sentences** from the notes and connect the sentences by using linking words (and, but, because, that's why, in fact, therefore, etc.). Write your first draft.

5. Improve your first draft by reducing sentences.

6. Check grammar, spelling, and punctuation. Write the final version of your summary.

Look at the diagram and think what messages it carries.

Taxonomy of Malicious Programs
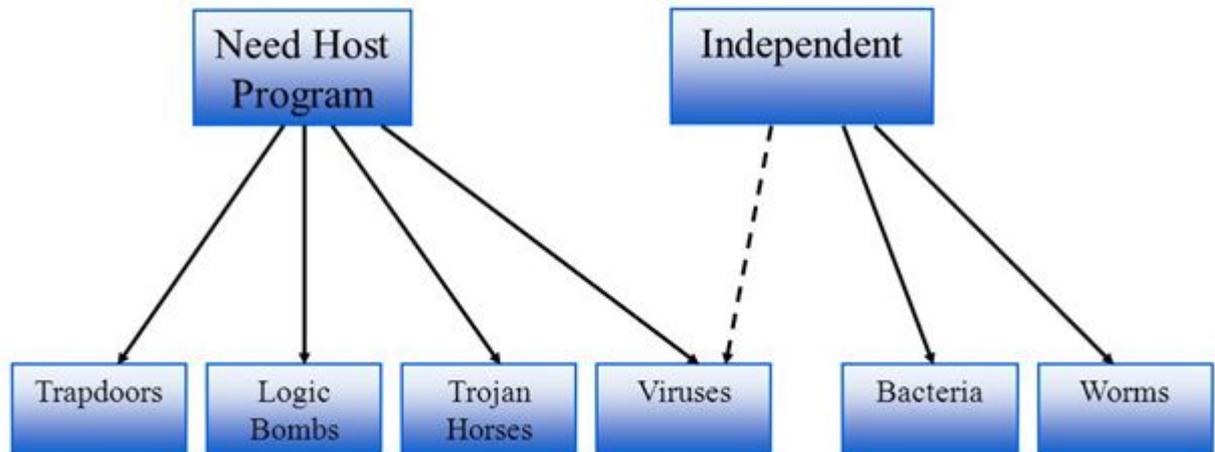
Discuss the questions with your partner.

1. What are the groups malicious programs can be divided into?

2. Are all of these designed to damage the infected machine or other networked machines? Give examples.

🔊   **1. (T15) Listen to the text and answer the questions.**

1. How does a computer virus attack?

2. How do computer viruses spread?

3. What is the purpose of computer virus creating?

4. What type of program is a computer virus?

5. How does a virus harm the system software?

6. How can a virus infect other computers on the same network?

7. How can your gadgets become infected with mobile viruses?

🔊 **2. Listen again and discuss in groups how safe your computer is taking into consideration:**

1. Protection

2. Knowledge

3. Proper configurations

4. Running only necessary programs

5. Anti-virus software

3. <u>Underline</u> unknown words from the box below and guess their meaning. Consult the dictionary if necessary.

penetrating, to propagate, blended threats, outsmart, malware, vulnerabilities, self-replication, spreading, keeps you protected, comprehensive, hacker utilities, networked machines, victim machines, harming, executable code.

4. Read the text about malicious programs and complete the gaps in the text using words /word combinations from the box above.

Malicious programs can be divided into the following groups: worms, viruses, trojans, (1)………………..and other malware. All of these are designed to damage the infected machine or other

(2)…………………..Network Worms -this category includes programs that propagate LANs or the Internet with the following objectives: (3)……………… remote machines, launching copies on victim machines and (4)…………… further to new machines. Worms use a variety of methods for penetrating (5)………………… and subsequently executing code, including: Social engineering; poorly configured networks; (6) …………… in operating systems and applications .Today's (7) ………………is often a composite creation: worms now often include Trojan functions or are able to infect exe files on the victim machine. They are no longer pure worms, but (8)………………..... Malware is malicious software. The purpose of malicious software is (9)……………..you or stealing the information from you. There are three characteristics of malwares:

1. Self-replicating malware actively attempts (10)………………… by creating new copies itself.

2. The population growth of malware describes the overall change in the number of malware instances due to(11) …………

3. Parasitic malware requires some other (12) ………………… in order to exist.

   As a result, traditional antivirus software alone will not fully protect you from all threats. Instead, look into (13) ……………….. security software like Norton Security with patented technologies that work together to (14) ………… online threats. Scanning your system for viruses, and running continuous automatic silent updates, Norton Security (15) ………………… from existing, new, and even yet-to-be-invented threats.

5. Read it again and discuss in groups the purpose of malicious software and how to keep users protected from existing threats according to the passage.

6. Review Questions

1. What is a malicious program?

2. What is Malware?

3. What are the objectives of Network Worms?

4. What is a computer virus?

5. What types of computer viruses do you know?

6. What does computer virus damage and destroy?

7. At what period of the development of PC computer viruses were seen?

7. Discuss the questions in pairs. Share your answers.

• What segment of program code can implant itself to one of your executable files?

• Why are computer viruses becoming more and more dangerous and 'cleverer'?

8. Work in groups. Read the signs that your system is infected by malware. Discuss if all these recommendations are important.

☐ Slow down malfunction, or display repeated error messages

☐ Won't shut down or restart

☐ Serve up a lot of pop-up ads, or display them when you're not surfing the web

☐ Display web pages or programs you didn't intend to use, or send emails you didn't write.

9. Work with your partner and give him advice how to protect the e-mail from being hacked. Exchange your opinions.

10. Compose cause and effect essay.

Choose one of the problems in your system and give main ideas what you'll write in your problem solving essay. Use linking words in the box below. The main supporting sentence is done for you.

> **Cause, result**: so, for, hence, therefore, accordingly, consequently, thus, thereupon, as a result, then, because.

*1. Topic sentence*_____

2. _____

3. Main supporting sentence: Today's malware is often a composite creation: worms now often include Trojan functions or are able to infect exe files on the victim machine. They are no longer pure worms, but blended threats.

4. Detailed supporting sentence.

*5.*_____

Did you Know?

There are estimated 30,000 computer viruses in existence Over 300 new ones are created each month First virus was created to show loopholes in software .

Lesson 16   ROBOTICS

Comment on the quote and discuss in groups.

Every advance in science leaves morality in its ancient balance; and it depends still on the inscrutable soul of man whether any discovery is mainly a benefit or mainly a calamity.(Gilbert Keith

Look at the pictures and think what messages they carry.
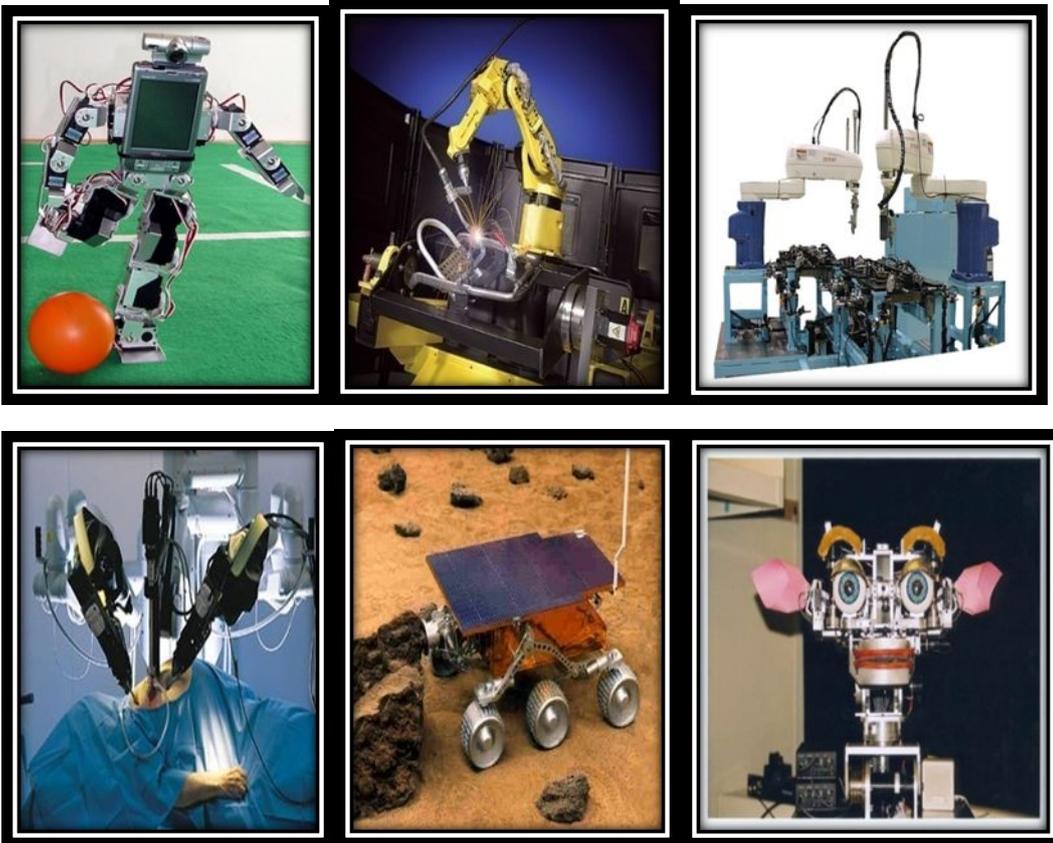
1. Discuss the following questions with your partner.

1. What are robots /androids?

2. What is robotics?

3. What types of robots do you know?

2. Match the words from A and those in B to make word pairs.

A	B
Artificial	labor
Functional	force
Mechanical	part
Speech	helpers
Integral	purpose
Intellectual	recognition

🔊**3. (T16) Listen to the tape about robots and decide if the statements True (T) or False (F).**

1. Robots are not capable to perform operations, according to the program installed in them. **True/ False**

2. The elaboration of robots can significantly change human's way of life.

True/ False

3. People can see production prototypes that demonstrate the achievements of scientists and engineers in this field. **True/ False**

4. Better and cheaper technologies will appear in 20 years that will lead to the creation of a market of robots of different functional purpose and difficulty level. **True/ False**

5. The level of development of robots depends on improvement in areas such as, human speech recognition or artificial intelligence.

True/ False

🔊 **4. (T16) Listen again and find the answer to the statement**

   "Programmers write a program to rule the robot or to get automatically working bot. **Discuss in groups.**

5. Automation vs. robots
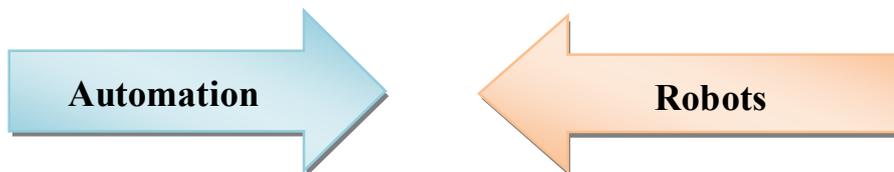
Useful tips!

Automation –machinery designed (*to carry out a specific task*).

Robots – machinery designed (*to carry out a variety of tasks*).

6. Fill in the table below. What type of device is better and can carry out the following tasks:

a) Bottling machine

b) Pick and place arms

c) Dishwasher

d) Computer Numerical Control   machines

e) Paint sprayer

f) Mobile robots

Automation	Robots

7. <u>Underline</u> **unknown words from the box below and guess their meaning.   Consult the dictionary if necessary.**

> rapidly growing, remote control, artificial intelligence, sensory feedback, to substitute, information processing, to resemble, preexisting, a set of commands, to determine reactions, dangerous environments, to date back

8. Read and complete the text with following sentences (1-6).

1. Robotics is also used in STEM (Science, Technology, Engineering, and Mathematics) as a teaching aid.

2. Today, robotics is a rapidly growing field, as technological advances continue; researching, designing, and building new robots serve various practical purposes, whether domestically, commercially, or militarily.

3. There are three different types of robotic programs: remote control, artificial intelligence and hybrid.

4. Robotics deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing.

5. It is perhaps more appropriate to view devices controlled primarily by human commands as falling in the discipline of automation rather than robotics.

6. Such robots attempt to replicate walking, lifting, speech, cognition, and basically anything a human can do.

Robotics is the interdisciplinary branch of engineering and science that includes mechanical engineering, electrical engineering, computer science, and others. a)_____These technologies are

used to develop machines that can substitute for humans. Robots can be used in any situation and for any purpose, but today many are used in dangerous environments (including bomb detection and de-activation), manufacturing processes, or where humans cannot survive. Robots can take on any form but some are made to resemble humans in appearance. This is said to help in the acceptance of a robot in certain replicative behaviors usually performed by people. b)_____Many of today's robots are inspired by nature, contributing to the field of bio-inspired robotics. The concept of creating machines that can operate autonomously dates back to classical times, but research into the functionality and potential uses of robots did not grow substantially until the 20th century. Throughout history, it has been frequently assumed that robots will one day be able to mimic human behavior and manage tasks in a human-like fashion. c)_____Many robots are built to do jobs that are hazardous to people such as defusing bombs, finding survivors in unstable ruins, and exploring mines and shipwrecks. d)_____.

All robots contain some level of computer programming code. Programs are the core essence of a robot, it could have excellent mechanical and electrical construction, but if its program is poorly constructed its performance will be very poor. e)_____A robot with remote control programming has a preexisting set of commands that it will only perform if and when it receives a signal from a control source, typically a human being with a remote control.

f)_____Robots that use artificial intelligence interact with their environment on their own without a control source, and can

determine reactions to objects and problems they encounter using their preexisting programming. Hybrid is a form of programming that incorporates both AI and RC functions.

9. Read the statements and decide if they are True (T) or False (F).

1. **Robotics** is the interdisciplinary branch of engineering and science that excludes mechanical engineering, electrical engineering, computer science, and others. **True/ False**

2. Robots can be used in any situation and for any purpose, but today many are used in perilous environments, and manufacturing processes.

True/ False

3. Robots attempt to duplicate walking, lifting, speech, cognition, and essentially anything a human being is able to do._____ **True/ False**

4. The concept of ingenious machines that can operate autonomously dates back to the 20th century._____ **True/ False**

5. Many robots are built to do jobs that are dangerous to people such as defusing bombs, finding survivors in unstable ruins, and exploring mines and shipwrecks._____ **True/ False**

6. Robots contain some level of software development reference designation._____ **True/ False**

7. A robot with artificial intelligence programming has a preexisting set of commands that it will only perform if and when it receives a signal from a control source._____ **True/ False**

10. Guess the gadget!

1. A gadget which is used to control something from a distance.

a. Bug

b. Remote control

c. Jet ski

d. GPS Tracking

2, ***A very small gadget which is used to listen secretly***

a) Listening gadget

b) Tiny listener

c) Bug

d) GPS

3. ***A water ski which is like a motorbike***

a) Water-ski

b) Ski-jet

c) Sea-ski

d) Jet-ski

4. ***A gadget which can find and track your position anywhere in the world using satellite.***

a) Satellite device

b) Navigator

c) GPS

d) GPS tracking device

5. ***Glasses which let you see through walls, etc.***

a) X-ray glasses

b) Sunglasses

c) Spy glasses

d) Through wall glasses

6. ***A camera which can be used in the sea or a lake.***

a) Water camera

b) Water resistant camera

c) Underwater camera

d) Liquid camera

7. ***A tiny gadget which copies papers***

a) Printer

b) Document scanner

c) Copy device

d) copywriter

11. Tell about your favorite gadget.

12. Vocabulary task .Use Google search engine or Wikipedia and give definitions to the following words:

a) chatbot _____

b) shopbot _____

c) knowbot_____

13. Write predictions about the usage of robots in different fields of science and technology in the future.

Example: In my opinion, by the end of the 21 century people will have created robots for transporting heavy things to other planets.

_____

_____

_____

_____

Look at the picture below and discuss with your partner what virtual reality is.

Discuss in groups if virtual reality closes to the truth. Share your opinions with the whole group.

1. Look at the pictures and answer the questions. Work in pairs.

- What can virtual reality let the mankind?

- Do you think people try to escape from reality? Give reasons.

- What spheres of science and technology is virtual reality applied?

- How can virtual reality help students become more deeply and personally engaged in topics?

🔊 **2. Listen to the tape and discuss what will have a huge impact on people's minds and attitudes according to the abstract.**

🔊 **3. Listen again and fill in the table "Pros / Cons of virtual reality."Check the answers.**

Pros	Cons
e.g.	e.g.

4. Imagine you are anticipating using virtual reality in the classroom. What are your questions if you are thinking about trying it? List no less than three questions.

1_____?

2_____?

3_____?

4_____?

5. Search for the most highly interesting questions and find answers to them. Compare your answers with group's students.

6. Choose the correct answer.

1. **What will the most rapid rate of the Internet in 40 years be?**

   a. It will be a billion times faster than today's.

   b. There will be   efficaciously theoretical limits of the Internet speed even in 40 years.

   c. The Internet speed will be a trillion (2^{40}) times faster in 4decades.

2. **What could one do with such fantastic speeds?**

   a. People on the planet could receive the media of the whole world.

   b. People could see different images in reality.

   c. People's dream will become a reality.

3. **The 3D life-size images transmitted would be so real….**

   a. That they would produce the same emotional influence on the viewer as a direct contact in the same room.

b. That they wouldn't produce the same emotional impact on the viewer as a normal face-to-face contact in the same room.

c. That they would generate the same emotional impact on the viewer as a normal face-to-face contact in the infinite.

7. Work in pairs. What is the difference between the real environment and virtual reality? Discuss with your partner pros and cons of virtual reality.

Real environment

Virtual reality
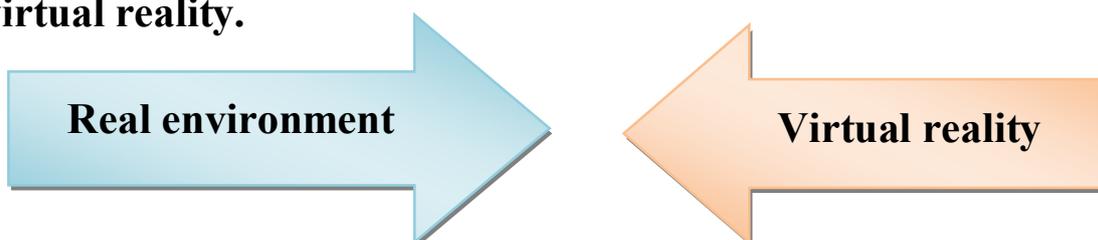
8. <u>Underline</u> unknown words from the box below and guess their meaning. Consult the dictionary if necessary.

chip-to-chip, encryption security, quantum properties, an eavesdropper, to hack, to explore, unfeasible, enhanced functionality, ultra-secure system.

9. Read the article from the Bristol Quantum Information Technology workshop, and match the answers and the questions. Compare your answers with your partner.

QUESTIONNAIRE

1. What are the perspectives of quantum technologies?.

2. What have been developed for providing chip-to-chip encryption security?

3. What will result in the cooperation with investigators of two countries?

4. What techniques have been employed by the team of researchers?

5. What purposes can the incredible applications be used for?

6. What did the chief researcher declare in case of hacker fraud?

a.Q _____A team of researchers has developed photon quantum chips to provide chip-to-chip encryption security for the first time.

b.Q _____The researchers at the University of Bristol's Quantum Engineering Technology Labs (QETLabs) have used standard semiconductor techniques to produce optical chips that distribute cryptographic keys using the quantum properties of entanglement, superposition and the absolute randomness provided by quantum behavior. This is the world's first chip-to-chip quantum secured communication system.

c.Q _____ "The system we have developed allows information to be exchanged using single photons of light in a quantum state," said Professor Mark Thompson, Principal investigator. "If an eavesdropper hacks your transmission, they will collapse the fragile quantum states and the system will immediately alert you to their presence and terminate the transmission."

d.Q _____The collaboration with researchers from Glasgow and NiCT in Japan will ultimately lead to integration in every day electrical devices, such as laptops and mobile phones, and the team at Bristol has spun off a company, KETS Quantum Security , to explore the commercial applications.

e.Q _____"Our research opens the way to many applications that have, until now, been unfeasible," said researcher Philip Sibson. "The technology is miniaturized for handheld devices, has enhanced functionality for telecommunications networks, and employs cost-

effective manufacturing to feasibly deploy quantum key distribution technology in the home."

f.Q _____The work has been supported by the UK Quantum Communication Hub, part of the National Network of Quantum Technology hubs, demonstrating the next generation of quantum technologies. "As part of the UK Quantum Communications Hub, we are in the process of deploying these devices throughout the heart of the Bristol City fibre-optic network, allowing us to test out these ultra-secure communications systems in real-world scenarios," said Dr Chris Erven at KETS.

10. Match the definitions (a-j) and their synonyms (1-10) .

1) collaboration	**D**	A) pocket(-sized)
2) employ		B) enlarge
3) an eavesdropper		C) haphazard
4) to alert		D) interaction
5) hub		C) use
6) terminate		E) finish
7) unfeasible		F) improbable
8) random		G) a peeper
9) enhance		H) toawaken
10) handheld		I) centre

✍ **11. Write the letter that corresponds to the correct answer in the quiz.**

1. What year did the concept of a head-mounted display develop?

a.1965   b.1989   c. 1968   d. 2000

2. Which was the first Hollywood film to depict VR?

a.Total Recall   b.Tron   c. Miss Congeniality   d. none of them

3. How many VivePre headsets did HTC sell in the first 10 minutes?

a..15,000   b. 22,000   c. 12,000   d. 12,300

4. Which VR company announced in a VR treadmill in 2014?

a.Vlife   b.Virtual Creations   c. Virtuix   d. None of them

✍ **12. Write an opinion essay about the future of virtual reality.**

(Write your opinion and prove it with several examples)

I think
In my opinion
To my mind
As far as I know

   Look at the picture below and discuss in groups the following statement *"Nanotechnology is the art and science of manipulating matter at the nanoscale".*

   In pairs discuss these questions.

1. What is nanotechnology?

2. What spheres of science is nanotechnology applied in?

1. Look at the picture and discuss in groups how small nanoscale is .
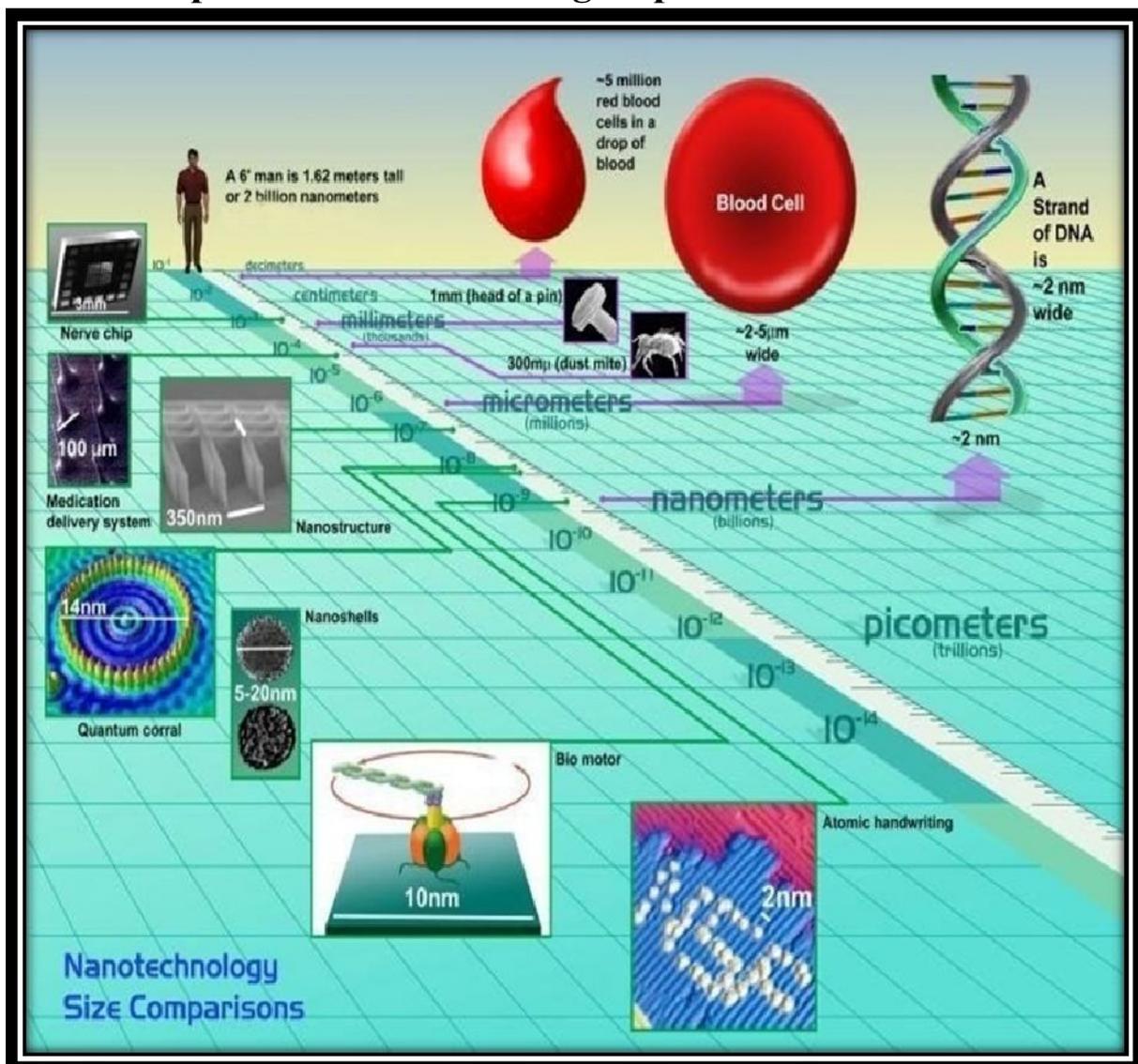
2. (T18) Listen to the abstract about nanomaterials applications and discuss what spheres nanoscale materials can be used in.

🔊 **3. Listen again and answer the following questions.**

1. What does nanomaterials field study?

2. What kind of materials may be useful in nanotechnology?

3. What kind of nanomaterials are also related to Nanoelectronics ?

4. What kind of development will give a powerful incentive to the display technology's next generation products?

4. <u>Underline</u> unknown words from the box below and guess their meaning.   Consult the dictionary if necessary.

> at the molecular scale, to deal with, quantum-realm scale, dimensions on the nanoscale, threshold, environ mental impact ,doomsday scenario

👤 **5. Read the text about the fundamental concepts of nanotechnology and complete the sentences with the fragments (a–i) from the list.**

a. sized from 1 to 100 nanometres
b. as diverse as surface science
c. refers to the projected ability to construct items
d. precisely manipulating atoms and molecules
e. new approaches based upon molecular self- assembly
f. with a vast range of applications
g. environ mental impact of nanomaterials
h. was subsequently established
i. deal with the special properties of matter

Nanotechnology is the engineering of functional systems at the molecular scale. This covers both current work and concepts that are more advanced. In its original sense, nanotechnology (1)_____from the bottom up, using techniques and tools being developed today to make complete, high performance products.

The earliest, widespread description of nanotechnology referred to the particular technological goal of (2)_____ for fabrication of macroscale products, also now referred to as molecular nanotechnology. A more generalized description of nanotechnology (3)_____ by the National Nanotechnology Initiative, which defines nanotechnology as the manipulation of matter with at least one dimension (4)_____. One nanometer (nm) is one billionth, or 10^{-9}, of a meter. This definition reflects the fact that quantum mechanical effects are important at this quantum-realm scale, and so the definition shifted from a particular technological goal to a research category inclusive of all types of research and technologies that (5)_____ which occur below the given size threshold.   Nanotechnology as defined by size is naturally very broad, including fields of science (6)_____, organic chemistry, molecular biology, semiconductor physics, microfabrication, molecular engineering, etc. The associated research and applications are equally diverse, ranging from extensions of conventional device physics to completely (7)_____, from developing new materials with dimensions on the nanoscale to direct control of matter on the atomic scale. Nanotechnology may be able to create many new materials and devices (8)_____, such as in nanomedicine, nanoelectronics, biomaterials energy production, and consumer products. On the other hand, nanotechnology raises many of

the same issues as any new technology, including concerns about the toxicity and (9)_____, and their potential effects on global economics, as well as speculation about various doomsday scenarios.

6. Mark the following statements T (True) F (False) .

1. Nanotechnology deals with only the particular technological goal of precisely manipulating atoms and molecules for fabrication of macro scale products. **True/False**

2. A nanometer is the smallest thing occurring in nature. **True/False**

3. The developments of nanotechnology are already used in different products. **True/ False**

4. Nanotechnology gives possibilities in creating a lot of new materials and devices in the future. **True/ False**

5. There are some concerns about the environmental impact of materials.

True/ False

6. Scientists and technologists are sure they know everything about nanotechnology. **True/ False**

7. Many theories about the development of nanotechnology are skeptical.

True/ False

8. Match the definitions (1-8) and their synonyms (a-h).

1. throughout	**c**	a) happen or exist	
2. extremely		b) improve	
3. occur		c) in every part of	
4. referto		d) not exactly	
5. roughly		e) size or level	
6. scale		f) speak about	

7. arbitrary	g) very
8. enhance	h) without any reason

9. Work in pairs. Think of pros and cons of NT and fill in the table.

Advantages of nanotechnology	Disadvantages of anotechnology
eg. With nanotechnology , we can create unique materials and products which are: – Stronger – Lighter – Cheaper – Durable – Precise	**e.g.** Atomic weapons could be more accessible and destructive

10. Write your predictions about the future of Nanotechnology.

Here are some examples of future use of NT in the picture below: electronic paper, Nokia Morph, Contact Lens. National Science and Technology Council (USA) claims that: *"Nanotechnology is an enabling technology that will change the nature of almost every human-made object in the next century." Do you agree with this statement? Why? /Why not?*

Nanotechnology in future everyday life

Nano-particle paint to prevent corrosion

Thermo-chromic glass to regulate the influx of light

Organic Light Emitting Diodes (OLEDs) for displays

Photovoltaic film that converts light into electricity

LEDs are now powerful enough to compete with light bulbs

Scratchproof, coated windowpanes using the lotus effect

Menu card made of electronic cardboard

Nanotubes for new notebook displays

Fabrics coated to resist stains

Piezomats prevent annoying vibrations

Hip joints made from biocompatible materials

The helmet maintains contact with the wearer

Intelligent clothing measures pulse and respiration

The Bucky-tube frame is as light as a feather, yet strong

Fuel cells provide power for mobile phones and vehicles

Magnetic layers for compact data memory

CHECK YOURSELF

TEST1.

PART A

1. Below are the elements of Graphical User Interface (GUI) in Windows. Explain the functions of each of these elements.

a. Window_____

_____

b. Icon_____

_____

c. Button_____

_____

d. Menu_____

_____

e. Dialogue Box_____

_____

2. Explain the difference between a word processing and a desktop publishing program.

_____

_____

_____

3. List and explain two security features are common in the computer system.

_____

_____

_____

PART B

1.   Discuss three different ways how computer-aided instruction can be used in the classroom.

2.   What is a spreadsheet? Choose two important features of a spreadsheet and show how they can be utilized in the classroom.

3.   How do you search for information on the Web? List two benefits of integrating an educational portal into teaching and learning.

TEST 2

Instructions: Write the letter that corresponds to the correct answer in the objective answer sheet.

1. Which component of the computer transfers instructions to the main memory for storage, and relays information back and forth between the main memory and the arithmetic unit?

a.   Logic unit.

b.   Control unit.

c.   Arithmetic unit.

d.   Central processing unit.

2. What program animates a picture sequence by gradually blending one image into another?

a.   Morphing.

b.   Virtual reality.

c.   Multimedia.

d.   Hypermedia.

3. Which one of the following statements **incorrect**?

a.   Viruses can be harmless to the computer.

b.   Viruses can infect computer files by duplicating itself.

c.   Viruses can be sent over the phone lines to a local network.

d.   Viruses can be detected due to its similar characteristics.

4. What are the five parts of an information system?

a.   Procedures, software, hardware, system and data.

b.   Product, procedures, software, hardware and data.

c.   People, procedures, software, hardware and data.

d.   Procedures, software, hardware, data and information.

5. _____ is the process of setting the margins, the number and width of the columns for regular text, and position of the graphics and text.

a.   Page view.

b.   Print layout.

c.   Page layout.

d.   Print preview.

6. Cursor control, scrolling and word-wrap are general features of a _____.

a.   A database.

b.   A spreadsheet.

c.   Word processing.

d.   Desktop publishing.

7. The following are the standard editing features of a word processing program

a.   Copy and paste.

b.   Find and replace.

c.   Insert and delete.

d.   Spacing and column.

8. Which of the following is a program that uses the personal computer to combine text and graphics to produce high-quality output on either a laser printer or a typesetting machine?

a.   Spreadsheet.

b.   Word processing.

c.   Desktop publishing.

d.   Presentation graphics.

9. Which of the following programs can help teachers to demonstrate numerical concepts such as percentages, multiplication or average to students?

a.   Spreadsheets.

b.   A word processor.

c.   Desktop publishing.

d.   Database management.

10. What enables two computers or more to communicate over a communication line, such as a telephone line?

a.   A server.

b.   A modem.

c.   A chat room.

d.   An internet service provider.

11._____ is an Internet service that links documents locally and remotely.

a.   E-mail.

b.   Listserv.

c.   Inter Relay Chat.

d.   World Wide Web.

12. Which network connects devices such as computers in a closed loop and does not rely on a file server or central computer?

a.   Bus.

b.   Star.

c.   Sun.

d.   Ring.

13. Which one of the following does not combine more than one search engine to locate things?

a.   Dog Pile.

b.   AltaVista.

c.   All The Web.

d.   WebCrawler.

14. A _____ is a personal online diary. It allows students to use their blog as a response journal to share comments and feedback with other students.

a.　Weblog.

b.　Web Quest.

c.　Web page.

d.　Web site.

15. _____is automatically installed when a user visits certain Websites that allow file-sharing services, downloading programs, pop-up advertisements or even through attachments via e-mail.

a.　Virus.

b.　Worm.

c.　Spy Ware.

d.　Freeware.

16. _____ is a range of computer applications that is designed to stimulate human intelligence and behavior.

a.　Virtual reality.

b.　Tutorial program.

c.　Stimulation program.

d.　Artificial intelligence.

17. Optical Mark Reader and digital cameras are

a.　Input devices.

b.　Output devices.

c. Storage devices.

d. Processing devices.

18. What are the four main operations performed by a computer?

a. Input, control, output and storage.

b. Input, control, output and memory.

c. Input, processing, output and memory.

d. Input, processing, output and storage.

19. The phenomena of more males using computer than females is known as

a. Digital divide.

b. Gender divide.

c. Network divide.

d. ICT divide.

20._____ is a system that performs physical and computational activities. It can be created in a human form and may respond effectively to unusual situations.

a. Robot.

b. Virtual reality.

c. Smart classroom.

d. Artificial intelligence.

WORDLIST

Unit I DEVELOPMENT IN COMPUTER TECHNOLOGY Lesson 1. INVALUABLE HERITAGE	
exact sciences to deal with a treatise root medieval quadratic equations	to rank the unknown quantity diamond truncated square pyramid
Lesson 2 THE OVERVIEW OF COMPUTERS HISTORY	
punched cards vacuum tubes assembly language bulky computing	integrated circuits to introduce to be capable of doing something voice recognition
Lesson 3 COMPUTER TECHNOLOGIES	
Relevant endless creativity to simplify to deny broadband	real-time boundary facilities enroll opportunity provide
UNIT IIINFORMATION TECHNOLOGY Lesson 4 IT in OUR LIFE	
exponential to store to conceive to process to secure to transmit to retrieve fore mentioned	Paramount authentic widespread to couple to covet apotheosis impairment flexibility

Lesson 5 JOBS in INFORMATION TECHNOLOGY	
computing environment	tools
Installing	modifying complex systems
configuring	framing
upgrading software	implementing
software coding standards	commissioning integration
	business-oriented

Lesson 6 CHOOSING A CAREER	
on-board computing	embedded
multitude	high-fidelity
customer tracking	land-line
to entail	inventory
insurance	management
computer-aided	payroll

UNIT III INFORMATION SYSTEMS AND TECHNOLOGY Lesson 7 INFORMATION SYSTEMS	
interchangeably	storage devices
due to existence associated	tally
with invention	precision
undergone	exponential
shrinking	sophisticated
to proliferate	to benefit
	decision making

Lesson 8 COMPUTERS & COMMUNICATION	
high-speed	broadcast
technological	to come together
convergence	tremendous
binary	unified
essence	pace of change
digitize	exposure
sampling	well-defined jobs
merge	

Lesson 9 COMPUTERS AND HUMAN BEINGS	
Artificial	dexterity and wit
Intelligence	networked
sophisticated	computer
imitation	computerized
the first glimmers	future

of intelligence silicon receptacles	humanlike

UNIT IV APPLICATION OF TECHNOLOGY
Lesson 10 SCIENCE AND TECHNOLOGY

Blessings	improved technology
ubiquitous access	within hours
improved and advanced	important occasions
social networking	food requirements
repurpose materials	natural fertility
getting addicted	alongside the robots

Lesson 11 BOOKS and TECHNOLOGY

e- government projects	to accelerate
medium-sized	superb information
to carry out	data center
ICT based	cyber security
library database	approximately
digital format	digital library system

Lesson 12 PROGRAMMING LANGUAGES

high-level languages	interpreted
machine language	generated
set of keywords	available
assembly languages	numerical
to compile	to run on
source code	built-in
executable	to execute

UNIT V WEB APPLICATION PROGRAMMS
Lesson 13 THE INTERNET

immune to	nodes
networked	main frame
file transfer	eventually
capability	server
development	software packages
a nuclear attack	to capture

Lesson 14 CLOUD COMPUTING

entire service	simplicity
bug-free	subscription fee
to be shipped on	up-front cost
inexpensive alternatives	browser

to duplicate the storage cloud-based backup	to purchase ubiquitous availability sustainability

Lesson 15 MALICIOUS PROGRAMS

penetrating to propagate blended threats outsmart malware vulnerabilities self-replication spreading	to keep you protected comprehensive hacker utilities networked machines victim machines harming executable code

UNIT VI FUTURE TRENDS
Lesson 16 ROBOTICS

rapidly growing remote control artificial intelligence sensory feedback to substitute information processing to resemble	Preexisting a set of commands to determine reactions dangerous environments to date back

Lesson 17 VIRTUAL REALITY

chip-to-chip encryption security quantum properties an eavesdropper	to explore unfeasible enhanced functionality ultra-secure system

Lesson 18 NANOTECHNOLOGY

at the molecular scale to deal with quantum-realm scale	threshold environ mental impact doomsday scenario dimensions

TAPESCRIPTS

(Tapescript 1)

Tashkent University of Information Technologies was named after the great scientist and thinker Muhammad Al-Khwarizmi in accordance with the Decree of the President of Uzbekistan dated March 15, 2017.

Uzbek leader determined concrete measures on further improving activities of the university and attracting youth to researches. It is planned to organize various events dedicated to the heritage of Muhammad Al-Khwarizmi starting from 2017-2018 academic year. The Decree focuses on organizing and holding traditional scientific and practical conferences at the national and international levels, establishing a scholarship named after Muhammad Al-Khwarizmi for talented students of the University, attracting leading scientists and academicians of the Republic as well as putting into practice competitions and Olympiads in ICT sphere among the university students.

Muhammad ibn Musa al-Khwarizmi occupies an important place among th e Central Asian scholars, whose names are entered into the history of the exact sciences. Proceedings of al Khwarizmi for several centuries had a strong impact on the scientists of East and West, and long served as a model when writing mathematics textbooks.

His great achievements in astronomy, though, as astronomers and his contemporaries came from the geocentric system of the world. He made a great contribution to mathematical geography. The

geographical treatise "The Book of pictures of the Earth" is the first known work on geography in Arabic. Al Khwarizmi for the first time described in detail the well-known at the time the inhabited part of the Earth and gave her a map showing the coordinates of the most important settlements, with the image of the sea, islands, mountains, rivers and so on. He had a strong influence on the further development of this science in the East. Al Khwarizmi belongs to the important achievements in the development of practical astronomy. He wrote a treatise on the astrolabe device and application - the main instrument, which served in the Middle Ages for the observation of the starry sky. "History Book" or "Book of chronology" is mentioned in several medieval writings. Therefore, Al Khwarizmi ranks as the earliest historians who wrote in Arabic.

(Tapescript 2)

Computer history comprises the evolutionary journey of computing systems, the timeline of operating systems as well as the history behind the development of computer software and hardware. The history of computing hardware covers the developments from early simple devices to aid calculation to modern day computers. Before the 20th century, most calculations were done by humans. Early mechanical tools to help humans with digital calculations, such as the abacus, were called "calculating machines", by proprietary names, or even as they are now, calculators.

The first aids to computation were purely mechanical devices which required the operator to set up the initial values of an elementary

arithmetic operation, and then manipulate the device to obtain the result. Early devices have been used to aid computation for thousands of years, mostly using one-to-one correspondence with fingers. Early mechanical tools to help humans with digital calculations, such as the abacus, were called "calculating machines", by proprietary names, or even as they are now, calculators. The abacus was early used for arithmetic tasks. Scottish mathematician and physicist John Napier discovered that the multiplication and division of numbers could be performed by the addition and subtraction, respectively, of the logarithms of those numbers (around 1680). While producing the first logarithmic tables, Napier needed to perform many tedious multiplications. It was at this point that he designed his 'Napier's bones', an abacus-like device that greatly simplified calculations that involved multiplication and division.

Henry Briggs used Napier's ideas to produce logarithm which all mathematicians used today. Calculus, another branch of mathematics, was independently invented by Sir Isaac Newton, an Englishman, and Leibnitz, a German mathematician. The first real calculating machine appeared in 1820 as the result of several people's experiments. This type of machine, which saves a great deal of time and reduces the possibility of making mistakes, depends on ten-toothed gear wheels.

In 1830 Charles Babbage, an Englishman, designed a machine that was called 'The Analytical Engine'. This machine, which Babbage showed at the Paris Exhibition in 1855, was an attempt to cut out the human being altogether, expert for providing the machine with the

necessary facts the problem to be solved. He never finished this work, but many of his ideas were the basis for building today's computers.

In 1930, the first analog computer was built by Vannevar Bush. The device was used in World War II to help aim guns. Mark I, the name given to the first digital computer, was completed in 1944. The men responsible for this invention were Professor Howard Aiken and some people from IBM. It was the first machine that could figure out long of mathematical problems all at a very fast speed.

In 1946 two engineers at the University of Pennsylvania, J.Eckert and J.Mayshly, built the first digital computer using parts called vacuum tubes.

(Tapescript 3)

Nowadays, we cannot imagine our life without computers and the fact is that they have become so important that nothing can replace them. They seem to be everywhere today. Since 1948 when the first real computer has been invented our life has changed so much that we can call it real digital revolution.

First computers differed from today's ones. They were so big that they occupied whole rooms or buildings being relatively slow. They were not faster than modern simple watches or calculators. Nowadays they are also used by scientist and they may also be as big as the old ones but they are millions times faster. They can perform many complex operations simultaneously and scientist practically can't do without them. Thanks to them people have an access to various information Gathering data has never been simpler than now. They are

not only used in laboratories but also in factories to control production. Sometimes it is computers that make other computers. But not only in science and industry computers are being used. Thanks to them modern medicine can diagnose diseases faster and more thoroughly. Also in banking system computers have become irreplaceable. Furthermore, architects, designers and engineers can't imagine their work without computers. This machines are really everywhere and we depend on them also in such fields as criminology.

Moreover, computers are wide-spread in education. Except their classic tasks such as administration and accountancy they are used in process of learning. Firstly, they store data which helps students to gain information. Secondly, thanks to special teaching techniques and programs they improve ours skills of gaining knowledge. They have become so popular that not knowing how to use them means to be illiterate.

Of course there is also dark side of computer technology because every invention brings us not only benefits but also threats.

Advantages:

1. Computers saves storage place. Imagine how much paper would have to be used, how many trees would have to be cut just to store information which is today on hard disks, CDs, and memory cards.

2. Computers can calculate and process information faster and more accurate than a human.

3. Computers improve our office work

4. We can communicate with whole world very fast and cheap using the Internet.

5. Computers are user-friendly. We can watch videos and listen to the music having only PC. We can also buy laptop which is smaller, and use it outside anywhere we want.

Disadvantages:

1. Computers are dangerous to our health. Very often parents want to have a rest and don't draw enough attention to how long their children use computer.

2. Computers sometimes break down and you can lose your data. If you have the Internet connection you have to be particularly careful and download anti-virus programs.

3. Violence and sex. The main threat to younger users of computers is internet pornography and bloody games.

4. The other threat is that you can be a computer addict.

Computers are practically irreplaceable and we can't make without them any more. They are everywhere.

(Tapescript 4)

The history of **Artel** brand began in 2011, when it was decided to put into operation industrial sectors producing a family of home appliances under own trademark. Establishment of a new business line is based on signing a strategic cooperation contract with recognized leaders in this field, namely: Samsung, South Korean brand, Midea, well-known Chinese company, Gloria, one of the best Italian manufacturers, and Odul, major Turkish producer. It is a known fact that if you want to be in demand and strive to retain first place in the market, you need to constantly give out something new, original,

attractive in form and outstanding with interesting content. Each employee of Artel possesses creative thinking, generates ideas, makes plans, and tries to turn them into reality. The basic principle of **Artel** is manufacturing of high-quality, modern high-tech products for consumers who value comfort, simple solutions and classics of the genre. Stylish ergonomic design, certified raw materials and the most automated filling prove the image of Artel as the manufacturer of home appliances for people with good taste and high consumer demands.

Today **Artel** offers you the following:
- Air conditioners;
- Vacuum cleaners;
- Microwave ovens;
- Gas, electric and combined stoves;
- Built-in kitchen appliances;
- Electric mini-ovens;
- TV sets;
- Washing machines;
- Refrigerators;
- Cellular phones;

Artel is a successful project; we managed to accumulate the positive experience of the partners and competitors, to introduce KAIZEN method (its basic principles: economical work ethic and effective use of resources), to standardize the quality of products, to introduce a warranty system, to establish operation of own branded

stores and showrooms throughout Uzbekistan. **Artel** is the home appliances which will quickly and easily manage with homework, will allow spending more time for yourself and your family.

(Tapescript 5)

An IT project manager is a professional charged with overseeing the process of planning, executing and delegating responsibilities around an organization's information technology (IT) pursuits and goals

A system administrator is a person who is responsible for managing a multi-user computing environment, such as a local area network (LAN). The responsibilities of the system administrator typically include installing and configuring system hardware and software, establishing and managing user accounts, upgrading software and backup and recovery tasks.

A team leader is someone who provides guidance, instruction, direction and leadership to a group of other individuals (the team) for the purpose of achieving a key result or group of aligned results. The team leader reports to a project manager (overseeing several teams). The team leader monitors the quantitative and qualitative result that is to be achieved.

A software architect is a software expert who makes high-1evel design choices and dictates technical standards, including software coding standards, tools, and platforms. The leading expert is referred to as the chief architect.

A programmer, computer programmer, developer, coder, or software engineer is a person who writes computer software. The term

computer programmer can refer to a specialist in one area of computer programming or to a generalist who writes code for many kinds of software.

QA includes activities that ensure the implementation of processes, procedures and standards in context to verification of developed software and intended requirements. It includes activities that ensure the identification of bugs/error/defects in software.

Software design is the process by which an agent creates a specification of a software artifact intended to accomplish goals, using a set of primitive components and subject to constraints. Software design may refer to either "all the activity involved in conceptualizing, framing, implementing, commissioning, and ultimately modifying complex systems" or "the activity following requirements specification and before programming.

A business analyst is someone who analyzes an organization or business domain (real or hypothetical) and documents its business or processes or systems, assessing the business model or its integration with technology .

(Tapescript 6)

Dear students! It's a good idea to have several careers in mind rather than just one in your first year of college. Approximately 60% of students change their major at some point during their college career. The average graduate changes their job seven times in their life. I'd rather advice you to see the career counselors at your college or educational establishment where trained professionals can help you

discover your strengths and weaknesses, evaluate your values and goals and sort through what type of career you want . They will not tell you what to do, they will simply help identify what factors may lead to successful and interesting career options. I'd like to add that networking opportunities are in common practice nowadays. Networking can lead to meeting someone who may be able to answer your questions about a specific career or company as many people love to talk about their jobs. It is an effective way to learn about the type of training necessary for a particular position, what it took to get into the field, and the positive and negative aspects of the work. There are many places where to go for help or refer to , such as career centers, , placement services and   student organizations .You'd better make an Internet Career Journey, where you can find a lot of useful sites on job resources. Scope out Internet resources .More and more professionals are active on online networks such as Facebook, LinkedIn.com and Doostang.com. Some professionals use OLX.uz to get in touch with others in their field, as well as research potential candidates.

(Tapescript 7)

The IT department develops and maintains information systems. The structure of the IT department varies among companies, as does its name and placement within the organization. In a small firm, one person might handle all computer support activities and services, whereas a large corporation might require many people with specialized skills to provide information systems support.

The IT **application development** group typically provides leadership and overall guidance, but the systems themselves are developed by teams consisting of users, managers, and IT staff members. A popular model for information systems development is a project-oriented team using RAD or JAD, with IT professionals providing overall coordination, guidance, and technical support.

Systems support and security provides vital protection and maintenance services for system hardware and software, including enterprise computing systems, networks, transaction processing systems, and corporate IT infrastructure. In addition, systems support and security technicians provide technical assistance to other groups in the IT department

User support provides users with technical information, training, and productivity support. The user support function usually is called a **help desk** or **information center (IC)**. User support specialists answer questions, troubleshoot problems, and serve as a clearinghouse for user problems and solutions.

Database administration involves data design, management, security, backup, and access. In small- and medium-sized companies, an IT support person performs those roles in addition to other duties.

Network administration includes hardware and software maintenance, support, and security. In addition to controlling user access, network administrators install, configure, manage, monitor, and maintain network applications.

Web support is a vital technical support function. Web support specialists design and construct Web pages, monitor traffic, manage

hardware and software, and link Web-based applications to the company's information systems.

Many large IT departments also use a **quality assurance (QA) team** that reviews and tests all applications and systems changes to verify specifications and software quality standards. The QA team usually is a separate unit that reports directly to IT management.

(Tapescript 8)

In a few years, men will be able to communicate more effectively through a machine than face to face. A communications engineer thinks of communicating as transferring information from one point to another in codes and signals. We believe that communicators have to do something nontrivial with the information they send and receive. And we believe that we are entering a technological age in which we will be able to interact with the richness of living information-not merely in the passive way that we have become accustomed to using books and libraries, but as active participants in an ongoing process. To the people who telephone an airline flight operations information service, the tape recorder that answers seems more than a passive depository. It is an often-updated model of a changing situation-a synthesis of information collected, analyzed, evaluated, and assembled to represent a situation or process in an organized way. Still there is not much direct interaction with the airline information service; the tape recording is not changed by the customer's call. Creative, interactive communication requires a plastic medium that can be modeled, a dynamic medium in which premises will flow into consequences, and

above all a common medium that can be contributed to and experimented with by all. Such a medium is at hand—the programmed digital computer. Its presence can change the nature and value of communication even more profoundly than did the printing press and the picture tube, for, as we shall show, a well-programmed computer can provide direct access both to informational resources and to the processes for making use of the resources.

(Tapescript 9)

When we compare computer with human brain it is like compression of a puddle with the ocean. I submit few important basic point of both the processing system:

Brief on Computer power: Computers are currently only as intelligent as the person using them. They can only do what you tell them to do. **Computers processor works only with pre-digested information.** It has two alphabets (0 and 1), the combinations of two letters shapes the words of computer's languages. The speed of computer processing is achieved by operating the machine in synchronization with extreme clock speed. It can purely handle logical and mathematical information. The list of unsolved problem in computer science is endless.

Brief on Human Brain power: The extraordinary processing abilities of brain are just one of the specialties of human brain. Retention and retrieval of any 'analogue' information, out of the box thinking, forecast of future, zoom in to unseen past , power of emotions ,the power of feelings, the power of imagination and dreaming, wisdom

and vision and many more such powers of human brain are not even considered by the scientist to bring under the preview of computers processing. Really, in the comparison of computer with the brain, I cannot even justify my first sentence of this comment. In future, in the first phase, mankind will certainly invent new computing system based on a totally different architecture, which will be smart and learn few things at own and will directly understand instructions in ' English' from any user. This will be a first enduring (immortal!!) machine .That new machine may have some potential to compete with the human mind. Next phase of this invention will be machines with feelings and emotions......

(Tapescript 10)

In recent years, scientific and technological developments have drastically changed life on our planet as well as our views both of ourselves as individuals in society and of entire Universe as a whole. Today, science and technology are closely related. Many modern technologies such as nuclear power and space flights depend on science and the application of scientific knowledge and principles. Each advance in pure science creates new opportunities for the development of new ways of making things to be used in daily life. In turn, technology provides science with new and more accurate instruments for its investigation and research. Technology refers to the ways in which people use discoveries to satisfy needs and desires, to alter the environment, to improve their lives. Throughout human history, men and women have invented tools, machines, materials and techniques, to

make their lives easier. Generally, we mean industrial technology, or the technology that began about 200 years ago with the development of power-driven machines, growth of the factory system, and mass production of goods that has created the basis for our modern society. Today we often say that we live in an age of science and technology. According to one estimate, 90 % of all the scientists who ever lived were alive and active in the 1970-s.This increased scientific activity has brought new ideas, processes, and inventions in ever-growing amount. The scientific revolution that began in the 16th century was the first time that science and technology began to work together. Thus, Galileo, who made revolutionary discoveries in astronomy and physics, also built an improved telescope and patented a system of lifting water. However, it was not until the 19th century that technology truly was based on science and inventors began to build on the work of scientists. For example, Thomas Edison built on the early experiments of Faraday and Henry in his invention of the first practical system of electrical lighting. Edison carried on his investigations until he found the carbon filament for the electric bulb in a research laboratory. This was the first true modern technological research.

(Tapescript 11)

1. What documents are required for entry to the library?

 -Identity documents: passport, military ID or residence permits in the Republic of Uzbekistan. It is also desirable to produce the recording:

Student ticket - students in higher education

2. How much is the ID card and what is the term of using ID cards?

-The cost of ID card - 5000 sum and the use of ID card period of validity is 3 years.

3. What to do in case of lost ID cards? I wonder if I can use a single ID card together.

-In case of loss of ID cards need to: immediately notify the person or call +99871 232 83 94 to register the service users and the issuing of literature. In case of loss or damage to the ID-card for the restoration of the ID-card user writes a statement. After consideration of the application the user pays the cost of lost ID-card in a single size.

]In accordance with the Terms of Use of the National Library of Uzbekistan named after Alisher Navoi "ID card may not be transferred to others and to use ID cards of other persons."

4. Which mode of operation of the library?

-The library is open on the following schedule: daily: Monday - Friday: from 9.00 to 20.00; Saturday and Sunday: from 9.00 to 17.00. On the eve of public holidays in accordance with the legislation of the Republic of Uzbekistan.

 * The library does not work on public holidays and sanitary days.

 * In exceptional cases, Library has the right to make changes to the operating mode. Informing users about changes made in advance through the information stands of the Library.

 * Virtual user services are provided through an Internet portal Library

5. **Can I learn about literature that is needed? Are the library books given home?**

-You can get this in: • Reference Service information service specialist consultant in person or by phone 232-83-94; in the hall of directories

and files personally, and using an electronic catalog. And as for literature, it is only for use in the reading rooms.

6. **Is there a library books in electronic form?**

-Currently, work is underway to digitize library collections. In the library the works of the President of the Republic of Uzbekistan, legal documents, works of classics of Uzbek literature, a collection of rare books and others are in electronic form.

7.**Can I order books via the website or by phone?**

- Yes, you can order books through the Internet Portal Library (http // www.natlib.uz) (electronic catalog). Literature Order is not carried out by phone.

8. **Can I print information from your electronic media?**

-You can print out the price list of paid services

9. **What are the conditions for the user experience on the Internet?**

- Internet using is available in the reading rooms (45 minutes a day free of charge), as well as in the media and internet center (see the price list).

10. **Does the library connect to the Internet via Wi-Fi?**

-Yes .It connects to the Internet via Wi-Fi .

11. **Can I make a black-and-white, color photocopy, scanning of documents?**

-Yes. According to the price list.

12.**Can I copy dissertations defended in Uzbekistan?**

-Copying of dissertations defended in the Republic of Uzbekistan is allowed in the amount of not more than 15% of the total volume of the

document. Copying electronic versions is carried out only by printing. Manuscripts theses be copied only by scanning in advance customized.

13. How do I know when and where was published a law, decree or other legal act?

-When you visit to the library, the reading room "Adolat" as well as on the website Lex.uz

14. What lists have for additional services to the user?

-Photocopying, scanning, printing files, compiling the bibliography on the subject, etc.

15. How many books can I order at one time?

-Every user can order up to 10 titles at a time. More can be ordered immediately after the return of the first order. Books can be no more than 10 books.

16. What literature is available to users?

-The library fund is universal. There are books on all branches of science and technology. The advantage is given to humanitarian, social and political and social sciences, scientific and educational literature.

17. What a rare and highly valuable funds available in the library?

-The National Library keeps rare and highly valuable editions of XVI-XX centuries: manuscripts, oriental lithography, the first Turkestan newspapers and magazines, monographs and scientific works of the orientalists. (Total in the service of manuscripts, unique and especially valuable publications collected more than 16 thousand books, fund of old and rare books have more than 200 thousand units. Storage XIX-early XX centuries.).

18. **Does the library have relationship with foreign countries, with their information and library resources?**

-National Library cooperates with many foreign countries national libraries - Poland, the USA, Egypt, Iran, Latvia, Lithuania, CIS countries and others that promote the active exchange of information.

19. How to find the right books to the electronic catalog?

-The user can search the literature by author, name, keywords, etc..

20. What are the works of Uzbek poets and classic-writers are available in the library in electronic format?

-You can currently get the full texts of works by the great Uzbek classics such as Navoi, and others.

(Tapescript 12)

The tech sector is booming. With some help from Lynda.com, a list of 10 of the most sought-after programming languages has been compiled to get you up to speed: Java, C Language, C++, and C #, Objective-C, PHP, Python, Ruby, JavaScript and SQL.

1.<u>Java</u> is a class-based, object-oriented programming language developed by Sun Microsystems in the 1990s. It's one of the most in-demand programming languages, a standard for enterprise software, web-based content, games and mobile apps, as well as the <u>Android</u> operating system. Java is designed to work across multiple software platforms, meaning a program written on Mac OS X, for example, could also run on Windows.

2. C language - A general-purpose, imperative programming language developed in the early '70s, C is the oldest and most widely used language, providing the building blocks for other popular

languages, such as C#, Java, JavaScript and Python. C is mostly used for implementing operating systems and embedded applications. Because it provides the foundation for many other languages, it is advisable to learn C (and C++) before moving on to others.

3. C++ is an intermediate-level language with object-oriented programming features, originally designed to enhance the C language. C++ powers major software like Firefox, Winamp and Adobe programs. It's used to develop systems software, application software, high-performance server and client applications and video games.

4. C# Pronounced "C-sharp," C# is a multi-paradigm language developed by Microsoft as part of its .NET initiative. Combining principles from C and C++, C# is a general-purpose language used to develop software for Microsoft and Windows platforms.

5. Objective-C is a general-purpose, object-oriented programming language used by the Apple operating system. It powers Apple's OS X and iOS, as well as its APIs, and can be used to create iPhone apps, which has generated a huge demand for this once-outmoded programming language.

6. PHP (Hypertext Processor) is a free, server-side scripting language designed for dynamic websites and app development. It can be directly embedded into an HTML source document rather than an external file, which has made it a popular programming language for web developers. PHP powers more than 200 million websites, includingWordpress, Digg and Facebook.

7. Python is a high-level, server-side scripting language for websites and mobile apps. It's considered a fairly easy language for

beginners due to its readability and compact syntax, meaning developers can use fewer lines of code to express a concept than they would in other languages. It powers the web apps for <u>Instagram</u>, <u>Pinterest</u> and <u>Rdio</u> through its associated web framework, Django, and is used by <u>Google</u>, <u>Yahoo!</u> and <u>NASA</u>.

8. Ruby is a dynamic, object-oriented scripting language for developing websites and mobile apps,<u>Ruby</u> was designed to be simple and easy to write. It powers the <u>Ruby on Rails</u> (or Rails) framework, which is used on <u>Scribd</u>, <u>GitHub</u>, <u>Groupon</u> and <u>Shopify</u>. Like Python, Ruby is considered a fairly user-friendly language for beginners.

9. JavaScript is a client and server-side scripting language developed by <u>Netscape</u> that derives much of its syntax from C. It can be used across multiple web browsers and is considered essential for developing interactive or animated web functions. It is also used in game development and writing desktop applications. JavaScript interpreters are embedded in Google's <u>Chrome</u> extensions, Apple's <u>Safari</u>extensions, Adobe Acrobat and Reader, and Adobe's Creative Suite.

10. Structured Query Language (SQL) is a special-purpose language for managing data in relational database management systems. It is most commonly used for its "Query" function, which searches informational databases. SQL was standardized by the American National Standards Institute (ANSI) and the International Organization for Standardization (ISO) in the 1980s.

(Tapescript 13)

The Internet has revolutionized the computer and communications world like nothing before. The invention of the telegraph, telephone, radio, and computer set the stage for this unprecedented integration of capabilities. The Internet is at once a world-wide broadcasting capability, a mechanism for information dissemination, and a medium for collaboration and interaction between individuals and their computers without regard for geographic location. The Internet represents one of the most successful examples of the benefits of sustained investment and commitment to research and development of information infrastructure. Beginning with the early research in packet switching, the government, industry and academia have been partners in evolving and deploying this exciting new technology. The Internet today is a widespread information infrastructure, the initial prototype of what is often called the Global Information Infrastructure. Its history is complex and involves many aspects - technological, organizational, and community. And its influence reaches not only to the technical fields of computer communications but throughout society as we move toward increasing use of online tools to accomplish electronic commerce, information acquisition, and community operations.

(Tapescript 14)

You are probably using cloud computing right now, even if you don't realize it. If you use an online service to send email, edit documents, watch movies or TV, listen to music, play games or store pictures and other files, it is likely that cloud computing is making it all possible

behind the scenes. The first cloud computing services are barely a decade old, but already a variety of organizations—from tiny startups to global corporations, government agencies to non-profits—are embracing the technology for all sorts of reasons. Here are a few of the things you can do with the cloud:

- Create new apps and services
- Store, back up and recover data
- Host websites and blogs
- Stream audio and video
- Deliver software on demand
- Analyse data for patterns and make predictions

Top benefits of cloud computing

Cloud computing is a big shift from the traditional way businesses think about IT resources. What is it about cloud computing? Why is cloud computing so popular? Here are 6 common reasons organizations are turning to cloud computing services:

1. Cost

Cloud computing eliminates the capital expense of buying hardware and software and setting up and running on-site datacenters—the racks of servers, the round-the-clock electricity for power and cooling, the IT experts for managing the infrastructure. It adds up fast.

2. Speed

Most cloud computing services are provided self service and on demand, so even vast amounts of computing resources can be provisioned in minutes, typically with just a few mouse clicks, giving businesses a lot of flexibility and taking the pressure off capacity planning.

3. Global scale

The benefits of cloud computing services include the ability to scale elastically. In cloud speak, that means delivering the right amount of IT resources—for example, more or less computing power, storage, bandwidth—right when its needed and from the right geographic location.

4. Productivity

On-site datacenters typically require a lot of "racking and stacking"—hardware set up, software patching and other time-consuming IT management chores. Cloud computing removes the need for many of these tasks, so IT teams can spend time on achieving more important business goals.

5. Performance

The biggest cloud computing services run on a worldwide network of secure datacenters, which are regularly upgraded to the latest generation of fast and efficient computing hardware. This offers several benefits over a single corporate datacenter, including reduced network latency for applications and greater economies of scale.

6. Reliability

Cloud computing makes data backup, disaster recovery and business continuity easier and less expensive, because data can be mirrored at multiple redundant sites on the cloud provider's network.

(Tapescript 15)

As you can see, just like a vicious flu virus, a computer virus is something that you want to avoid. The terms virus and malware are

often used interchangeably; however, a virus is one of many types of malware, and only one aspect of the overall threat landscape. As a result, traditional antivirus software alone will not fully protect you from all threats. Instead, look into comprehensive security software like Norton Security with patented technologies that work together to outsmart online threats. Scanning your system for viruses, and running continuous automatic silent updates, Norton Security keeps you protected from existing, new, and even yet-to-be-invented threats. And if a virus slips through on our watch during your subscription period, Norton support experts will do everything they can to help fix problem at no additional cost. That's the assurance and peace of mind you only get with our Norton Virus Protection Promise.

(Tapescript 16)

With the progress of our life becomes more and more difficult because of excessive information technologies. We must keep huge amount of information in our brain. But at the same time those information technologies help us to make life easier. Nowadays we can see many gadgets that can remember all information you need and you will be able to get it in any second. But these gadgets don't just remember information. There are devices that help to do something. They can be you if you can't. It's really so. They can transport heavy things, create something, walk the dog, water flowers, and even dance. Human creates robots to get a powerful force that can be used instead of human strength. Robot is a machine which has specific program that consists of conditions and actions for them. So, someone wants to do

something. Inventors create a special machine which is able to overcome the problem. Programmers write a program to rule the robot or to get automatically working bot. Testers test robots and decide whether they can solve the problem. If yes, then someone gets a robot for work. Scientists are breaking their heads about artificial brain all around the world. Robots are mechanical helpers of humans that are capable to perform operations, according to the program installed in them. Nowadays, due to the scientific-technical progress, the elaboration of robots can significantly change human's way of life. And this is clear, because even now we can see production prototypes that demonstrate the achievements of scientists and engineers in this field. And although, there are still a lot of problems to be resolved, I think we can already say with confidence that in the next 20 years better and cheaper technologies will appear in this field that will lead to the creation of a market of robots of different functional purpose and difficulty level. On the other hand, the level of development of robots depends on perfection in areas such as, for example, human speech recognition or artificial intelligence.

(Tapescript 17)

Like any technology, virtual reality has both good and bad points. How many of us would rather have a complex brain operation carried out by a surgeon trained in VR, compared to someone who has merely read books or watched over the shoulders of their peers? How many of us would rather practice our driving on a car simulator before we set foot on the road? Or sit back and relax in a Jumbo Jet, confident in the

knowledge that our pilot practiced landing at this very airport, dozens of times, in a VR simulator before she ever set foot in a real cockpit? Critics always raise the risk that people may be seduced by alternative realities to the point of neglecting their real-world lives—but that criticism has been leveled at everything from radio and TV to computer games and the Internet. And, at some point, it becomes a philosophical and ethical question: What is real anyway? And who is to say which the better way to pass your time is? Like many technologies, VR takes little or nothing away from the *real* world: you don't have to use it if you don't want to. The promise of VR has loomed large over the world of computing for at least the last quarter century—but remains largely unfulfilled. While science, architecture, medicine, and the military all rely on VR technology in different ways, mainstream adoption remains virtually nonexistent; we're not routinely using VR the way we use computers, smartphones , or the Internet. But the 2014 acquisition of VR company Oculus, by Facebook, greatly renewed interest in the area and could change everything. Facebook's basic idea is to let people share things with their friends using the Internet and the Web. What if you could share not simply a photo or a link to a Web article but an entire experience? Instead of sharing photos of your wedding with your Facebook friends, what if you could make it possible for people to attend your wedding remotely, in virtual reality, in perpetuity? What if we could record historical events in such a way that people could experience them again and again, forever more? These are the sorts of social, collaborative virtual reality sharing that (we might guess)

Facebook is thinking about exploring right now. If so, the future of virtual reality looks very bright indeed!

(Tapescript 18)

The nanomaterials field includes subfields which develop or study materials having unique properties arising from their nanoscale dimensions. Interface and colloid science has given rise to many materials which may be useful in nanotechnology, such as carbon nanotubes and other fullerenes, and various nanoparticles and nanorods. Nanomaterials with fast ion transport are related also to nanoionics and nanoelectronics.Nanoscale materials can also be used for bulk applications; most present commercial applications of nanotechnology are of this flavor. Progress has been made in using these materials for medical applications, for example, nanomedicine. Nanoscale materials such as nanopillars are sometimes used in solar cells which combats the cost of traditional silicon solar cells.Development of applications incorporating semiconductor nanoparticles to be used in the next generation of products, such as display technology, lighting, solar cells and biological imaging; see quantum dots. Recent application of nanomaterials include a range of biomedical applications, such as tissue engineering, drug delivery, and biosensors.

<h1>GLOSSARY</h1>

A

access method - A technique for moving data, voice or video between main storage and input/output devices.

account - Within billing terminology, this represents a customer's product.

account code - Two-digit code associated with an authorization code.

adaptive transform coding - An audio coding algorithm.

algorithm - A prescribed set of well-defined rules for the solution of a problem in a finite number of steps.

applications software - The instructions that direct the hardware to perform specific functions. Common software applications include payroll, inventory control and electronic spreadsheets.

artificial intelligence -The capability of a computer to perform functions that are normally associated with human intelligence, such as reasoning, learning .

assembler - A program capable of translating assembly code into digit code.

auxiliary equipment - Equipment not under direct control of the central processing unit. Synonym: ancillary equipment.

B

background errors - Errors that occur during the normal operation of the system. **bar-code scanner** - Optical character reader , used to read bar-codes by means of reflected light, such as the scanners that read the UPC on supermarket products.

binary - A number system based upon twos rather than tens and that uses only two characters, zero (0) and one (1).

bit duration - (1) Equivalent to the time that it takes one encoded bit to pass a point on the transmission medium.

bits per second (bps) - The rate at binary digits is measured.

booting - Technique for loading a program into a computer's memory in which the program's initial instructions direct the loading of the rest of

the program. **bridge, bridging** - Equipment and techniques used to match circuits to each other ensuring minimum transmission impairment.

buckets - (1) In Sprint billing software, an electronic file or folder in which records are kept until invoice processing occurs.

band - A portion of the electromagnetic spectrum used heavily for satellite and microwave transmission; frequencies of approximately 4 to 6 GHz.

C

cache memory - A high-speed, buffer-type memory filled at medium speed from the main memory.

call detail record- Processing of call-specific information start time, elapsed time, number dialed, date, other pertinent customer data to provide call detail reports.

canned program - A software program written to meet the expected customer needs of a certain application. (Opposite of custom programs.)

capability - Data processing equipment characteristic by which one machine may accept and process data without conversion or code modification.

carrier - A company authorized by appropriate regulatory agencies to provide communications services.

D

daisy chain - Connection of multiple devices in a serial fashion. [An advantage of daisy chaining is a savings in transmission facilities. The disadvantage is that if a device malfunctions, all other devices daisy-chained behind it are disabled.]

data - (1) Units of information. (2) Any representation, such as characters or analog quantities, to which meaning is or may be assigned.

data conversion - Process of changing information from one form of representation to another.

data encryption standard (DES) - A cryptographic algorithm designed by the National Bureau of Standards to encipher and decipher data using a 64-bit key.

database - An organized compilation of computerized bits. [Formalized rules exist for the establishment, control and access of a database.]

datalink control - Second layer in the International Standards Organization reference model for Open Systems Interconnection (OSI). Synonym: protocol.

deadlock - Unresolved contention for the use of a resource.

debug - Checking the logic of a program to isolate and eliminate the mistakes from a computer program or other software. Synonym: troubleshoot.

denial - Call condition that occurs when no circuits are available and a busy tone is returned to the calling party.

diagnostic - Means of detection, discovery and further isolation of an equipment malfunction or a processing error.

 E

edit - Functions such as the rearrangement or the addition of data, the deletion of unwanted data, format control, code conversion.

electronic mail -A computer-aided method of communication where an individual sends an on-line message to another individual via dial-up or dedicated access.

emulate -A method by which an imitating system can accept the same data, execute the same computer programs and achieve the same results as the system.

enable - (1) To prepare a circuit for operation. (2) To allow an item to function.

encoding - The introduction of data on a medium such as a magnetic strip on plastic cards.

encryption - Conversion of data into code form for security purposes during transmission and decoding at the receiving end.

equalization - In data communications, a compensation for the increase of attenuation within frequency.

ergonomics - promotes the consideration of human factors in the design of a working environment and its components (heat, light, sound, equipment).

error - (1) A difference between a computer value and the theoretically correct value. (2) A malfunction that is not reproducible.

error-free seconds (EFS) - Ratio of the number of seconds in which there are no bits in error to the total number of seconds in the measurement interval.

F

facsimile - The replicated image of picture, drawing or document.

fault tolerance - The level of ability within a program or system to operate properly even if errors occur.

feedback - Return of part of the output of a machine, processor system to the computer as input for another phase; typically used for surveillance, self-correcting maintenance or control purposes.

file - (1) An organized, named collection of records treated as a unit. (2) The storage media on which these records are kept.

firmware - Computer programs that are embodied in a physical device that can form part of a machine. [Contrasted with software, which refers to the entire set of programs, procedures and documentation associated with a system, specifically computer programs, which are portable from one machine to another.]

G

gateway - A product or feature that uses proprietary techniques to link heterogeneous systems.

global delivery model-Gartner defines a global delivery model as "the optimum combination of processes, end-to-end methodologies and quality procedures, with high-quality skills and resources available internally or externally, in requisite quantities, on a global basis, that enables organizations to maximize the quality of their solutions while minimizing the overall cost and delivery time of their IT services."

GUI -(graphical user interface) A graphics-based operating system interface that uses icons, menus and a mouse (to click on the icon or pull down the menus) to manage interaction with the system. Developed by Xerox, the GUI was popularized by the Apple Macintosh in the 1980s. At the time, Microsoft's operating system, MS-DOS, required the user to type specific commands, but the company's GUI, Microsoft Windows, is now the dominant user interface for personal computers (PCs). A comprehensive GUI environment includes four components: a graphics library, a user interface toolkit, a user interface style guide and consistent applications.

H
handoff - Process by which a cellular radio telephone call is transferred from one cell site to another.

handset - That portion of the telephone containing the transmitter and receiver which is designed to be hand-held when the telephone is in use.

hardwire - To directly attach or dedicate a cable or line between units of equipment.

hertz (Hz) - International standard unit of frequency. [Replaces, and is identical to, the older unit cycles-per-second.]

heuristic - Pertaining to exploratory methods of problem solving in which solutions are arrived at by an interactive, self-learning method.

hierarchy - The relationship of various accounts or entities within a multi-level structure.

holding time - The total period a communications channel or facility is in use for each transmission, including both message and operating times.

housekeeping operation - The execution of a computer program that doesn't directly contribute to a product or service but is essential to the running of the system. For example, the initialization of storage areas or the execution of a calling sequence. Synonym: overhead operation.

hubbing - Converting analog lines to a digital T1 facility.

I

infrared - Pertaining to the frequency range in the electromagnetic spectrum that is higher than radio frequencies but below the range of visible light.

initialize - To set counters, switches, addresses or contents of storage to zero or another starting value at the beginning of or at prescribed points in the operation of a computer routine.

input/output (I/O channel) - 1) A general term for equipment used to communicate with a computer. (2) The process of transmitting information from an external source to the computer, or from the computer to an external source. (3) Buffer area for the temporary storage of data.

interactive - (1) A conversational mode between a user and computer system.

interference - (1) Unwanted noise, crosstalk or signal deviations on communications channels that result from natural or man-made occurrences.

Internet Service Provider - An entity that provides attachment to the Internet.

interoffice trunk (IOT) - A direct link between local exchange offices.

IT Communications Engineer - ITD Staff who work with the department through the Network Analyst to design the services required by the customer.

IT Communications Services - The ITD Staff who provide voice, video and data services to campus.

J

Java -The term "Java" can be applied to Sun's Java platform or to its Java programming language. The Java platform is made up of a set of technologies that provide cross-platform, network-centric computing solutions. The programming language is simply one aspect of the Java platform.

Java applet - A small piece of Java code that implements a specific function. Applets may run on a server or be downloaded and run on the client's machine.

JavaScript- A scripting language targeted specifically to the Internet. It is the first scripting language to fully conform to ECMAScript, the Web's only standard scripting language.

Java servlet - Java programs that operates in conjunction with a Web server, and can output Hypertext Markup Language (HTML) to a browser or even communicate with Java applets.

Jidoka -Automatic inspection such that defects can be prevented from moving further along in the production process.

job scheduling -Job scheduling tools supervise a logical process (several jobs or programs) as they execute in a mainframe or distributed environment, providing scheduling and dependency management of the process as it runs, mainly in sequence, across disparate systems, geographies and applications.

K

kernel - The heart of an operating system, a kernel is the part of the operating system that interconnects with the hardware. With Open Systems Interconnection (OSI) software intended for use in Unix environments.

K-map (knowledge map)- A representation of concepts and their relationships (e.g., hierarchy, taxonomy and network). A K-map is a navigational aid that enables a user to hone in rapidly on the desired concept, and then follow links to relevant knowledge sources (information or people).

knowledge architect- The individual who oversees implementation of the enterprise's knowledge architecture, who leads the "knowledge architecture team" in identifying, organizing and providing access to scattered, heterogeneous information in digital and paper form.

knowledge base - The knowledge, which may include assertion, rules, objects and constraints, used by a knowledge-based or expert system.

knowledge capital- Intangible assets of an enterprise ,required to achieve business goals, including employee's knowledge; data and information about processes, products, customers and competitors; and intellectual property such as patents.

L

laser - A device which transmits an extremely narrow and coherent beam of electromagnetic energy in the visible light spectrum. [Acronym for Light Amplification by Stimulation of Emission of Radiation.]

latency - Time interval between when a network station seeks access to a transmission channel and access is granted or received.

layer - (1) Related processes, activities or information that constitute one level in a hierarchy or network platform. (2) Related communications-processing functions that comprise one level in a hierarchy of functions within the OSI reference model.

loading - (1) Initializing software on a computer processing unit. (2) A means of adding regularly spaced inductance units on a circuit to improve its transmission characteristics.

Local Area Data (LAD) Circuit - One or more pairs of copper wire leased from a Regional Bell Operating Company (RBOC) which in Michigan's case is Ameritech. The quality of these wires is not guaranteed.

loop - (1) A closed circuit. (2) The single connection from a switching center to an individual telecommunications instrument.

loop back - A method of performing transmission tests on a circuit which does not require the assistance of personnel at the distant end.

M

main distribution frame (MDF) - A steel bar framework that is the major cross connect point for COs and TOCs. Synonym: Main Frame.

mainframe - A central processing unit.

mean time to repair (MTTR) - The average time required to restore a customer's service after a network failure.

millisecond - One-thousandth of a second.

mode - A particular form or variety of software.

modem - A device which modulates and demodulates signals on a carrier frequency and allows the interface of digital terminals with analog carrier systems.

module - A unit of code performing a distinct function.

mouse - Hand-held device which is moved around on a flat surface in order to position the cursor on a video display.

multiplexer - Hardware device that allows handling of multiple variable speed signals over a single, higher speed channel.

multitasking - System that can run two or more programs at the same time. [By contrast, MS-DOS is a single-tasking operating system.]

N

nanosecond - One-thousandth-millionth (or billionth) of a second.

network - (1) System of mutually-communicating devices (for example: computers, terminals, peripheral devices, process controllers) connected in common and for a purpose by one or more transmission facilities.

Network Administrator - Departmental Staff member responsible for administering and maintaining a network.

network architecture - The philosophy and organizational concept for enabling communications between equipment at multiple locations; detailed specifications outlining the processors, terminals and transmission media, protocols and software to be used to accomplish accurate communications.

noise - (1) Unplanned energy introduced onto a communications path, resulting in transmission errors. Undesirable signals bearing no desired information. (2) The unpredictable difference between the observed data and the true process.

nonvolatile storage - A medium that maintains or keeps its contents when the power is removed.

O

object program - (1) Fully compiled or assembled software that is ready to be loaded into the computer. (2) The output from processing a source program through an assembler or compiler. Synonym: object code.

on-line system -A network interface which provides direct interface between applications programs stored in the computer used for data entry and output.

operating system - Software that controls the management and execution of programs.

other common carriers (OCC) - Specialized common carriers, domestic or international record carriers and domestic satellite carriers engaged in providing private line services (voice, data, audio or video) as authorized by the FCC.

overflow - The carry digit in a digital computer.

P

parity - A constant state or equal value.

parity bit - A check character or bit appended to an array of binary digits to make the sum of the digits, including the check bit, always odd or always even.

patch - To change a software routine in a rough or expedient way.

personal identification number (PIN) - The last two digits of an authorization code that identify the caller.

pixel - Single dot on a computer display, short for picture element.

point-to-point circuit - A private communications link between two terminations which does not connect with a public telephone system.

PostScript - Page-description programming language developed by Adobe Systems; designed to handle the placement of text and graphics on a page.

private line - (1) A point-to-point telephone line for the exclusive use of one party.

program - A series of instructions or statements assembled in a form acceptable to a computer and prepared to achieve a certain result.

Q

QA (quality assurance) -The historic focus of the National Committee on Quality Assurance (NCQA), fundamentally based on measures of compliance to standards or processes.

QoS (quality of service) -A negotiated contract between a user and a network provider that renders some degree of reliable capacity in the shared network.

quad-band - Mobile device that supports voice and data communications conforming to one bearer technology, such as GSM, but on four different sets of frequencies.

R

random access memory (RAM) - Portion of a computer storage which can be accessed non-sequentially and is considered the working memory.

raster - Scanning pattern used in generating, recording or reproducing television, facsimile or graphics images on a screen.

read only memory (ROM) - Portion of computer memory which is programmed electrically by the manufacturer, is unchangeable , is unaffected by a power loss.

resale carrier - Company which leases circuits or services from a major carrier and resells them to individual users.

retard coil - A coil having a large inductance which slows sudden changes of the current flow; a choke.

S

scrolling - The vertical movement of lines of data displayed on a CRT screen. **service and equipment record** - List of equipment billed to customer by type, quantity, monthly charge, location and billing dates.

service group - a group of lines built as one trunk group from a DMS-250 switch.

short haul - Circuit designed for use over distances of less than 200 miles.

software–Any of the routines, programs required to use computers; A written statement of the procedures to be used and the format of the data at every step.

strap - Hard-wired connection link between two tags, terminals.

subnet - A computer network composed of all devices whose IP addresses have the same prefix.

T

table driven - A logical computer process in which a user-entered variable is matched against an array of predefined values.

tail end hop off (TEHO) - Call in a private network which is carried over flat rate facilities (intermachine trunks or IMTs) to the switching node closest to its destination and is connected into the public network as a local call.

telecommunications - The transmission of voice, video and/or data through a medium by means of electrical impulses; all aspects of information transmittal.

test marketing - Research conducted within a small targeted consumer group to determine the viability of an expanded program.

test period - A defined amount of time used to measure circuit performance prior to releasing the circuit to a customer, usually after initial installation.

trace - Technique used in trouble shooting and/or debugging computer programs. **traffic** - All calls sent and received over a communications network.

transmission - The electrical transfer of a signal, message or other form of data from one location to another without unacceptable loss of information content.

tuning - The process of adjusting system control variables to make the system divide its resources most efficiently for the workload.

U

UI (user interface) - The connection between the user and a computer's hardware or software that permits the user to work productively with a system or a program.

ultra-high-speed broadband Internet- Gartner defines ultra-high-speed broadband Internet as residential services that support download speeds in excess of 50 Mbps.

UML (Unified Modeling Language)- A language for specifying, visualizing, constructing and documenting the artifacts of software systems.

Unix -Originally developed at AT&T Bell Laboratories, Unix is a multitasking, multiuser OS, which is portable to multiple server platforms. It also was developed as an open alternative to proprietary minicomputer OSs. Today, Unix can be found on platforms based on Intel's Itanium product family and Xeon, AMD's Opteron, IBM's Power, HP's PA-RISC, Sun and Fujitsu's UltraSPARC and SPARC-64, and other reduced instruction set computer (RISC) platforms.

V

variance - Difference between the expected or planned and the actual.

vertical marketing - (1) Focusing resources on carefully selected industry groups. (2) Offers designed and marketed to appeal to a specific industry group, such as: financial which contains banks, mutual funds and insurance companies.

very severe burst (VSB) - Interval between 2.5 and 10 seconds in which the background error rate (BER) exceeds 10-2; can alternatively be defined as three to ten consecutive severely errored seconds (SES).

via net loss (VNL) - The lowest loss in decibel (dB) at which a trunk facility can be operated considering limitations of echo, crosstalk, noise and singing.

videoconferencing - Two-way telecommunications service with live transmission of pictures and speech of conference participants transmitted between two or more locations.

videotex - An interactive information network that enables a home user with a telephone line, a decoder and television to access a mainframe computer which then displays both text and graphic information.

virtual banding - (1) A means of assigning calls to bands determined by originating and terminating NPAs, rather than by assigned circuits.

voice recognition - System of sound sensors that translate the tones of the human voice into computer commands to access or accomplish some service.

voice syntheses - Computer generated sounds that simulate the human voice.

W

WAM (web access management) -Web access management (WAM) offers integrated identity and access management for Web-based applications.

WAM (Web authorization management) A building block of an extranet.

WAP browser – Used to locate and display information on WAP-enabled devices. **Web-**The web is a hypertext-based global information system.

Web crawler -A piece of software (also called a spider) designed to follow hyperlinks to their completion, to return to previously visited Internet addresses.

Web e-mail -a user can walk up to any Internet-connected device, launch a browser, connect to a Web mail server, enter a user name/password / check e-mail.

Web-enabled - Refers to any application or document that uses the Internet as a communication backbone while exploiting HTTP as a means to link to content.

Web server -The central location that hosts Web pages or a Web site and enables a remote "client" (system or program) to access the material held.

Website-A collection of files accessed through a Web address, covering a particular theme or subject, and managed by a particular person or organization.

Wi-Fi (wireless fidelity) -Certification mark issued by the Wi-Fi Alliance to certify that a product conforms to the 802.11b, g and a standards for WLANs.

WML Script-Similar to Java Script, based on WAP's WML programming language.

X

XML (Extensible Markup Language) -A W3C open standard for describing data using embedded tags.

XSL-Extensible Style sheet Language associates presentation characteristics (e.g., layout) with the markup used in Extensible Markup Language (XML).

X-Windows -The software system written for managing windows under Unix. A graphics architecture, application programming interface (API) .

Y

Yahoo Messenger Free public IM service**.**

Z

zero latency- A goal to keep moving goods or info in the supply chain to provide near-real-time information management and reduce in-transit inventory costs.

ZigBee - Proprietary initiative based on IEEE 802.15.4 operating in the 2.4GHz band, with data rates less than 220 Kbps over 75 meters. It is designed for "command and control;" therefore, it does not support audio or video, but it can be used to send text messages and voice.

ZLE (zero-latency enterprise)- Any strategy that exploits the immediate exchange of information across technical and organizational boundaries to achieve business benefit. Latency cannot literally be zero in any real system because computers need time to "think."

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Муҳаммад ал-Хоразмий номидаги Тошкент ахборот технологиялари университети,"Чет тиллар" кафед-расининг (2017-йил 3 март № 8-сонли баённома мажлисида кўриб чиқилди ва чоп этишга тавсияланди

"АКТ сохасида иқтисодиёт ва менежмент" факултетининг илмий-услубий кенгашида кўриб чиқилди (2017-йил 14март № 8-сонли баённома)

ТАТУ илмий-услубий кенгашида (2017-йил 24.03 № 6(97)-сонли баённома) мухокама этилди ва нашр этишга тавсия қилинди.

Муҳаммад ал-Хоразмий номидаги Тошкент ахборот технологиялари университети Кенгашида (2017-йил 27.04 № 9 (669)-сонли баённома) мухокама қилинди, нашр этишга ва нашр гувоҳномасини олишга тавсия этилди.

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Ташқи: Ирискулов А.Т –ЎзДЖТУ ҳузуридаги"Чет тиллари" ўқитишиниг инновациявий методикаларани ривожлантириш Республика илмий - амалий марказининг Давлат таълим стандартлари бўлим бошлиғи доценти,филология фанлари номзоди