

**THE MINISTRY OF COMMUNICATION, INFORMATIZATION AND
TELECOMMUNICATION TECHNOLOGIES OF THE REPUBLIC OF UZBEKISTAN**

**“FOREIGN LANGUAGES”
DEPARTMENT**

“Hardware and Software”

Methodical manual for the Masters' degree students of Computer Engineering and
Software Engineering faculties

(5A330501, 5A330601)

Tashkent-2015

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KIRISH

2012 йил, 10 декабрдаги “Чет тилларни ўрганиш тизимини янада такомиллаштириш чора-тадбирлари тўғрисида”ги ПҚ-1875-сон қарорининг қабул қилиниши хорижий тилларни ўрганишга янада катта эътибор қаратилиши билан бирга чет тилларидан дарс берувчи ҳар бир ўқитувчига ўзига яраша маъсулият ва вазифаларни юклади. Мазкур **“Hardware and Software”** номли услубий қўлланма ҳам шу мақсаддаги ишларнинг давоми десак, бўлади.

Ушбу услубий қўлланма Магистратура босқич, Компютер инжиниринг ва Дастурий инжиниринг факултети 1-курс талабаларига инглиз тилидан амалий машғулот ўтказиш ва мустақил ишлаш учун мўлжалланган бўлиб, у 20 та дарсдан иборат. Дарслар ўз ичига мутахассисликка оид матн, матнда ишлатилган лексикага доир машқларни ўз ичига олган.

Мазкур услубий қўлланма талабалар билан мустақил ишлаш, талабанинг ўз йўналиши бўйича малакасини ошириш, сўз бойлигини кенгайтириш, ўқиш техникасини ошириш учун мўлжалланган.

Ҳар бир дарс ўз ичига мутахассисликка оид матн, лексикага, ўқиш ва тинглаб тушиниш қобилиятларига доир машқларни ўз ичига олган. Вазифалар мураккаб, аммо тушунарли тарзда келтирилган. Матнларнинг мураккаблик даражаси CEFR B2+ дастурга мос келади C1 даражасига кўтаришга хизмат қилади.

Булардан ташқари услубий қўлланмада тақдимот қилиш қоидалари ҳам келтирилгани талабаларга фан бўйича диссертация ишини химоясида яқиндан ёрдам бера олади.

“АКТ соҳасида иқтисод ва бошқарув” факултетининг илмий услубий кенгашида кўриб чиқилган ва нашр этишга тавсия этилган.

№ “ ” 2015 й.

Тақризчилар:

Газиёва В.Х. - ТАТУ “Чет тиллар” кафедраси мудири

Полвонова М.Ф. - ЎзДЖТУ “Инглиз тили лексикалогия” кафедраси катта ўқитувчиси

Тошкент Ахборот Технологиялари Университети, 2015

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Objectives:



- to enrich students' vocabulary base
- to enrich students' ESP vocabulary
- to train students for their future profession
- to train students to academic English
- to develop students' analyzing competence
- to improve students' thinking and predicting ability
- to improve students' reading comprehension
- to improve students' listening comprehension skills
- to train students to ESP
- to enrich students' IT connected vocabulary
- to enable them use this vocabulary in their everyday life
- to improve students' professional listening comprehension skills
- to improve student's speaking skills
- to motivate students think and share ideas
- to increase students' attentiveness on spelling
- to motivate students speak professionally on their specialty and prepare them for the topic of the listening text
- to teach making and presenting presentation skills

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Lesson 1. Computer Staff

Task1. Look at the given words and match them to the definitions.

1. circulate	6. freelance	11. maintenance
2. implement	7. derive	12. self-appointed
3. in-house	8. installation	13. expeditiously
4. corrode	9. vigilance	14. simulation
5. innovative	10. detection	15. computer-buff

- a) Ahead of the times; novel.
- b) An imitation or representation.
- c) Careful attention that you give to what is happening, so that you will notice any danger or illegal activity in the time it occurs
- d) Discovering something that cannot easily be found.
- e) Giving yourself a responsibility, job, position etc. without the agreement of other people, especially those you claim to represent - used to show disapproval
- f) Informal, a person who is master on computer and its programs
- g) Quickly and efficiently.
- h) Setting something into position for use
- i) The act of keeping something in good condition
- j) To be slowly weakened by chemical reactions.
- k) To come from, usually through a long, slow process.
- l) To make use of; to carry out.
- m) To move throughout an area or group; to move along a somewhat circular route.
- n) Working independently for different companies rather than being employed by one particular company
- o) Working within a company or organization

Listen and check your answers.

Task2. Read the text, pay attention to the new words in the text and say their meaning in the context. Translate the text into Uzbek or Russian.

As dependence on computers increases, so does the need for technical support. From installation of software to detection of viruses, computers require constant vigilance. Most larger companies find it most expeditious to maintain in-house computer staff. Many smaller companies, however, can't fund their own full-time, in-house technical help. Instead, many of them assign the task of computer maintenance to a current employee who may not have any formal training. Rather, these "computer buffs" have

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derived their skills through practice and self-training. These self-appointed tech specialists, however, often cannot solve bigger problems.

What's more, they may see their office relations corrode when they are swamped with basic user questions that they simply don't have time to address. For these reasons, many small companies choose to employ a freelance technical assistant who circulates among clients on an as-needed basis. With their professional training, these consultants may propose innovative solutions to users' unique needs, which could vary from tracking inventory to simulating mechanized processes. They can implement new programs, train personnel, and escape the workplace before being asked, "How can I cut this file and paste it somewhere else?"

Task3. Find the noun, verbal, adjective, adverb forms of the words. You can use dictionary. Not all forms of all word exist.

noun	verb	adjective	adverb
	circulate		
	corrode		
	derive		
detection			
			expeditiously
	implement		
		innovative	
installation			
maintenance			
simulation			
vigilance			

Task4. Fill in the blanks with the appropriate form of the words.

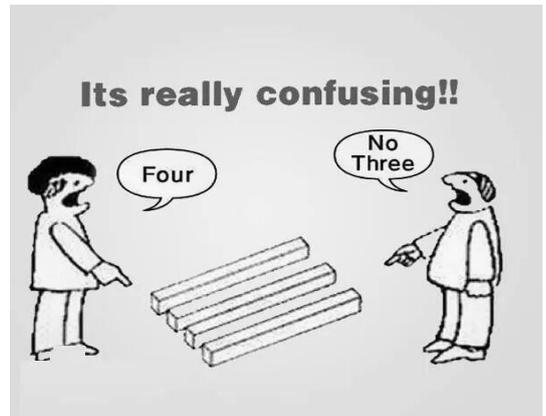
1. Sitting in salt water, the old coins and became very easy to break.
2. of the new software takes only four minutes.
3. Blood more quickly during physical exercises.
4. The Cyrillic alphabet was from the Greek alphabet.
5. Using carrier pigeons, the military commanders exchanged messages
6. With new medical technology, the of cancer is much easier nowadays.
7. To test car safety, automobile makers study crash
8. The only problem with living in such a big house is that it requires a lot of
9. is the requirement of the time.

Lesson2. Computer Input Devices



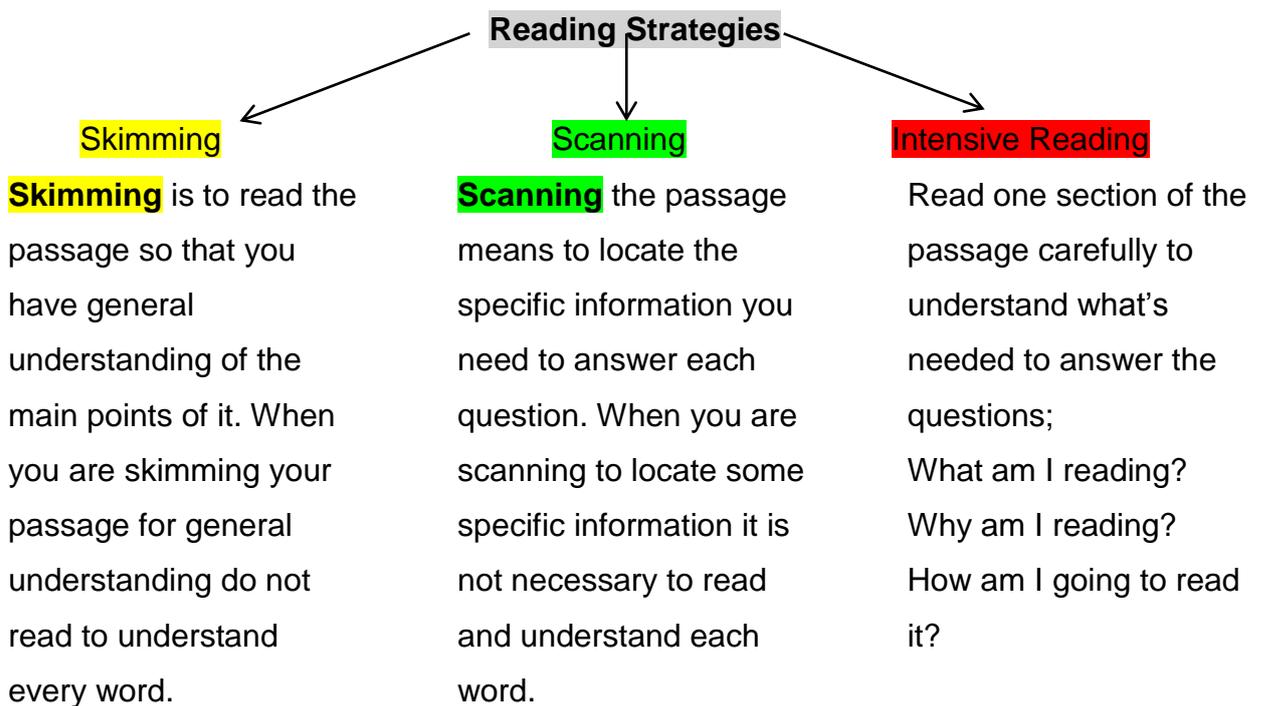
Task1: Answer the following questions.

- What are the input devices?
- Why are they called Input Devices?



Picture of Facebook corner

Reading Strategies



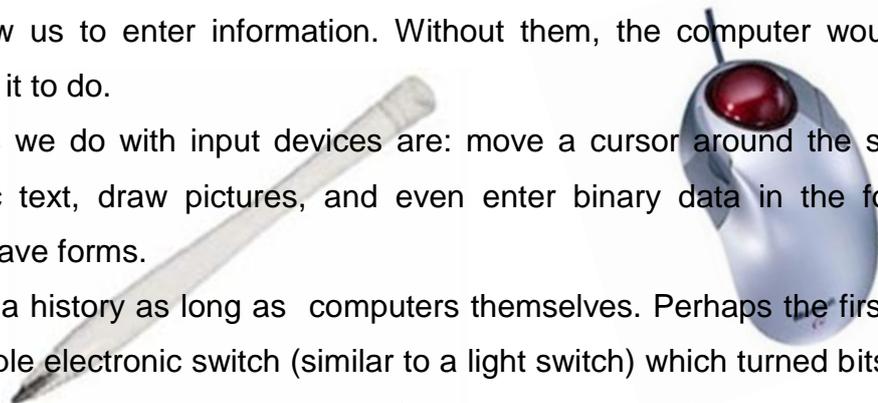
Task2. Scan the text and answer the questions 1-18.

Some Common Computer Input Devices

We use input devices every time we use a computer. Simply speaking, it is these devices which allow us to enter information. Without them, the computer would not know what we want it to do.

Some of the things we do with input devices are: move a cursor around the screen, enter alphanumeric text, draw pictures, and even enter binary data in the form of graphics or audio wave forms.

Input devices have a history as long as computers themselves. Perhaps the first input device was the simple electronic switch (similar to a light switch) which turned bits on or off. There were hundreds or even thousands of these switches on larger computers. It



used to take a team of programmers hours or even days to set up a computer to perform a single calculation.

Switches and jumpers are still used today on computers. For instance the power button on the computer is a switch which is also an input device telling the computer to power on or power off. Tiny switches called jumpers are also widely used on motherboards to change important settings such as processor clock speed or memory speed.

Most likely in front of you right now are two of the most popular input devices: the keyboard and the mouse.

And instead of a mouse on a laptop computer you normally have a touchpad.

As computers evolved throughout the late 20th century, computers became more and more interactive. Input devices came and went. Some lasted and some did not. The light pen and the joystick are almost unknown today, although they were popular before the mouse and the gamepad became well-known. Touch screens are already replacing keypads on mobile phones and may come to replace or augment keyboards and mice on PCs and laptops in the near future.

Different people prefer different input devices for doing same task. For instance, many graphic artists prefer to use a stylus and graphics tablet rather than a mouse. It might offer them a greater deal of artistic freedom, or precision while performing their work.

Sufferers of carpal tunnel syndrome often prefer a trackball or stylus to a mouse. Handicapped computer users have invented a wide array of input devices designed to replace the mouse including devices controlled by foot or even eye movement.

Not only PCs and mainframes use input devices. Almost all computers feature some kind of input device.

Special scanners are used in many stores and warehouses called barcode readers to enter stock and sell items at the cashier. These are input devices as well. Even microphones can technically be called input devices as a computer can respond to them and interpret them as incoming data.

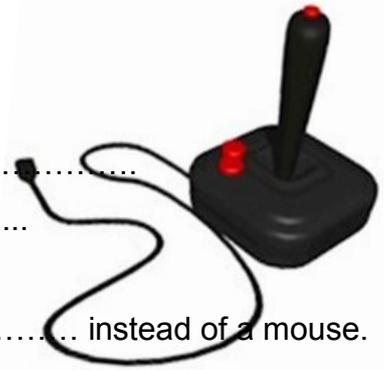
Corporations and especially government institutions are already implementing the second generation of input devices to improve security. These include retina scanners and/or fingerprint readers to replace or improve accuracy of username and password authentication. You will be seeing more of this kind of biometric authentication in the coming years as a general remedy for weak passwords or leaked passwords.

In summary, input devices are how you interact with a computer. The computer responds to your input and hopefully does what you need it to do. It seems really simple, and that's the way it was meant to be!

Write short answers with no more than three words.

Questions 1-8.

1. Input devices are these devices which allow us to
2. First input device was similar to
3. The most popular input devices are
4. On a laptop computer you have normally have a instead of a mouse.
5. Keypads on mobile phones are already replaced to
6. is an input device which tells the computer to power on or power off.
7. Second generation of input device to improve security on biometric authentication is
8. is a special scanner to enter stock and sell items at the cashier.



Questions 9-18.

If you consider the statement to be true, write TRUE.

If you consider the statement to be not true, write FALSE.

Mark according to the reading passage

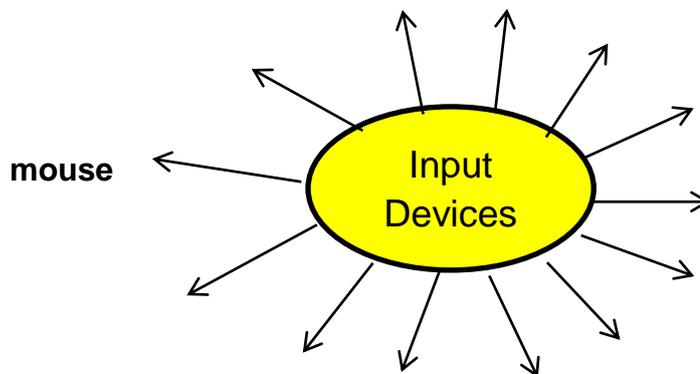
	Statement	T.F.
1	Input devices are devices which allow computer to give us information	
2	Input devices were created long before than computers themselves.	
3	In larger computers it took even days to set up a computer to perform a single calculation.	
4	Power button on the computer is a switch which is also an output device.	
5	As computers evolved throughout the late 21 st century, computers became more and more interactive.	
6	All the devices created since computers exist last till now.	
7	Keypads are already replacing touch screens on mobile phones.	
8	Everybody prefers the same touchpads as an input device for doing same task.	
9	Many graphic artists do not prefer a mouse to stylus and graphics tablet.	
10	For handicapped users a wide array of input devices have been invented to replace the mouse	

Lesson3. Clustering/Brainstorming

Find 12 input devices from the text and write them in the cluster.

(this task may also be done with the class, drawing the cluster on the board)

Clustering is a way of splitting central idea into main points and details in order not to mix the ideas in speech and writing.



Home Assignment:

- Choose one input device; **make presentation on Power Point** covering features, view, creation, evolution and everything about that device fully. Get ready to present it within about 5 -6 minutes for the next lesson.

Lesson 4.

Introduction to Computer Software



Task1.

Match the questions to the answers.

- | | |
|--|--|
| 1. What does the computer mainly consist of? | • Software is just instructions written by a programmer which tells the computer what to do. |
| 2. What is Hardware? | • Hardware and Software |
| 3. What is Software? | • It is computer itself; all the devices of computer |

Picture of Facebook corner

Task2. Learn the following Key words before listening.

1. **software** - is just instructions written by a programmer which tells the computer what to do.
2. **bug** - an error in a computer program or system
3. **crash** - a sudden failure which puts a computer system out of action
4. **terminate** - bring to an end
5. **to force** - drive or push into a specified position or state using physical strength or against resistance, achieve or bring about (something) by effort
6. **compatible** - (of a computer, piece of software, etc.) able to be used with a specified piece of equipment or software without special adaptation or modification
7. **emulation** - the act of emulating or imitating, the effort or desire to equal or surpass another or others
8. **to install** - to set program into computer into the position of use
9. **proprietary software** – (closed source)- privately developed and owned technology, software in which the license stipulates that the user cannot see, edit, or manipulate the source code of a software program
10. **unzip** - decompress (a compressed file)
11. **debugger** - a computer program that assists in the detection and correction of errors in other computer programs
12. **a compiler** - is a computer program which converts language that people can use into a code that the computer can understand.
13. **access** - the process of obtaining or retrieving information stored in a computer's memory, obtain or retrieve (computer data or a file)
14. **radical** - of the root of a number or quantity, (especially of change or action) relating to or affecting the fundamental nature of something; far-reaching or thorough

Task3. Listen to a recording about **Software** and fill the blanks while listening.

Introduction to Computer Software

For as long as there has been computer _____, there has also been computer _____. But what is software?

Software is just instructions written by a _____ which tells the computer what to do. Programmers are also known as 'software developers', or just plain 'developers'.

Nothing much is _____ about software.

Software programs can have millions of lines of _____. If one line doesn't work, the whole program could _____! Even the _____ of starting software goes by many different names in English. Perhaps the most _____ technical term is 'execute', as in "the man executed the computer program." Be careful, because the term 'execute' also means (in another _____) to put someone to _____. Some other common verbs used to _____ a software program you will hear are 'run', 'launch', and even '_____ ' (when the software in question is an operating _____).

Software normally has both features and _____. Hopefully more of the former than the latter! When software has a bug there are a few things that can happen. The program can _____ and terminate with a confusing _____.

Task4. Answer to the following questions:



- What is Software?
- Who are computer programmers?
- What happens if one line of codes doesn't work?
- What are the 2 meanings of the word "execute"?
- What other common verbs are used to start a software program?

Lesson 5.

Task1. Correct the mistakes on spelling

Listen to the T3, find 16 spelling mistakes and correct them.

I think everyone ~~study~~ Information Technology should learn at ~~last~~ one programming language and write at least one program. Why? Programming forces you to think like a computer. This can be very regarding when dealing with a wide range of IT-related issues from tech supper to setting up PPC (pay-per- click) advertising campaigns for a client's web site. Also, as an IT professor, you will be dealing with programmers on a daily basis. Having some understanding of the work they do will help you get along with them better.

studying, least

Software programs are normally written and compiled for certain hardware platforms. It is very important that the software is compatible with all the components of the computer. For instance, you cannot run software written for a Windows computer on a Macintosh computer or a Linux computer. Actually, you can, but you need to have specialized emulation software or a virtual machine installed. Even with this special software installed, it is still normally best to run a program on the kind of computer for which it was intended.

Task 2. Check your spelling and pronunciation of words with teacher and repeat them after teacher. Like: *last-least*

Task 3. You are going to listen to an audio material which is the continuation of the previous ones. While listening, you should take notes of main points of the information for the future discussion of it.

After listening, answer to the following questions:

1. As an IT professional how many basic kinds of software do you need?
2. What basic kinds of software are mentioned?
3. What examples are given as proprietary software?
4. What examples are given as open source software?
5. What caused a major project to fail?

Task 4. Discussion Questions



1. What are the challenges you face when you write some software?
2. Name three pieces of software you use frequently. Why do you use them? What would you change about them?
3. Pretend you are the world's best programmer and can write computer code as fast as you can think. What kind of software would you write?
4. Describe what did you do in the practical part of your bachelors' degree qualification paper? What software did you write?

Home Assignment:

Make a presentation of software you have created. In your presentation include:

- ✓ Actuality of the software
- ✓ Novelty (what's new)
- ✓ Description of the software

Lesson 6.

Famous People in the History of IT

Have you ever stopped to think about where all this amazing technology computers came from? Who invented it all? Well, behind every company, programming language or piece of software, there is a person - or sometimes a team of people - who turned ideas into reality. We've all heard of Bill Gates, the founder of Microsoft and one of the richest men in history. Equally famous is Steve Jobs, the person who, along with Steve Wozniak, started Apple computers. However, there are hundreds of other people, from early pioneers to later geniuses, who aren't as well known but who deserve recognition for the work they did in advancing the world of computing.

One of the first people to conceive of computers was Charles Babbage, an English mathematician and analytical philosopher who drew up plans for the first programmable computer called the Difference Engine. George Boole came up with a way of describing logical relations using mathematical symbols - now called Boolean logic - that is the basis of all modern computer processes. Vannevar Bush first proposed an idea in 1945 he called 'memex', which we now know as 'hypertext'. Another notable figure in early computing was Alan Mathison Turing, an Englishman known as the "father of computer science". He invented the Turing Test, which is a way to find out if a computer is acting like a machine or a human. Another English computer scientist, Edgar Frank Codd, is

known for inventing the "relational" model for databases, a model which is still in use today.

As computing became more complicated, people needed a way to make it easier to tell computers what to do, in other words, they needed ways to program the computers. These computer instruction systems became known as computer, or programming, languages. FORTRAN, the first widely used high-level programming language, was invented by an American computer scientist, John Warner Backus. Other notable North American inventors of programming languages include Dennis Ritchie, author of the C programming language, Larry Wall, creator of Perl, and Canadian James Gosling, known as the father of Java. Two men from Denmark are responsible for writing two other famous programming languages. Bjarne Stroustrup came up with C++ and Rasmus Lerdorf devised PHP. Dutchman Guido van Rossum wrote the Python programming language, while the Japanese computer scientist, Yukihiro Matsumoto, made a language called Ruby.

One of the uses of programming languages is to create operating systems, which are essentially sets of instructions that allow computers to function.

The most widely-used operating system in the world is Microsoft Windows, but there are other powerful ones that exist, such as Unix, created by Ken Thompson and his team at AT&T in 1969, and Linux, written by Linus Torvalds in 1991.

Microsoft, of course, is the largest software company in the world, but there is another company, Intel, that is equally important when it comes to hardware. Intel was started by several people who are now legends in the computer world, including Robert Noyce and Gordon Moore. Moore is also famous for coming up with Moore's Law, which predicts the rapid increase of computer technology over time. Intel expanded rapidly during the 1980s and 1990s when a man named Andy Grove was in charge of the company.

Other notable figures in the evolution of the computer industry are Ralph Baer, inventor of the first home video game console, Seymour Cray, for many years the manufacturer of the world's fastest supercomputers, Richard Stallman, founder of the free software movement called GNU, and Tim Berners-Lee, the man who created the basis for the World Wide Web.

Through their creativity and hard work, all of these people contributed to shaping what we now experience as Information and Computer Technology. Every time you boot up a computer, play a video game, surf the Internet, or use a programming languages try to remember the individuals who made these wonders possible.

Discussion Questions

Pick any person from this reading and write a short essay on their life. How do they inspire you?

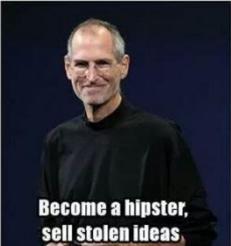
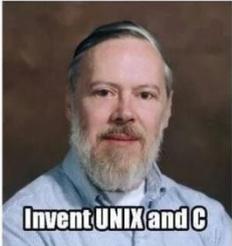
Will you ever be considered a famous or great IT person? Write why or why not.

Task: Match the following geniuses with inventions according to the text.

Bill Gates	Turing Test
Steve Jobs	Microsoft
Charles Babbage	Difference Engine
Bjarne Stroustrup	Boolean logic
George Boole	GNU
Vannevar Bush	'hypertext'
Alan Mathison Turing	"relational" model
Edgar Frank Codd	FORTRAN
John Warner Backus	Java
Canadian James Gosling	C++
Ken Thompson	Unix
Richard Stallman	PHP
Rasmus Lerdorf	Apple

Task: Look at the picture and information in it.

True/False questions

Steve Jobs (b. 24 Feb 1955)	Dennis Ritchie (b. 09 Sep 1941)
	
Become a hipster, sell stolen ideas	Invent UNIX and C
DIED 05 OCT 2011	DIED 12 OCT 2011
Without Steve Jobs, we would have:	Without Dennis Ritchie, we would have:
- No iProducts - No over-expensive laptops	- No Windows - No UNIX - No C - No programs - A large setback in computing - No generic text languages - We would all read in Binary
Praised by media as Jesus of computing	Ignored
They died in the same year, but it seems only few notice the death of Dennis Ritchie compared to Steve Jobs	

1. Steve Jobs was more well-known than Dennis Ritchie. _____
2. Dennis created Unix. _____
3. Whole the world was informed about the death of Dennis Ritchie. _____
4. Dennis Ritchie was 72 when he died. _____
5. Laptops of Steve Jobs were affordable. _____
6. If there were not Steve Jobs we would still read in binary. _____
7. Both of them were born and died in the same year _____

Lesson 7

IT Discomforts

What is a Computer Virus?

A computer virus is an executable file that is designed to replicate itself and avoid detection. A virus may try to avoid detection by disguising itself as a legitimate program. Viruses are frequently rewritten and adjusted so that they will not be detected. Antivirus programs must be updated continuously to look for new and modified viruses.



Picture of Facebook corner

Task 1. Match the words taken from the text above with the definitions.

replicate	lawfully
disguise	make an exact copy of; reproduce
legitimate	alter (smth) slightly in order to achieve the desired fit, appearance
adjust	changed from its original form during development or evolution
modified	make (something) unrecognizable by altering its appearance

Task 2. Discuss what parts of speech they are in the text.

Task 3. Read the text again and underline all adjectives in red, verbs in blue.

Computer Virus Symptoms:

If you suspect or confirm that your computer is infected with a virus, obtain current antivirus software. When a virus infects your e-mail or other files, it may have the following effects on your computer:

1. The infected file may make copies of itself, which can use all the free space in your hard disk.
2. A copy of the virus infected file may be sent to all the addresses in your e-mail address list.
3. The virus may reformat your disk drive and delete your files and programs.
4. The virus may install hidden programs, such as pirated software, which can be distributed and sold from your computer.
5. The virus may reduce security, which may allow intruders to remotely access your computer or network.

Lesson 8

Blackmail/Extortion (legal term): A criminal act that involves malicious threats intended to cause injury to an individual to compel him or her to do an act against his or her will. Blackmail or extortion often involves a threat to spread information about the target that will defame his or her reputation or bring criminal actions against him or her unless some amount of money is paid to the individual making the threats.

Criminals are increasingly targeting companies' computers with Distributed Denial of Service (DDoS) attacks, not just to reduce revenues but also to extort money—and companies are likely not to report the losses. According to MCI Inc. and the FBI, the culprits are often cybercriminals residing outside U.S. legal jurisdictions. Anti-**Distributed Denial of Service** attack services cost about \$12,000 a month and are available from companies such as AT&T and MCI Inc.. The most popular tools used are **Cisco System Inc.**'s Riverhead gear and Arbor Networks

Inc.'s intrusion-detection tools—able to filter about 99% of the attack traffic.

Though most companies conveniently stay quiet and pay the ransom to offshore banks, one company fought back. Authorize.Net refused to pay cyber extortionists. Instead, the company reported the incident to the police, went public about the **attacks**—apologizing to clients for the delays in service—and installed anti-DDos equipment.

Yes/No questions

- 1) Extortion criminals don't make people do something against their will.____
- 2) They usually threat to spread personal information about the target.____
- 3) Computer attacks are obviously decreased.____
- 4) Cisco System is used to protect computers.____
- 5) The system could filter only half of the attack traffic.____

Lesson 9

Data Havens

Data Havens (general term): Concentrations of illegal data in computer servers residing beyond **copyright** protection **law**. In the 1989 book *Islands in the Net*, author Bruce Sterling forecast that in the future, data would be not only pirated on a wide-scale basis and would be unable to be protected from crackers. He also said that sovereign nations not belonging to a copyright protection convention might copy information and resell it at low-end prices. Although in 1989 data havens were simply ideas in a book, today they are a practical possibility. But before explaining how this is possible, some important history on curbing **Intellectual Property (IP) piracy** is needed.

Back in 1886, primarily as a means of curbing IP piracy, several European states ratified the International Union for the Protection of Literary and Artistic Works. It was known then as the Berne Convention and formed the basis for IP property law. Since 1967, the Berne Convention has been administered by WIPO (the World Intellectual Property Organization). Under this convention, most nations afford foreign authors the

same protection that they give their domestic authors. Since 1967, this principle has been adopted by over 150 nations.

Besides the Berne Convention, other additions such as the Universal Copyright Convention provide protections for artists' works. In recent years, the Berne Convention protocols have been embedded into the WTO (World Trade Organization) Agreement on Trade-Related Aspects of **Intellectual Property Rights** (TRIPS), which includes IP protection for databases and chip architectures.

Despite the various means adopted by countries to protect IP, some small-nation exceptions, such as Bermuda, do exist. Therefore, the potential for a data haven in today's world is a real possibility and not just fiction. In short, a small nation that is not a signatory to the Berne Convention or other such agreements could gain substantial market share by illegally copying and transmitting IP that is protected by copyright laws in most other nations.

True/False

- 1) According to Bruce Sterling, the data would be protected.
- 2) In 1989 there are some ideas for data heavens, which is quiet possible nowadays.
- 3) The basis for ip property was administrated by WIPO.
- 4) Most nations cannot afford authors protection.
- 5) In most nations illegally copying is protected by copyright laws.

Lesson 10

Domain Name System (DNS) (general term): A hierarchical system of naming hosts and placing the **TCP/IP** hosts into categories. The DNS is a way of translating numerical **Internet** addresses into word strings to computer and network names. For example, the host name rs.internic.net is also known as 198.41.0.13.

Any machine on the Internet has its own address, called the Internet Protocol Address (**IP Address**). The IP address looks something like this: 123.123.123.123—four numerical segments with a value range between 0 and 255 (one byte) separated by dots. Any computer is reachable through its IP address.

Because users cannot remember these numerical strings of IP addresses, an alternative system was needed. For this reason, IP addresses were translated into more logical text strings for humans to remember, such as cs.yale.edu—which means computer science department at Yale University, a U.S. educational institution.

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During **ARPANET**'s development, one file called host.txt existed, and it was here that all IP addresses were listed. At the end of each day, all computers connected to the Internet would get the list from a central server where it was kept. With time, the number of connected hosts increased to such a degree that the size of the host file was huge and the system became inefficient.

Thus, the DNS (Domain Name System) was invented—a hierarchical domain-based

structure in which the Internet is divided into pieces called “domains.” The pieces are categorized as top-level domains and sub-domains. The top-level domains include generic and country domains.

The generic domains are *com* (a commercial enterprise), *edu* (an educational institution), *gov* (a government agency), *int* (an international institution), *mil* (the military institutions), *net* (a network institution), and *org* (a nonprofit organization).

The country domains, allocated one per country, look like this: *au* for Australia, *ca* for Canada, *uk* for the United Kingdom, and *us* for the United States. The details are defined in ISO 3166.

Each top-level domain is divided into several sub-domains, with each domain having control over its own sub-domains. For example, the *edu* domain covers all of the educational institutions or sub-domains—such as Yale University, Princeton University, Rutgers University, and Harvard University. Moreover, the country domains have sub-domains. For example, the *uk* (the United Kingdom) and the *jp* (Japan) domains have two common sub-domains: *ac* (which stands for academic) and *com* (which stands for commercial). Each domain has a particular server with a table containing all IP addresses and domain names belonging to its domain.

An organization called the Internic maintains a database having all registered domains for the world. Anyone can query its database by means of **who is**. Although several organizations maintain whois databases, the Internic has the main database. Any company, institution, or organization wanting to have its own domain name has to register it with the Internic or one of the other registries.

Many whois servers exist around the globe. For example, in Amsterdam, there is the European whois server at RIPE (Reseaux IP Europeans).

During the week of March 7, 2005, cyber scam artists manipulated the Internet’s directory service and capitalized on a hole in Symantec Corporation’s Gateway Security Appliance and Enterprise Firewall products to trick Internet users into installing adware and other programs on their computers. These DNS “poisoning attacks” caused Web **browsers** pointed at Google.com, eBay.com, and Weather.com, for example, to go to malicious Web pages that installed undesirable programs.

In such “poisoning attacks,” malicious crackers use a DNS server they control to transmit erroneous addresses to other DNS servers. Thus, users relying on a poisoned DNS server to manage their requests may discover that entering the URL of a popular Website sends them to some other unexpected and likely malicious Web page. Besides being a nuisance, DNS poisoning could be a tool for conducting online **identity theft**. Cybercriminals could, in fact, construct phishing Websites identical to popular sites such as Google and eBay to secretly capture online users’ personal data.

Short answers

- 1) All machines on the internet have address, how do we call it?
- 2) What is the value range of addresses strings?
- 3) Some examples of numeral string alternatives?
- 4) Why the system became inefficient?
- 5) Give some examples of generic domains?

Lesson 11

Electronic Payment Systems (general term): Today, many users make payments electronically rather than in person. Hundreds of electronic payment systems have been developed to provide secure Internet transactions. Electronic payment systems are generally classified into **four categories**: credit card and debit cards; electronic cash; micropayment systems; and session-level protocols for secure communications.

A secure electronic financial transaction has to meet the following four requirements: ensure that communications are private; verify that the communications have not been changed in **transmission**; ensure that the client and server are who each claims to be; and ensure that the data to be transferred was, in fact, generated by the signed author.

To meet these objectives, every electronic payment system developed depends on some type of encryption and/or utilization of digital certificates. Using an encryption algorithm, the plaintext (also known as the original text) is changed into ciphertext, which is decrypted by the receiver and transformed into clear-text. The encryption algorithm utilizes a key, a binary number often ranging in length from 40 to 128 bits. After being encrypted, the information is considered to be coded and therefore “locked.” The recipient uses another key to “unlock” the coded information, restoring it to its original binary form.

Two cryptographic methods used in electronic payment systems include the secret key (which uses the same key to encrypt and decrypt and is the fastest method; however, in the initial **Electronic Payment Systems** transmission to the recipient, the secret key is not secure) and the public key (which uses both a private and a public key).

In the latter, each receiver owns a secret private key and a publishable public key. In public key cryptography, the sender finds the receiver’s public key and uses it to encrypt the message, whereas the receiver uses the private key to **decrypt** the message. The important point here is that because key holders do not need to send their private keys to anyone else to have their messages decrypted, the private keys are not in circulation and therefore are not vulnerable to crack attacks. In short, the security of a cryptographic system rests with the secrecy of the key rather than with the secrecy of the algorithm.

Theoretically, any cryptographic technique using a key can be broken, just as doors on a house can be broken into if someone finds a key compatible with the door’s key core. In virtual space, a cracker can break the cryptographic method by trying all possible keys in sequence (known as “brute-force”). As an aside, using brute-force to attempt all keys requires computing resources that grow exponentially with the key’s length.

Yes/No question

- 1) Electronic payment system is divided into four categories.
- 2) One of requirements of electronic financial transaction is communications could be adapted in transmission.
- 3) Information could be protected by encryption.
- 4) Binary number of encryption algorithm often has length range from 30 to 125 bits.
- 5) The fastest method in electronic payment system is using secret key.

Lesson 12

Computer Addicts

Computer Addicts (general term): Defined by some mental health experts as individuals spending, on average, 38 hours a week online, compared to the non-addicted types who spend, on average, five hours a week online. Computer addicts allegedly also neglect loved ones and chores and have odd sleep patterns reflected in daytime sleeping patterns to compensate for heavy nighttime online usage.

Task:

Listen and decide which age group suffer from computer addiction most?

Age group	20%	30%	50%	80%
7-12				
13-20				
21-27				
28-37				

Lesson 13

Yahoo executive challenges NSA over encryption demands



Yahoo's security chief Alex Stamos clashed with Adm Mike Rogers, the director of the US National Security Agency

A Yahoo executive has publicly challenged the National Security Agency (NSA) over encryption "backdoors".

Alex Stamos pressed NSA director Adm Mike Rogers on whether the access to encrypted data requested by the US authorities should also be granted to the Russian and Chinese governments.

Adm Rogers insisted an agreement could be reached "within a framework".

The tense exchange came after many top tech figures refused to attend a White House cybersecurity summit this month.

"If we're going to build defects, backdoors or golden master keys for the US government, do you believe we should do so... for the Chinese government, the Russian government, the Saudi Arabian government, the Israeli government, the French government?" asked Mr Stamos, Yahoo's chief information security officer.

After initially dodging the question, Adm Rogers - who took over as director of the NSA last year - responded: "I think that we're lying that this isn't technically feasible.

"Now, it needs to be done within a framework. I'm the first to acknowledge that."

Lesson 14

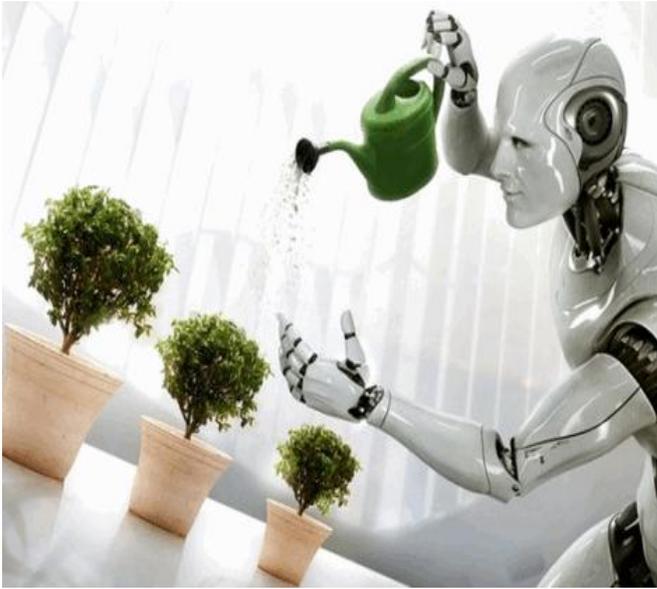
Virus Infection indicators:

- Your computer always stops responding when you try to use Microsoft Office products.
-
- You cannot start Windows Task Manager.
- Antivirus software indicates a virus is present.
-
- You received an e-mail message that has a strange attachment. When you open the attachment, dialog boxes appear or a sudden degradation in system performance occurs.
-
- There is a double extension on an attachment that you recently opened, such as .jpg.vbs or .gif.exe.
-
- An antivirus program is disabled for no reason and it cannot be restarted.
-
- An antivirus program cannot be installed on the computer or it will not run.
- Strange dialog boxes or message boxes appear on screen.

Write an instruction to install an antivirus software.

Write an instruction to maintain computer.

Lesson 15 Repercussions



Task 1. Think about the 2 given pictures, what is described here?

Answer the following questions:

- What purposes of the creation of robots do you know?
- In what spheres can they be helpful? How?
- What do people want from them?
- How do they work?
- What programming languages do they need?
- What other thing do they demand to work properly?
- Do you think they may have bad consequences in the future? If so what?

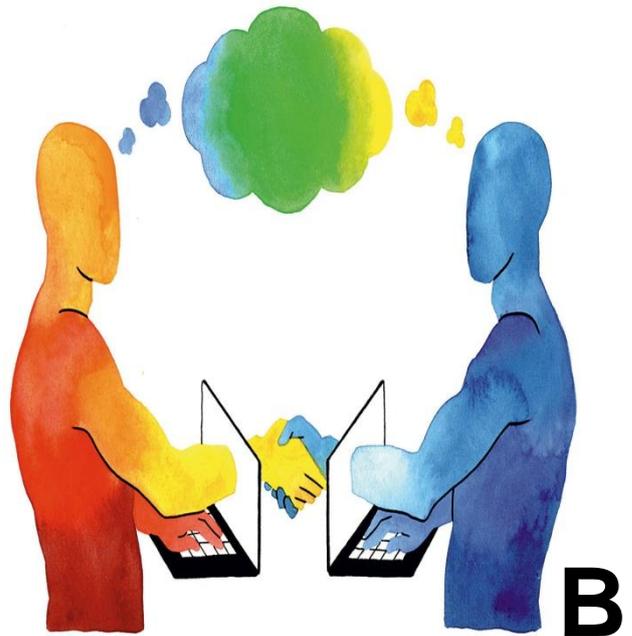


Task: Listen and decide which speaker agrees with these statements?

Statements	Ann	Bob	John
It is hard to believe that people will be slave of robots.			
Today we are too dependent on Technology.			
As technology has lack of sense it does not know to forgive criminals.			
Scientists will never be able to teach robots cognitive knowledge.			
One day in the future robots will control us.			

Lesson 16

Task: Think about and discuss the repercussions of advances of these Technologies.



Lesson 17

Rules of making presentation

- ✓ Choose a topic (from the learned topics/previous units)
- ✓ Choose a title
- ✓ Search for the material
- ✓ Write one problematic question
- ✓ Prepare visual aids to capture attention
- ✓ Make introduction, body, conclusion of the presentation
- ✓ In the **Introduction**, introduce:
 - yourself (name, surname)
 - university, faculty, group
 - topic, title
 - how much time of the audience you take
- ✓ In the **Body**:
 - Information
 - Problematic question
 - Fact
 - Comparison/ contrast
 - Diagram, (pie chart, line graph, bar chart, table etc,) and description of it.
 - Chronological data
 - Cause & Effect
- ✓ In the **Conclusion**:
 - Summarize
 - Give your own solution to the problem or to the problematic question
 - Say thanks
 - Open question/answer period
- ✓ While Presentation:
 - Keep eye contact and communication/interaction with the audience to make sure that your listeners are listening to you and understand you.
 - Try to capture attention using some of these: visual aids (pictures, diagrams), quotations, voice, tone, emphasize, questions, and etc.
 - Pay attention to your position.
 - Remember! Slides are not for you (presenter) to read from but for the audience!
 - Show your interest to the problem/title, otherwise it will be not easy to get audience interested.

*Difference between **topic** and **title** is topic is broader while title is narrow one in the topic.
E.g.
Topic: Input Devices
Title: Replacing keypads to touchscreens.*

***Problematic question** should cover title and problem in itself. It should be touchy enough to make the audience think about. Try not to write general questions.*

Types of the Presentations

Informative

Persuasive

Lesson 18

Informative and persuasive speeches differ in what they want the audience to walk away with: facts or an opinion

- Informative speeches (or informational speeches) seek to provide facts, statistics, or general evidence. They are primarily concerned with the transmission of knowledge to the audience.
- Informative speeches are exemplified by academic lectures
- Persuasive speeches are designed to convince the audience that a certain viewpoint is correct. In doing so, the speaker may utilize information.
- persuasive speeches are exemplified by academic sales pitches

Informative (or informational) and persuasive speaking are related, but distinct, types of speeches. The difference between the two lies in the speaker's end goal and what the speaker wants the audience to leave with.

Informative speeches are probably the most prevalent variety of speech. The goal is always to supply information and facts to the audience. This information can come in the form of statistics, facts, or other forms of evidence. Informational speeches do not tell people what to do with the information; their goal is for the audience to have and understand the information. Academic lectures are often informational speeches, because the professor is attempting to present facts so the students can understand them.

Task: Give examples for Informative and Persuasive speeches.

Informative	Persuasive

Lesson 20

Portfolio

At the end of the second semester of master's degree students are required to pass their portfolio in English language. Here are the list of topics portfolio should include.

- Entry1 Presentation on Input devices
- Entry2 Text of the Informative speech
- Entry3 Text of the persuasive speech
- Entry4 Bachelor's degree diploma presentation
- Entry5 Essay on repercussions
- Entry6 Article discussion (article should be on innovative methods)
- Entry7 Your own Article in English
- Entry8 Thesis Presentation (Annotation) of Master's degree dissertation
- Entry9 Feedback for the thesis presentation of the peers (another student)

Answers:

Lesson 1

1. Circulate --- To move throughout an area or group; to move along a somewhat circular route.
2. Implement ---- To make use of; to carry out.
3. in-house ----- Working within a company or organization
4. corrode ----- To be slowly weakened by chemical reactions.
5. innovative ----- Ahead of the times; novel.
6. Freelance ---- Working independently for different companies rather than being employed by one particular company
7. derive----- To come from, usually through a long, slow process.
8. installation ---- Setting something into position for use
9. vigilance ---- Careful attention that you give to what is happening, so that you will notice any danger or illegal activity in the time it occurs
10. detection ----- Discovering something that cannot easily be found.
11. Maintenance ---- The act of keeping something in good condition
12. self-appointed ----- Giving yourself a responsibility, job, position etc. without the agreement of other people, especially those you claim to represent - used to show disapproval
13. expeditiously---- Quickly and efficiently.
14. simulation ---- An imitation or representation.
15. computer-buff ----- Informal, a person who is master on computer and its programs

Task

noun	verb	adjective	adverb
circulation	circulate	circular	
corrosion	corrode	Corrosive	Corrosively
Derivation	derive	Derivative	Derivatively
detection	Detect	Detecting	
Expedition	expedite	Expeditious	expeditiously
implementation	implement	Implemented	
innovation	innovate	innovative	Innovatively
installation	install	Installable	
maintenance	maintain	Maintainable	
simulation	Simulate	Simulative	
vigilance	vigil	Vigil	

Task4. Fill in the blanks with the appropriate form of the words.

1. Sitting in salt water, the old coins corrode and became very easy to break.
2. Installation of the new software takes only four minutes.
3. Blood Circulation is more quickly during physical exercises.
4. The Cyrillic alphabet was derived from the Greek alphabet.

5. Using carrier pigeons, the military commanders exchanged messages expeditiously.
6. With new medical technology, the detection of cancer is much easier nowadays.
7. To test car safety, automobile makers study crash simulation.
8. The only problem with living in such a big house is that it requires a lot of maintenance.
9. Vigilance is the requirement of the time.

Lesson2

Questions 1-8.

1. Input devices are these devices which allow us to enter information
2. First input device was similar to switch.
3. The most popular input devices are mouse and keyboard
4. On a laptop computer you have normally have a touchpad instead of a mouse.
5. Keypads on mobile phones are already replaced to touchscreens
6. Switch button is an input device which tells the computer to power on or power off.
7. Second generation of input device to improve security on biometric authentication is fingerprint reader.
8. Barcode reader is a special scanner to enter stock and sell items at the cashier.

Questions 9-18.

If you consider the statement to be true, write TRUE.

If you consider the statement to be not true, write FALSE.

Mark according to the reading passage

	Statement	T.F.
1	Input devices are devices which allow computer to give us information	F
2	Input devices were created long before than computers themselves.	F
3	In larger computers it took even days to set up a computer to perform a single calculation.	T
4	Power button on the computer is a switch which is also an output device.	F
5	As computers evolved throughout the late 21 st century, computers became more and more interactive.	F
6	All the devices created since computers exist last till now.	F
7	Keypads are already replacing touch screens on mobile phones.	F
8	Everybody prefers the same touchpads as an input device for doing same task.	F
9	Many graphic artists do not prefer a mouse to stylus and graphics tablet.	F
10	For handicapped users a wide array of input devices have been invented to replace the mouse	T

Possible answer:

Zokhidova G.E., Methodical manual for the M degree students of Computer and Software Engineering faculties. 2014.

1. Two kinds of.
2. Proprietary software and open source software
3. Microsoft Windows or Adobe Photoshop
4. Linux, and thousands of applications such as Mozilla Firefox and Open Office
5. Bug

Tapescripts

Tapescripts -3

I think everyone studying Information Technology should learn at least one programming language and write at least one program. Why? Programming forces you to think like a computer. This can be very rewarding when dealing with a wide range of IT-related issues from tech support to setting up PPC (pay-per-click) advertising campaigns for a client's web site. Also, as an IT professional, you will be dealing with programmers on a daily basis. Having some understanding of the work they do will help you get along with them better.

Software programs are normally written and compiled for certain hardware platforms. It is very important that the software is compatible with all the components of the computer. For instance, you cannot run software written for a Windows computer on a Macintosh computer or a Linux computer. Actually, you can, but you need to have special emulation software or a virtual machine installed. Even with this special software installed, it is still normally best to run a program on the kind of computer for which it was intended.

Tapescripts 4

There are two basic kinds of software you need to learn about as an IT professional. The first is closed source or proprietary software, which you are not free to modify and improve. An example of this kind of software is Microsoft Windows or Adobe Photoshop. This software model is so popular that some people believe it's the only model there is. But there's a whole other world of software out there.

The other kind of software is called open source software, which is normally free to use and modify (with some restrictions of course). Examples of this type of software include most popular programming languages, operating systems such as Linux, and thousands of applications such as Mozilla Firefox and Open Office.

But what is the real difference between open source and closed source software? Is open source software just about saving money? Let's investigate. Let's say for instance you find a bug in the latest version of Mozilla Firefox. The bug is causing a major project to fail and you need to fix it right away. This is not very likely to happen, I realize, but it's just an example.

Task:

Replicate - make an exact copy of; reproduce

Disguise - make (something) unrecognizable by altering its appearance

Legitimate - lawfully

adjust -- alter or move (smth) slightly in order to achieve the desired fit, appearance

modified -changed from its original form during development or evolution

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“Hardware and Software”
Methodical manual for the Masters' degree
students of Computer Engineering and
Software Engineering faculties
(5A330501, 5A330601)

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