Е.А. Алешугина, Д.А. Лошкарева

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Учебное пособие

Нижний Новгород
2014

Министерство образования и науки Российской Федерации
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«Нижегородский государственный архитектурно-строительный университет»

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2014

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Пособие предназначено для студентов – будущих специалистов в области информационных технологий и имеет целью овладение профессионально ориентированным английским языком.

Пособие предназначено для студентов направлений подготовки «Прикладная информатика» и «Информационные системы и технологии» всех форм обучения.

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ВВЕДЕНИЕ

Данное учебное пособие предназначено для обеспечения дисциплины «Иностранный язык» для студентов бакалавриата по направлениям подготовки 230700 «Прикладная информатика» и 230400 «Информационные системы и технологии».

В основе отбора содержания данного учебного пособия лежат научные разработки авторов - результаты двух диссертационных исследований.

Учебное пособие «Профессионально ориентированный английский язык для специалистов в области информационных технологий» состоит из разделов, освещающих различные аспекты сферы информационных технологий и коммуникаций (компьютеры и интернет), а также тренировочных лексических, лексико-грамматических упражнений, коммуникативных и творческих заданий. Все разделы были отобраны с помощью метода построения структурно-логических схем, метода матриц логических связей и метода экспертной оценки практической значимости отобранного содержания обучения.

В пособии представлены аутентичные тексты профессиональной направленности, а также разнообразные по форме и содержанию упражнения, основанные на активных технологиях обучения и направленных на активизацию изученного материала. Упражнения творческого характера имеют цель сформировать положительную мотивацию к изучению данной темы и предмета в целом, а также обеспечить формирование навыков устной и письменной коммуникации по специальности на иностранном языке. В процессе их выполнения студенты вовлечены в квазипрофессиональную деятельность, которая несет в себе черты как учебной, так и будущей профессиональной деятельности с использованием иностранного языка, формируя целостный образ будущей профессиональной ситуации. Кроме того, разработанные творческие задания направлены на стимулирование совместной работы, где каждый студент приобретает навыки социального взаимодействия, коллективную направленность, ценностные ориентации и установки, присущие специалисту.

Представленный в конце пособия словарь отобран с помощью частотного анализа и содержит минимально достаточный набор профессионально значимых лексических единиц, способствующий пониманию профессионально ориентированного текста студентами с разным уровнем языковой подготовки и обогащению их профессионального тезауруса.

Пособие рекомендуется к использованию как для аудиторной, так и для самостоятельной работы студентов всех форм обучения.

Авторы выражают благодарность всему коллективу кафедры иностранных языков 1 ННГАСУ, рецензентам, преподавателям профильных кафедр ННГАСУ и студентам за помощь и ценные замечания в процессе подготовке данного пособия.

UNIT I

THE PROFESSION OF A PROGRAMMER

I. Lead in

Group work. Reflect on the following quotation. Get ready to discuss the prediction together:

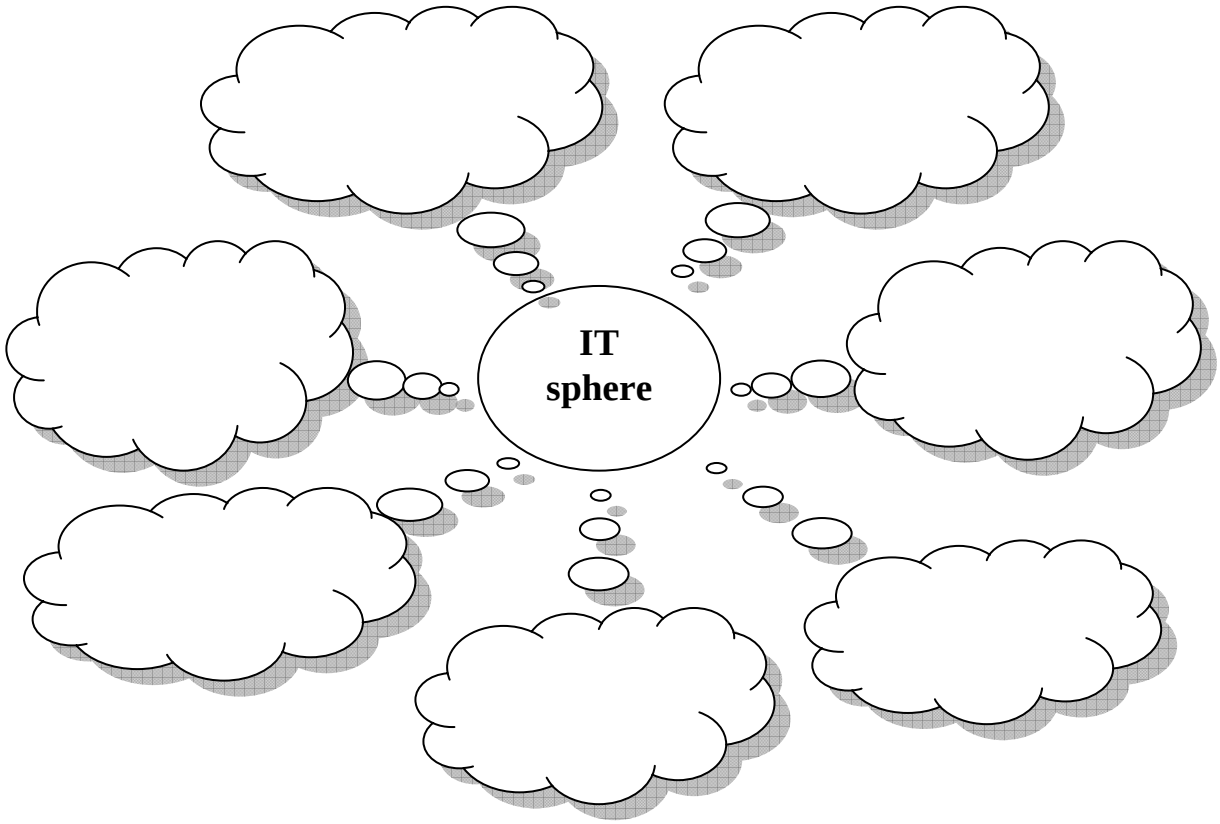
"*There is no reason anyone is going to want a computer in their home*" (ken Olson, President of Digital Equipment Corporation, 1977)

Share your point of view on the following questions with the rest of the class

1. What kind of people should make a career in IT?
2. What traits of character and qualities should they have?
3. What skills are demanded to be successful in such a profession?
4. Why is the profession demanded nowadays and in what spheres?
5. Why have you chosen the profession of a programmer?

II. Reading

1. Read the text and fill in the cluster while reading it. The cluster should contain the key words you can find in the text. Get ready to justify your choice afterwards.



THE PROFESSION OF A PROGRAMMER

A programmer, or a computer programmer, is a person who writes programs to work on a computer. Computer programs are detailed instructions that computers must follow to do their functions. A programmer can be a specialist in one area of computer programming or a generalist who writes codes for many kinds of programs. Programmers also make, design, and test logical structures for solving problems by a computer. Many technical innovations in programming – modern computing technologies and new languages and programming tools - have changed the role of a programmer and enriched much of the programming work today.

British mathematician Ada Lovelace (who was the famous British poet Lord Byron's daughter) was the first to write a program for a computing machine. The machine was Charles Babbage's Analytical Engine, and Ada wrote and published an algorithm to make the calculations of Bernoulli numbers in October 1842. Unfortunately, her work never ran because Babbage's machine was never finished in her time.

The first person to successfully run a program on a computer was a computer scientist Konrad Zuse, who succeeded in it in 1941.

The American ENIAC (*Electronic Numerical Integrator and Computer)* programming team, consisting of Kay McNulty, Betty Jennings, Betty Snyder, Marlyn Wescoff, Fran Bilas and Ruth Lichterman were the first regularly working programmers.

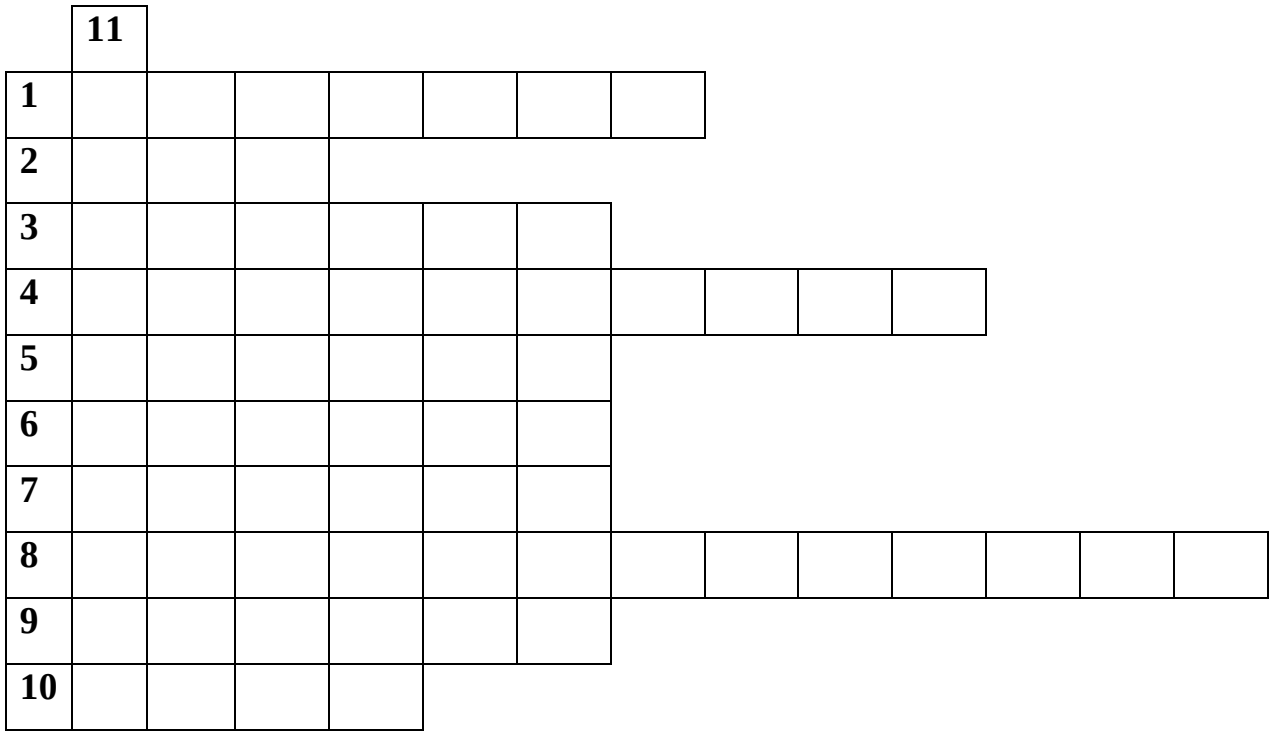
International Programmers' Day is celebrated annually on the 7th of January.

In Russia starting from the year of 2009 a professional annual holiday known as Programmers' Day is celebrated on the 13th of September (the 12th of September in leap years).

2. Answer the following guestions using the information from the text and your own experience:

1. Who is a programmer?
2. Who was the first programmer in the history of computing? Prove your opinion.
3. When is International Programmers' Day celebrated?
4. Why is Programmers' Day in Russia celebrated on the other date?

3. Guess the crossword and write a short composition about your future profession:



1. To make a printed book with your works.
2. To work, to organize.
3. Thing.
4. Universal worker.
5. Final point of any work.
6. Something that happens every year.
7. New, up-to-date.
8. Person who does math as work.
9. To make somebody wealthier.
10. To get information from a book.
11. Your future profession.

III. Vocabulary focus:

1. Guess the meaning of the following international words:

- Program, programmer, detail, instruction, function, specialist, code, design, structure, problem, innovation, technologiy, mathematician, poet, machine, algorithm;
- Logical, technical, international;
- To design, to publish, to start.

2. Give synonyms to the following words:

modern, to design, to test, to finish, success

3. Give antonyms to the following words:

unfortunately, to change, to enrich, international, to start

4. Explain the meaning of the following words:

generalist, annual, leap year, tool, innovation, team, to succeed, instructions.

Make up your own sentences with these words to speak about the profession of a programmer.

5. Translate the following sentences:

1. *Работа программиста – сложная, но интересная, она подходит для нас.*
2. *Мы выбрали её из многих других профессий и надеемся стать хорошими специалистами.*
3. *Хотя некоторые люди думают, что в сфере компьютеров уже больше нечего открывать, мы знаем, что наши открытия ещё впереди.*
4. *Записи и чертежи Чарльза Баббеджа вдохновили учёных из Британского Музея Науки на создание машины, придуманной им.*
5. *Мировое научное сообщество признаёт достижения Ады Лавлейс и считает её первым программистом.*
6. *Уже в 17 веке были первые попытки создания электронных машин; это, например, счётные машины Лейбница и Паскаля.*
7. *Считается, что коллегой Конрада Цусе, помогавшим ему с созданием Зед -1был Гельмут Шрейер.*

IV. Work with the Internet

Surf the net and find information about the advantages of the profession of a programmer and the peculiarities of the programmers' training courses at different universities.

Group work. Role play the following situation:

You are invited to the Opening Doors Day arranged by your faculty for future applicants. Your task is to prepare a presentation for school leavers to persuade them to enter this university.

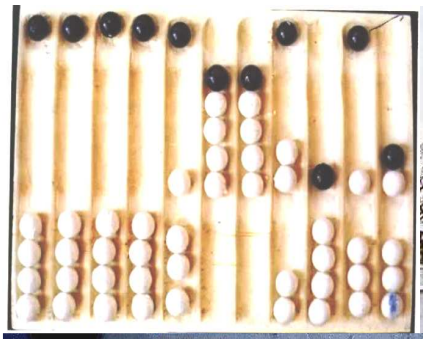
UNIT II

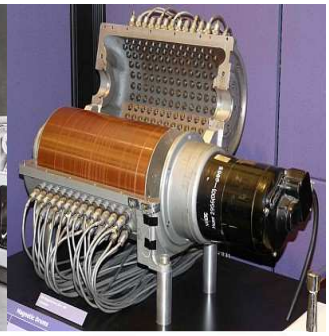
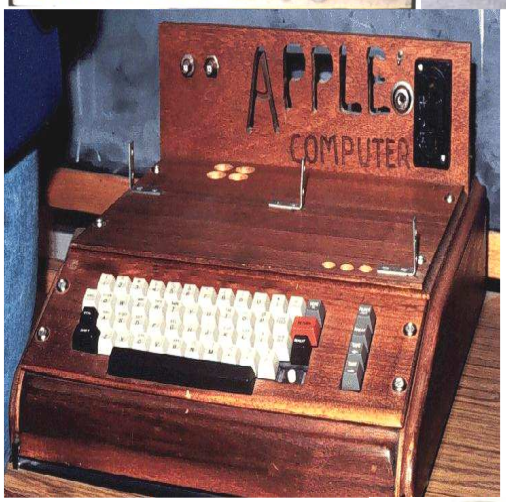
HISTORY OF COMPUTERS

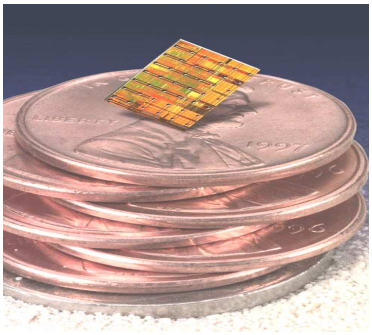
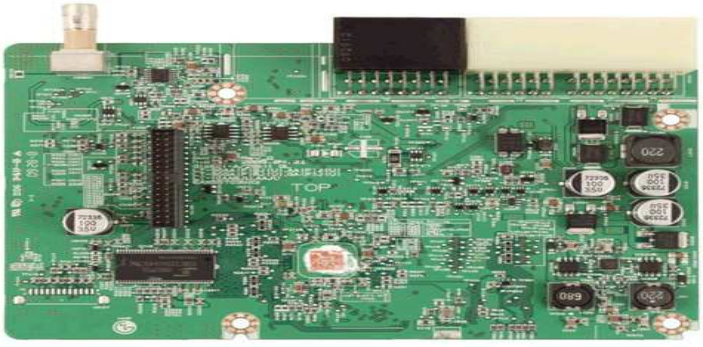
I. Lead in

1. What is the background of the first development of the computers?
   What are the first computer applications?
   Make a list and discuss them:

2. Look at these pictures.
   What is depicted here?
   How are these things connected with the computer?
   What are their functions?



II. Reading

1. While reading mark the information:
   - I knew this fact (+)
   - I was not right about this (–)
   - This information was unknown for me (!)

FROM THE HISTORY OF COMPUTERS.

One of the earliest known computational devices, the abacus was developed. This is a mechanical device composed of a slab (плита) (abax in Greek) with pebbles (камушки из гальки) (calculi in Greek) strung on wires. The position of the pebbles on each wire determines the value of digit. The abacus can be used to add, subtract, multiply and divide.

In 1812 Charles Babbage, a Professor of Mathematics at Cambridge University, invented the first calculating machine. He decided to build a device which he called an analytical engine. He designed the first programmable computer. It was able to perform only one command.

In 1941 in the United States, International Business Machines (IBM) built a machine called Mark 1 to perform calculations for the Manhattan Project, which led towards the development of the atomic bomb. It was a relay computer (релейный). Relays are electromechanical devices which operate by means of electromagnets (электромагниты) and springs (пружины). They were still slow and very noisy.

First generation computers were extremely large and had poor reliability. They used vacuum tubes to control internal operations and required a lot of floor space. These computers could perform thousands of calculations per second. They were much faster than earlier mechanical machines. But they were very slow compared to today's computers. Punched cards were used to enter data into the computer. Card reader was used to translate them into machine language for the computer. The machine language information was often stored on magnetic drums. A splendid example of these first generation computers is ENIAC (Electronic Numerical Integrator and Calculator). It was over 90 tons. Its 18 thousand vacuum tubes demanded 140 Kilowatts of electrical power. It is enough to supply a block of buildings of respectable size. In 1948 the transistor came into existence.

The second generation of computers was developed. They were smaller and faster. The reason for this extra speed was the use of transistors instead of vacuum tube. The transistor switches flows of electricity as fast as vacuum tubes used in computers.

The third generation computers could do a million calculations a second. The integrated circuit (IC) constituted another major step in the growth of computer technology. In the vacuum tubes and relay stages, additional discrete components such as resistors, inductors and capacitors were required in order to make the whole system work. These components were generally each about the same size as packaged transistors. Integrated circuit technology permitted the

elimination of some of these components and "integration" of most of the others on the same chip of semiconductor that contains the transistor. Thus the basic logic element is the switch or "flip-flop" ("щелчок-шлепок") could be packaged into a single small unit. The chip was a crucial development (решающим шагом) in the accelerating pace of computer technology.

The fourth-generation computers are based on ICs greatly reduced in size due to microminiaturization which means that the circuits are much smaller than before. As many as 1000 tiny circuits fit on to a single chip. The most recent mainframe computers based on very large scale integration are becoming available in the mid- 1980' s. A major advance in the development of computer technology was the creation of microprocessor and microcomputers. The tiny computing devices are able to control complex operations from the control and monitoring operation to playing chess.

The fifth-generation computers will be based on VLSI (Very Large Scale Integration) and SLSI (Super) technologies, optical fibers, videodisks and artificial intelligence (искусственный интеллект) techniques will be incorporated into them.

2. Compare the information you know and new facts. Discuss it in pairs.

III. Vocabulary focus:

1. Mind the pronunciation of the following international words. Compare them with Russian words with the same roots:

Mechanical, command, design, atomic bomb, electromagnets, major, data, packaged transistor, accelerating, circuit, relay, technology, monitoring, optical filter, vacuum tube, techniques , microminiaturization, microprocessor, artificial intelligence.

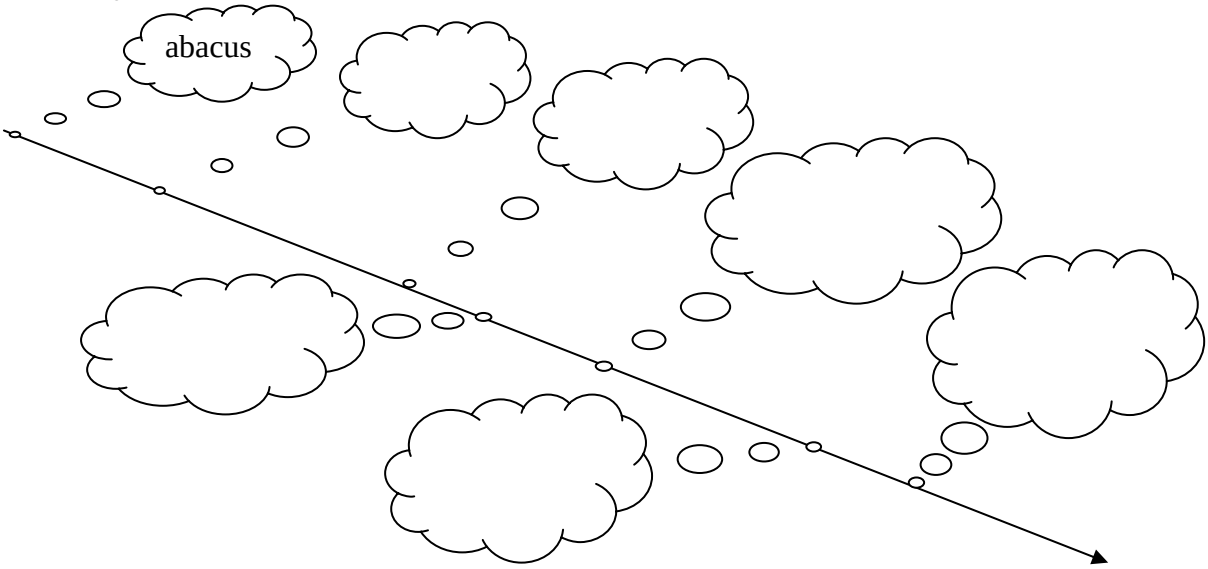
2. Match the words from two columns to create a phrase and use the phrase in the sentence of your own to speak about history of the computers:

computational	space
poor	data
perform	value
enter	flows of electricity
crucial	elimination of components
major	reliability
require	development
permit	command
switch	device
determine	advance

3. Complete the sentence using one word:
operate, eliminate, store, determine, enter, subtract, require

1. The value of digit in abacus … the position of the pebbles on the wire.
2. Relays … by means of electromagnets.
3. Punched cards were used … data into the computer.
4. Machine language information … on magnetic drums.
5. With the help of abacus people can …, multiply and divide.
6. Integrated circuit technology … some discrete components and integrated the others on a single chip.
7. In the vacuum tubes resistors, inductors and capacitors … in order to make the whole system work.

Read the text once again carefully and complete this time line of the computer history.



What is each stage characterized by?
What were the achievements of each generation?
What were their advantages and disadvantages?

IV. Work with the Internet

Surf the net and be ready to continue the traces of computer history.
Find some additional information and facts about the computer development.
You may use these sites:
http://www.pbs.org/nerds/timeline/
http://www.computerhistory.org/
http://www.computerhope.com/history/

UNIT III

COMPUTER SECURITY

I. Lead in

What can disturb your work on computer?
In groups make a list of problems.

Latest Press Releases

- Former Antelope Man Sentenced to 20 Months in Prison for *Fraudulently* Obtaining Microsoft Software: Defendant Cracked Code Needed to Activate Software Causing More than $500,000 in Losses (January 25, 2014)
- Anderson Man *Charged with* Criminal Copyright *Infringement* (December 28, 2013)
- Defendant *Sentenced* in Online *Piracy Crackdown* (December 19, 2013)
- Two Michigan Residents *Plead Guilty* to Criminal *Copyright Infringement* (December 15, 2013)
- Former Chinese National *Charged with Stealing* Military Application Trade Secrets from Silicon Valley Firm to Benefit Governments of Thailand, Malaysia, and China: Third Foreign Economic *Espionage Indictment* in the United States Since the Enactment of Economic Espionage Act of 1996; Source Code Used for Military Combat Simulation and *Banned* for Export Without License (December 14, 2012)
- Utah Man Sentenced to 24 Months in Prison for Bringing Down Wireless Internet Services (December 14, 2012)
- Vermilion, Ohio Man Charged with Wire *Fraud* (December 14, 2013)
- Hollywood *Movie Pirate* Sentenced to 7 Years in Prison for *Copyright Infringement* and *Escape* (December 1, 2012)
- Former Vancouver Area Man Sentenced to Five Years in Prison for Conspiracy Involving Counterfeit Software and *Money Laundering*: Web of Companies Sold up to $20 million of Microsoft Software with *Altered Licenses* (November 29, 2013)

Look at the latest press releases. What type of site were they taken from?
What types of crimes are mentioned? Give definition of these crimes.

• Fraud	
• Copyright infringement	
• Piracy crackdown	
• Stealing	
• Espionage	
• Money laundering	
• Movie piracy	

II. Reading

Here you can find extracts from different Internet articles:
Look through these announcements and add other types of crimes to the table given above.

Protect yourself against identity theft

Jan 20, 2013

Identity theft is when someone uses, without permission, your personal information in order to commit any frauds or crimes. Identity theft is a *felony* that is becoming more and more common. That is because some of us are not very careful with personal...

Credit Card Security

Jan 10, 2012

This is the age of plastic money. It's not uncommon for the typical consumer in the western world to go weeks at a time without ever handling a coin or bill. Everything we need is available to us with the simple "swik-swik' sound of a credit card sliding...

FTC vs spammers

by : JIM PUZZANGHERA Dec 26, 2013

It's the start of an Interpol for the Internet. The Federal Trade Commission soon will go global in its hunt for spammers, phishers and other online scammers. President Bush signed a bill Friday that gives the commission broader authority to pursue...

Taking on windows security

by : AHMED ASHIFUL HAQUE Dec 24, 2013

Ensuring security on your computer that runs Windows is a delicate and complicated business. The ever-menacing threats of viruses, spyware, phishing is always on the rise. Your valuable data is always at risk. So, how do you keep yourself safe? Here's a...

Thieves in the Internet

Dec 13, 2013

MARK COLVIN: Millions worldwide have *embraced* internet banking, but so have virtual bank robbers. Financial institutions are dealing with more cyber-attacks than ever before. The scams are known as phishing, or sometimes spear-fishing, and they're...

Metasploit publishes hacker tools, Q&A

by : LARRY GREENEMEIER Oct 24, 2013

The Metasploit Project takes *penetration* testing to a whole new level, not only finding vulnerabilities in applications, but also providing exploit code that so-called white hat and black hat hackers alike can use to test the real-world implications of...

III. Vocabulary focus

1. Put the correct preposition:

- The fraud was sentenced … one year in prison.
- The man was charged … movie piracy.
- Two Chicago Residents Plead Guilty … Criminal Copyright Infringement.
- Taking into consideration threats …viruses the company install anti-virus program.

2. Find synonyms for the following words. Use them in the sentence of your own:

Accuse, convict, contravene, crime, guarantee, avail oneself, get in

3. Look through your list of computer offences and decide which are major and which are minor. Think of appropriate punishment for each offence.

Punishments:

- to be sentenced to 1/5/10 years imprisonment
- to be sent to prison
- to be fined a large/small amount of money
- to be given a suspended sentence
- to do community service
- to be given a warning
- to be on probation
- to provide with psychiatric treatment

IV. Speaking

What can we do to stop computer crimes?

What other threats can a computer user encounter?

Group work:

Divide in groups and find possible ways of solution to the problems of computer security.

Mosaic of problems

V. Work with the Internet

Imagine that you should take part in National Computer Security Project. You are an expert in computer security.

Write an article with your solutions to this problem. Make a list of suggestions and explain their advantages.

You can use the following Internet sites:

http://www.crime-research.org

http://www.infosec.gov.hk/english/crime/preventive.html

http://cybercrimesecurityforum.org/

UNIT IV
INTERNET APPLICATIONS

I. Lead in

1. What do people do with the help of the Internet?

Make a list of the typical Internet applications.

2. Read the website descriptions.

To which website does each sentence 1-7 refer?

a) **paralegal.com** Fed up with paying exorbitant legal fees? Get leading-edge legal services at a fraction of the cost of going to a law firm. E-mail our legal team for low-cost advice on all aspects of company and tax law. *Download* specialist up-to-the-minute documents for a small *charge*. Conduct your own court cases with our help and save thousands of euros! No win, no fee!

b) **bespontaneous.com** Be spontaneous! Do something on the spur of the moment. Book otherwise impossible-to-get tickets to theatre and sports events. Ready to fly tomorrow? Take a break to one of our popular destinations: beach or city. Worry-free booking by credit card on our secure *server*. Next-day courier delivery of tickets to your door.

c) **worldweather.com** Want to see what the weather's like anywhere in the world? Come to worldweather.com! Consult free forecasts for 100 world cities. Download stunning satellite pictures of the world's increasingly unpredictable weather for free. Deluxe, framed versions of these pictures make beautiful gifts. Order on-line. Delivery within 48 hours.

d) **goinggoinggone.com** Consumer electronics products auctioned daily: computers, TVs, washing machines, you name it. It's so simple: put in your bid and we'll notify you by e-mail of the competing *bids*. You can raise your bid as many times as you like over a three-day period. If your bid is the highest at the end of three days, pay by credit card and goods are delivered to you within 24 hours.

1. You consult this site if you are not sure what clothes to take with you on a trip.
2. This site tries to reassure users who may be worried about giving their credit card details on-line.
3. This site mentions a delivery method that does not use the ordinary post office service.
4. This site does not mention physical delivery of goods or documents.
5. On this site, you can order a picture to put on your wall.
6. On this site, you can offer a price for something, but you won't necessarily get it.
7. On this site, there is a service that you may have to pay for or that may be free, depending on the results.

II. Vocabulary focus

We often use the terms below to speak about different Internet applications.

1. Put the appropriate terms in the table.

English equivalent	***Russian equivalent***
	сеть
	поисковая система
browse	
	поиск
chat	
	доступ
link	
hit	
	загружать

2. Match the terms to their definitions

browser	A utility that will search the Internet, an Intranet, a site, or a database for terms that you select.
chat	An active connection to another web page, location in a web page, file, or other Internet resource.
download	A computer in a network that provides access to other computers in the network to programs, web pages, data, or other files and services, such as printer access or communications access.
hit	A form of real-time electronic communications where participants type what they want to say, and it is repeated on the screens of all other participants
link	To transfer a file from another system to your own computer system via a modem over telephone or cable lines or a telnet connection using a transfer protocol
search engine	Software that will load and display a web page. It interprets the HTML or XML code from the web page files, executes embedded scripts and programs, displays graphics, plays music and video, and provides links to related pages
server	Every listing a search engine returns from a search. This term is also used to refer to calls on a web server, and it is much misunderstood.

III. Reading

You are going to read an article about the Internet. Compare it with your own ideas.

The Internet

The Internet is a magnificent global network with millions and millions of computers and people connected to one another where each day people worldwide exchange an immeasurable amount of information, electronic mail, news, resources and, more important, ideas.

It has grown at a surprising rate. Almost everyone has heard about it and an increasing number of people use it regularly. The current estimate is that over 70 million people are connected, in some way, to the Internet – whether they know it or not.

With a few touches at a keyboard a person can get access to materials in almost everywhere. One can have access to full-text newspapers, magazines, journals, reference works, and even books. The Web is one of the best resources for up-to-date information. It is a hypertext-based system by which you can navigate through the Internet. Hypertext is the text that contains links to other documents. A special program known as «browser» can help you find news, pictures, virtual museums, electronic magazines, etc. and print Web pages. You can also click on keywords or buttons that take you to other pages or other Web sites. This is possible because browsers understand hypertext markup language or code, a set commands to indicate how a Web page is formatted and displayed.

Internet Video conferencing programmes enable users to talk to and see each other, exchange textual and graphical information, and collaborate.

Internet TV sets allow you to surf the Web and have e-mail while you are watching TV, or vice versa. Imagine watching a film on TV and simultaneously accessing a Web site where you get information on the actors of the film. The next generation of Internet-enabled televisions will incorporate a smart-card for home shopping, banking and other interactive services. Internet-enabled TV means a TV set used as an Internet device.

The Internet is a good example of a wide area network (WAN). For long-distance or worldwide communications computers are usually connected into a wide area network to form a single integrated network. Networks can be linked together by telephone lines or fibre-optic cables. Modern telecommunication systems use fibre-optic cables because they offer considerable advantages. The cables require little physical space, they are safe as they don't carry electricity, and they avoid electromagnetic interference.

Networks on different continents can also be connected via satellites. Computers are connected by means of a modem to ordinary telephone lines or fibre-optic cables, which are linked to a dish aerial. Communication satellites receive and send signals on a transcontinental scale.

Continue the following sentences to speak about the Internet functions and applications:

1. Internet is a …….
2. The function of the Internet is ……..
3. The Internet offers the following services …….
4. An Internet-enabled TV set is ……..
5. WAN is …….
6. Networks are connected with each other ……

IV. Vocabulary focus

1. Match the words to make up sentences about internet application:

1. dish .....access
2. to be connected ..... information
3. electromagnetic ..... through
4. worldwide .....markup language
5. wide area .....information
6. to get … .....via
7. hypertext .....communications
8. to navigate .....interference
9. up-to-date .....network
10. to get ..... aerial
11. smart …….card

2. Complete these sentences with some word partnerships from the list to speak about Internet performance:

1. Computers are connected by means of a modem to ordinary telephone lines or fiber-optic cables, which are linked to a … .
2. The next generation of Internet-enabled televisions will incorporate a … for home shopping, banking and other interactive services.
3. Internet Video conferencing programs enable users to talk to see each other, …, and collaborate.
4. Networks on different continents can also … satellites.
5. For long-distance or, … computers are usually connected into a wide area network to form a … .
6. The Web is one of the best resources for … .
7. With a few touches at a keyboard a person can … to materials in almost everywhere.

V. Project work

Sum up the most widely spread Internet applications.
Make several groups and prepare a report about each Internet application with your own examples.

- *Getting news from the internet;*
- *Internet shops;*
- *Internet travel agencies*
- *Communication through the Internet*
- *Earning money through the Internet*

Pre-task: While listening make a list of advantages and disadvantages of using Internet for these applications in comparison with the traditional ways of getting news, buying something in the shops, spending holidays, and communicating with each other.

Group 1: Internet news ADVANTAGES DISADVANTAGES

- What advantages has the group mentioned?
- Can you choose any news you like?
- Do you depend on time searching for news?
- What are the disadvantages?
- Is the Internet information always true?
- How about the yellow press? Is it available in the Internet?

Group 2: Internet shops

- What do you need to make a purchase?
- Are you able to buy anything you need?
- Are the goods always legal?
- Are the prices high?
- What is the advantage of traditional shop in purchasing food and clothes?
- Are you able to get a piece of advice from the shop assistant?
- Are you able to ask for help in the consumer department?

Group 3: Internet travel agencies

- Do they provide their clients with more full information?
- Do the sites contain any information about the clients' impressions on the trip?
- Is it convenient for the clients?
- Is the agent's opinion/advice important to you?
- Are you able to get any compensation in the case of your dissatisfaction with the trip?

Group 4: Communication through Internet

- What opportunities do these sites offer to the clients?
- Is it easy to find friends with common interests by the Internet
- Is it possible to find additional information about the people you communicate with?
- Are you sure that your correspondence is confidential and nobody can read it?
- Do you lack visual contact in communication?

Post-task: Make you own prediction about the future. Will the Internet communication replace traditional one completely?

VI. Work with the Internet

- Sum up the ideas about the advantages and disadvantages of using Internet. Add more ideas to the list.

- Read some more information about Internet disadvantages and the problem of security in your course books.
  http://www.buzzle.com/articles/advantages-disadvantages-internet.html
  http://www.youthvillage.co.za/2013/09/advantages-disadvantages-using-internet-2/
  http://smallbusiness.chron.com/advantages-disadvantages-business-using-internet-business-activity-27359.html

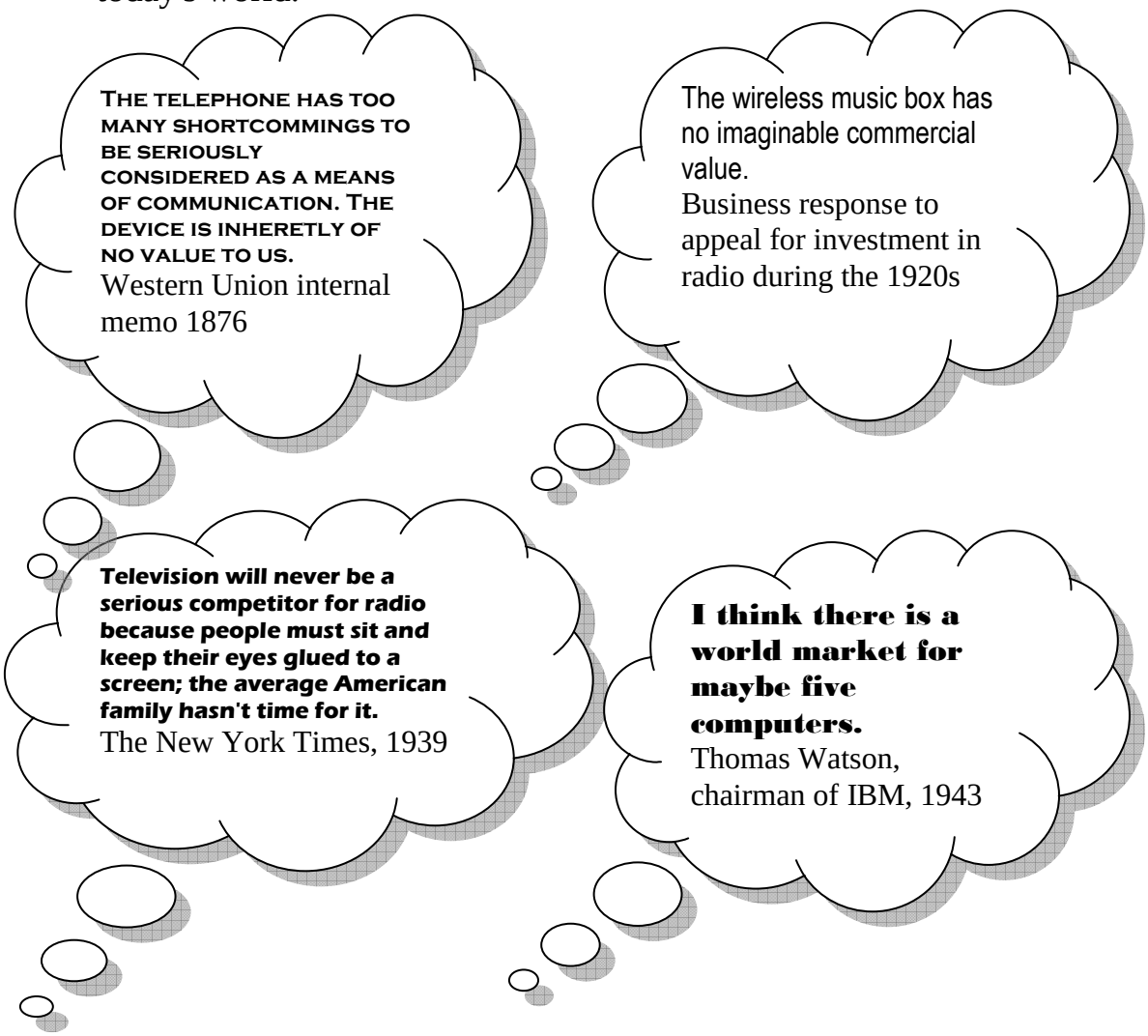
- You are a reporter in a local newspaper. Write an article by the title: “Internet is conquering the world”.

UNIT V

COMPUTER TOMORROW

I. Lead in

1. Discuss the following quotations. Imagine you could talk to the people quoted. Explain how wrong their predictions were, using evidence from today's world.



2. What do you think has been the greatest advance in communications in last ten years?

Group work:

Work in a group of three and make your predictions about the future development in different IT areas. Each group will take one area.

- television
- radio
- telephone
- computer

II. Reading

- Have you heard about the Artificial intelligence?
- What is it? Make a definition of it.
- Compare your definition with the one below.
- What are the differences?

Definition:

Artificial Intelligence is a branch of *Science* which deals with helping machines find solutions to complex problems in a more human-like fashion. This generally involves *borrowing* characteristics from human intelligence, and *applying* them as algorithms in a computer friendly way. A more or less flexible or efficient approach can be taken depending on the requirements established, which influences how artificial the intelligent behavior appears

- Why do people need AI?
- What are the limitations of AI?
- What are the applications of the AI?

Read the article about the present level of development of AI and compare your ideas.

Predicting the future is always a hit and miss proposition
writes Kevin Anderson.

In the 1940s, Thomas Watson, the head of IBM, famously predicted the world demand for computers might be as high as five.

And artificial intelligence has had its share of *off-target predictions*. AI researchers in the 1950s predicted that a computer would be the world chess champion by 1968. It took a few more decades than that.

But AI experts remain optimistic and are predicting that by the middle of the century, intelligent machines will be all around us.

AI is everywhere

In fact, they point out that artificial intelligence already *pervades* our lives.

Machines will gradually become more intelligent and become more *pervasive.*

Fuel injection systems in our cars use learning algorithms. Jet turbines are designed using genetic algorithms, which are both examples of AI, says Dr Rodney Brooks, the director of MIT's artificial intelligence laboratory.

Every cell phone call and e-mail is routed using artificial intelligence,

says Ray Kurzweil, an AI entrepreneur and the author of two books on the subject, The Age of Intelligent Machines and The Age of Spiritual Machines.

"We have hundreds of examples of what I call narrow AI, which is behaviour that used to require an intelligent adult but that can now be done by a computer," Mr Kurzweil says.

"It is narrow because it is within a specific domain, but the actual narrowness is gradually getting a bit broader," he adds.

The near future

Right now, Dr Brooks says that artificial intelligence is about at the same place the personal computer industry was in 1978.

In 1978, the Apple II was a year old and Atari had just introduced the 400 and 800. The choice of personal computers was pretty limited and what they could do was also relatively limited by today's standards.

"Who would have thought by 2001, you would have four computers in your kitchen?" said Dr Rodney Brooks, director MIT AI Lab

The metaphor may *undersell* AI's successes. AI already is used in pretty advanced applications including helping with flight scheduling or reading X-rays.

Within 30 years, scientists believe that they will have an understanding of how the human brain works that will give them "*templates* of intelligence" for developing strong AI.

And Dr Brooks says that by 2050, our lives will be populated with all kinds of intelligent robots.

Sounds *outlandish*? "Who would have thought by 2001, you would have four computers in your kitchen," he says, pointing to the computer chips in our coffee makers, refrigerators, stoves and radios.

Gradual change

But will our hyper-intelligent coffee makers in 2050 suddenly decide to kill us? Or will humans be made redundant by a legion of intelligent machines?

A scientist does not just wake up and decide to build a robot with emotions, Dr Brook says

No. Firstly, Dr Brooks and Mr Kurzweil believe that we will not wake up one day to find our lives populated with all manner of artificially intelligent devices.

Referring to Spielberg's movie AI in which a company creates a robot that bonds emotionally like a child, Dr Brooks says: "A scientist doesn't wake up one day and decide to make a robot with emotions."

Despite the rapid advance of technology, the *advent* of strong AI will be a gradual process, they say.

"The road from here to there is through thousands of these benign steps," Mr Kurzweil says.

Look through the article once again and extend these ideas (give examples from the text)

1. AI has already become a part of our life.
2. AI has a vast future ahead.
3. AI is not well developed yet.
4. Creating of AI is a tedious process.

III. Vocabulary focus

1. Find words in the article which mean:

a sample of intelligence, to penetrate in our world, invalid forecast, widespread, AI arrival, It is incredible, to underestimate the success

2. Read these expressions and try to put them into the appropriate column of the table to speak about:

The benefits of AI	The downsides of AI

To take over our lives
To encourage progress
To limit freedom
To misuse data
To supersede people
To increase life expectancy
To enhance productivity

Try to continue this table in pairs

IV. Work with the Internet

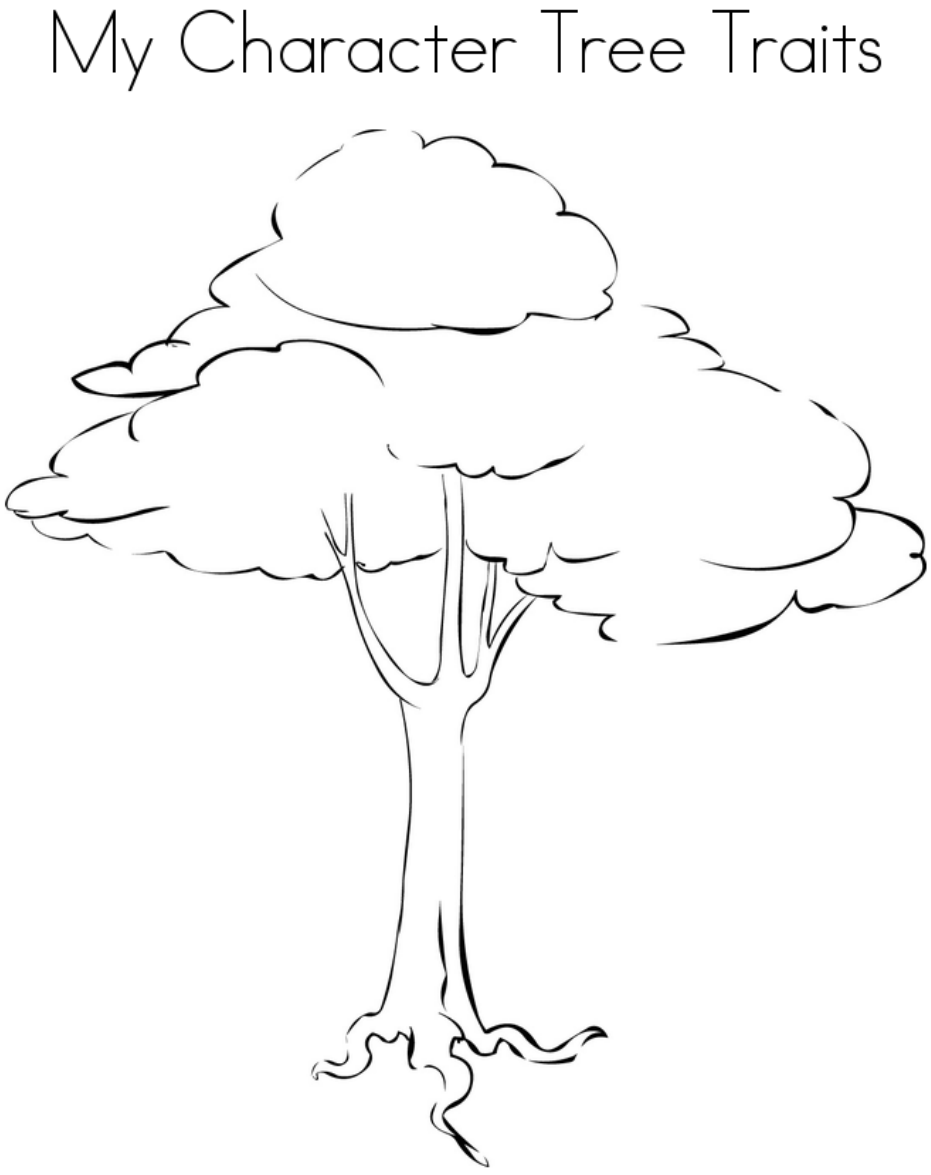
Look through the Internet and find the information about the advantages and disadvantages of AI development. Get ready to participate in group discussion.
Discussion:
Group1: For the development of AI.
Group2: Against the AI development.
Chairman: Leads the discussion and prepares questions.

Discuss these problems in groups:
- Do people really need AI?
- Can machines be creative?
- How intelligent are human beings?
- Can machines match the reality?
- Is AI a friend or an enemy?

UNIT VI

JOBS IN COMPUTING

I. Lead in



The tree represents a person with his/her skills and personal qualities.
LEAVES: personal qualities and skills

Each student will get this tree. Put your qualities and skills connected with working with the computer in the leaves.

- Exchange the trees with each other. Study the trees and make a presentation of each other's qualities and skills
- After each presentation the whole group tries to find the appropriate job for each candidate trying to explain their choice.

Here you can find some ideas:

- Having ambition
- Working hard
- Getting on with people
- Being adaptable
- Looking smart
- Having sense of humor
- Being motivating
- Being competent
- Being a good team player
- Having good communication skills
- Having patience and tenacity
- Having logical reasoning
- Having problem solving skills

What computer specialties do you know?
What are the responsibilities of different computer specialists?

II. Reading:

1. Have you chosen an appropriate job for yourself?
What responsibilities are you suitable for?

Here you can find some ideas:

- to work on the full range of development activities – analysis, design, coding, testing and implementation
- to perform formal analysis of operational needs
- to run data-processing equipment (data control and editing)
- to facilitate systems integration
- to provide messaging, data storage, networking
- to develop and maintain web-based applications
- to possess analytical problem solving skills
- to handle customer support calls
- to set up equipment
- to maintain security of documents and customers
- to install, configure and maintain software and hardware systems
- to assess potential risks
- to conduct trainings to new hires, users and technical teams as needed
- to analyze system issues and provide resolutions.
- to recommend process improvements
- to ensure system reliability, security, integrity and performance
- to conduct computer diagnostics

2.Read these two extracts from the job advertisements. Compare your ideas.

Relief International

Web Designer-Developer

Summary

Relief International, a humanitarian non-profit agency with the vision and commitment to saves lives and sustaining livelihoods, is currently in search of Web Designer/Developer. This position is based in Los Angeles, California. *Under the supervision* of the Executive Director, the *incumbent* is responsible for developing, organizing, implementing, and maintaining Web services for the company. The incumbent will provide technical support and assist in the implementation and maintenance of company computing systems. The incumbent also provides on-going technical and analytical support to end-users and colleagues.

Primary Responsibilities

•Develop and maintain web-based applications utilizing strategic, technical and user-friendly approaches.

•Utilize web and graphics development technologies to produce and implement internet and intranet solutions.

•Communicates and collaborates with staffs to develop recommendations for web-related services. .

•Keeping up-to-date on the latest web site, user experience, and production technologies and proven best practices.

•*Meticulous testing* and *troubleshooting* of web pages across multiple browsers, platforms, operating systems.

•Produce and deploy electronic newsletters that include a diverse set of articles; be knowledgeable about common email delivery software, metrics and best practices.

•Consults with managerial and technical personnel to clarify problem intent, identify problems, and suggest changes.

Qualifications

•Equivalent to a bachelor's degree from an accredited institution in computer science or related field.

•Two to four years experience in web design.

•Knowledge of Content Management Systems, PHP, HTML (hand coding, Dreamweaver and FrontPage), CSS, Javascript, Flash, and, ActionScript, MySQL/SQL/ XML/ XHTML.

•Facility with all web publishing and common design programs including Quark, InDesign, Photoshop, Illustrator, Acrobat and other design tools.

•Experience developing user interfaces, layouts, branding, flash animations, other digital media to facilitate the distribution of digital information to all stakeholders.

•Knowledge of common email delivery software, metrics and best practices.

•Must possess analytical problem solving skills, and demonstrate the ability to handle projects.

Red Mountain Machinery

Sr. Database Administrator - AZ

Job Summary

All database positions in the company form the sub-department of IT known as "Information Services". The overall task of IS is to oversee all aspects of data entry, create and maintain reports, queries, and provide first-level data analysis to all departments, based on need. IS the primary contact for all aspects of TrakQuip and all Microsoft Access databases.

The position of Senior Database Analyst will *oversee the overall progress* of Information Services. The Senior Database Analyst's primary focus will be working on larger projects that serve the company's strategic needs, and devising and *implementing strategies* for data entry and data consistency. This position will also be ultimately responsible for all work done by Information Services.

Essential Duties and Responsibilities

• Supervising, training, *setting priorities*, and reviewing progress of Junior Database Analyst. As the Junior Database Analyst will report directly to the Senior Database Analyst, it will be important to ensure that the flow of communication between Information Services and the rest of the company is consistent.

• Resolving software issues

• Setting priority of all projects

• Maintaining SQL databases

• Overseeing creation of Access databases

• Considering data entry strategy and other procedural items

Desired Minimum Qualifications

Education and Experience:

• 4 year college degree, not necessarily in a related field

• 4 years *related experience*, not necessarily in a related field or industry

• Advanced knowledge of database structure

• Proficiency with SQL/T-SQL language, Exp. w/VBA conversion to .net, ASP.net, XML, Documentation, Sharepoint & Webparts Development, Source Safe.

• Advanced knowledge of MS Access and programming in Visual Basic for Access

Necessary Knowledge, Skills and Abilities:

• Advanced knowledge of Microsoft Word, Access, Excel

• Problem solving skills

• Concepts of intermediate math

• Ability to handle multiple tasks.

3. Look through these advertisements again and answer these questions:

- What companies are represented in these advertisements?
- What sort of a specialist do they need?
- What will their responsibilities be?
- Do they need any experience?

III. Vocabulary focus

1. Find English equivalents to the following Russian words. Use them in the sentences of your own describing the responsibilities of these candidates:
Выявление неисправностей
Кандидат на должность
Тщательное исследование
Устанавливать очередность
Осуществлять стратегию
Под руководством
Соответствующий опыт работы
Следить за общим развитием

2. Match the highlighted words in the texts with their synonyms below. Use them to describe responsibilities of people working on computer.

cooperate, decide, help, carry out, support, contrive, utilize, manage, have

IV. Speaking (Pair work)

Student 1:
You have read one of the above job advertisement in the newspaper. You are looking forward to getting this job. Pay a visit to that company and ask for more information.

Student 2:
You are working for one of these companies. You are responsible for recruitment of the staff. Talk to St1 and answer his/her questions. You can use information from the advertisements.

V. Reading

If you want to apply for a job you should present the information about yourself correctly. You can do this with the help of CV.

You will be given an example of CV.
What parts does a typical CV consist of?

Curriculum Vitae

Profile

Self-motivated, responsible and ambitious

Skilled organizer and problem solver with the ability to consider options with an open mind before making a decision

Determined to achieve results and be successful

Education

2003 – 2006 Computing with Business Management (BSc) at Kingston University.

Subjects studied: Operating System Networking, Management Accounting, System Analysis & Design, Accounting in a Business Context, Introductory Data Analysis, Business Modelling and etc.

2000 – 2003 A/S Maths & AVCE Information Communication Technology at Harrow College

Main modules included: Creating and managing website, Spreadsheet, Networking, Presenting Information, Visual Basic, Graphics and etc

1998 – 2000 GCSE at Harrow High School

10 GCSE's: Including Maths, English/ English Literature, Humanities, Art, Science, French and Technology

1999 – 2000 Diploma of Vocational Education in Art and Design

Experience

15.08.06 – 15.08.2007 Ocean Exchange UK Ltd: Data Entry Administrator

Main Duties: Administration of inbound and outbound data – Logging, checking and storing. Data Manipulation – Formatting, verifying and preparation of electronic data using MS Excel, MS Access Data Reporting – Delivery of internal reports on database compilation.

12.03.01 to Present Primark Stores Ltd: Sales Advisor

Involved in all aspects of customer service, including: answering questions, problem solving and providing assistance to the customers

21.06.99 - 02.07.99 Nationwide Building Society: Clerical Assistant

Responsibilities were amending records on computer, extracting information from computer and etc.

Computer skills

Highly proficient in using the following software packages: Microsoft Word, Excel, Access, Front

Nationality: British

Marital Status: Single

Referees:

Professor Jones, Kingston University, Penrhyn Road, Kingston upon Thames

Mr Burke (Store Manager) Primark Stores Ltd, 13 St Ann's Shopping Centre, St Ann's Road, Harrow

Together with your CV you should write a covering letter. Here you are given some instructions on how to do this.

Read the instructions and answer the following questions:

- What is the covering letter for?
- What parts does it contain?
- What recommendations are given to you?

Writing a covering letter

Your covering letter could make the difference between getting a foot in the door or having it slammed in your face.

Covering letters are not just sent as a courtesy, but are an introduction to your potential employer. They are designed to complement your CV and provide extra information about you. The covering letter is the first impression a potential employer will have of you and without a good impact, they may not progress far with your CV.

Introducing yourself - making an impact

A covering letter should be concise and ideally no more than three paragraphs long. It needs to introduce you to the potential employer, say what you want to do for the employer, and show how and why you are suited for that particular work. Its main aim is to get your CV read.

The style of the covering letter should be reasonably formal and business-like and match the CV or application form you are sending. It should be typed using a clear font and on good quality, plain white or cream paper, preferably the same as the CV. If you are emailing it, make it look business-like.

- Always write to a named individual, whether you are applying for a job or writing a speculative letter. If you don't know who to address the letter to, use your initiative and contact the company to find out the name of the relevant person. Make sure you check the spelling of their name, no one likes to have their name spelled incorrectly.
- The opening paragraph should let the reader know why you are writing to them. If you are writing to apply for a position with their company, make clear which job you are applying for and where you saw the advertisement, give the title and date of the publication that the vacancy was advertised in. For speculative letters outline what kind of work you are looking for.
- You need to show an interest in the position you are applying for and that you have some knowledge of the employer. Find out about the company by looking for other advertisements it may have, search the internet for its website, look through the company's literature and scan business journals and newspapers for other general information. Refer to any recent news about the company, this will show you understand what the company is about.
- Explain why you want to work there and emphasize what you can do for the company. Avoid using phrases like 'I think I could gain valuable experience with your company' or 'this is an area of my skill I have always wanted to develop'. The employer will hire you because of what you can do

for the company, not because of what you think you can get from working there. Be keen, but genuine and avoid using cliché phrases.

- Don't state the obvious, e.g. 'I am writing to apply for the position, as you will see from my CV' etc. Rather reword the opening of each paragraph to get straight to the point, e.g. I am confident that my legal experience would make me a suitable candidate for this position and have attached my CV for further reference.

Why should you get the job?

Paragraph two needs to tell the employer, in more detail, why you are suited to the job and what skills you have got to offer. Why would the employer benefit from taking you on? This is the most important section of the covering letter and will probably make an employer decide whether to look at your CV or not. You need to flag up two or three of your key selling points and give some concrete information on the skills and experience you have.

Make sure you choose points that relate to the job you are applying for so you can match your skills to their needs. The covering letter also gives you a chance to show off skills that you might not be able to get across in the CV, such as maturity, teamwork or interpersonal skills. Make sure everything you say about your skills and experience in your covering letter is backed up by evidence in your CV.

Positive endings

Don't let your letter fizzle out at the end with just a bland 'yours sincerely'. Finish the letter with a strong, proactive phrase which sets the scene for the next stage - being called in for an interview, e.g. 'I am available for interview at your convenience and look forward to meeting you'. If you have addressed the letter to a named person (and you should have done), you should end the letter with Yours sincerely, if you wrote Dear Sir or Madam, it should end with Yours faithfully.

Point out several useful phrases that you can use in your covering letter.

- Look at the example of a covering letter.
- Does it correspond to the instructions given above?
- What should you add to the letter to make it better?

Dear Mr Sorefoot

Computer Shop Manager

Please find enclosed my completed application form for the above position.
As you will see from my form, I have ten years experience with Bates Retail as a Computer Shop Manager.
I look forward to hearing from you and hope that you will be able to invite me for an interview.
I would very much welcome an opportunity to discuss my application in greater detail and convince you that I am the right person for the job.
Yours sincerely
Frances Slimwaist

VI. Writing

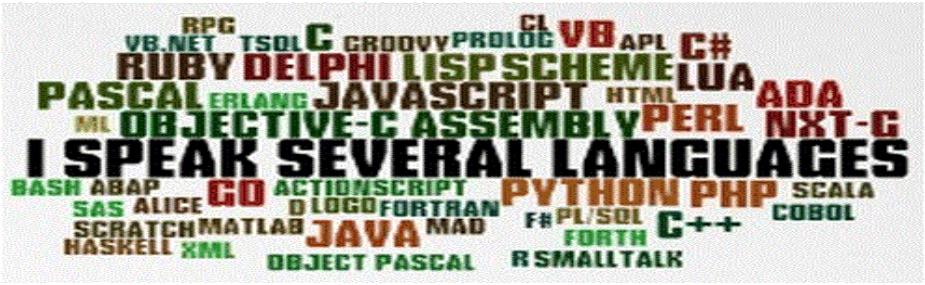
You are looking for a job. Find in the Internet or in the newspaper an advertisement of a job you would like to have. Write your CV and your covering letter to apply for a job.

Useful phrases:
I wonder if you would be so {kind|good} as to...
Will you be so kind as to...
Will you kindly...
I {shall|should} be {happy|glad|pleased} if you...
We are so {happy|glad|pleased} to...
We {will|would} be most {happy|glad|pleased} to...
I cannot tell you how {happy|glad|pleased} I am to...
I have much pleasure in... It gives me great pleasure to...
It {is|was|would be} a great pleasure (to me) to...
It is a great honour and pleasure to...
I enclose {herewith/herein}...
You will find {enclosed/with this letter}...
Please find enclosed...
Attached to this letter you will find...
I am very glad of the opportunity to give my {attention|consideration} to...
I am very grateful to you for giving so much attention to...
I am really happy that I can offer you my {attention|consideration} to...
I hope to hear from you soon and remain with kindest personal regards.
I hope to receive your favourable reply.
We look forward to hearing from you.
I am looking forward to hearing you soon.
We look forward to the opportunity {of + [gerund]|that}...
I look forward to the possibility {of + [gerund]|that}...
We look forward to welcoming you in this country.
I look forward to the pleasure of hearing you.

UNIT VII

PROGRAMMING LANGUAGES

I. Lead in



Group work (home group):

- What programming languages do you know?
- What are some of the best programming languages to learn?
- What are their special features?

Complete the table with programming language specific features. Match the specific feature to the language it characterizes.

C Language	a) It is one of the newest programming languages to be used on a wide-scale. b) It is ancestor to many of the advanced programming languages. c) It requires less time, less lines of code, and less concepts to be taught to reach a given goal. d) Coding in this language is stricter and has a steeper learning curve than other languages.
Java	e) It is one of the most used programming languages in the world. f) It is often considered to be the easiest language to learn, owing to its simplicity, readability and straight forward syntax.
Python	g) With this language you'll be able to access and manipulate the most important computer parts like the filesystem, graphics, and sound for any fairly sophisticated and modern program. h) It is used for developing low level applications.
Ruby	i) One of the truly greatest perks of working with this language is that it's completely open-sourced and free. j) There is a sense of beauty in its coding that makes this one of the best programs for beginners. k) This language is used to develop enterprise level application and video games. l) It is regarded as combination of some of the most famous features of Lisp, Pearl and Eiffel.

II. Reading

1. Group work (expert group):

Each group will read one of the texts about some computer language and will make a summary of its specific features.

C Language

C language was developed by Dennis Ritchie in 1972, at Bell labs. The legacy of C language stems from the fact that it is ancestor to many of the advanced programming languages such as C++, Java, C#, JavaScript, and Pearl. It is probably due to this reason that C is the first programming course offered in universities as it paves way for learning other languages.

C is one of the most widely used programming languages. There are a few reasons for this. As noted programmer and writer Joel Spolsky says: *"C is to programming as learning basic anatomy is to a medical doctor"*.

C is a machine level language, so you'll learn how a program interacts with the hardware and learn the fundamentals of programming at the lowest – hardware – level (C is the foundation for Linux/GNU). You learn things like debugging programs, memory management, and how computers work that you don't get from higher level languages like Java—all while prepping you to code efficiently for other languages. That said, coding in C is stricter and has a steeper learning curve than other languages, and if you're not planning on working on programs that interface with the hardware (tap into device drivers, for example, or operating system extensions), learning C will add to your education time, perhaps unnecessarily.

Stack Overflow has a good discussion on C versus Java as a first language, with most people pointing towards C. However, personally, although I'm glad I was exposed to C, I don't think it's a very beginner-friendly language. It'll teach you discipline, but you'll have to learn an awful lot before you can make anything useful. Also, because it's so strict you might end up frustrated

Java

Java was developed by James Gosling, in 1990 at Sun Microsystems. Java is one of the most used programming languages in the world, which is reason enough to want to learn it if you're truly considering pursuing a career in programming. One of the things that make Java so great is that it works on a very wide range of platforms. There is always something that can be done with Java.

Java further adds to the capabilities of C++ language. It is often said that Java owes a lot to C and C++ in terms of features and capabilities. The special thing about Java is that this is the first purely object oriented programming language. Java was developed on the principle of WORA i.e. "Write Once Run Anywhere". This feature adds to the portability of Java. You just need to compile Java Source code once and then on any machine where JVM (Java Virtual Machine is installed), you can run that code irrespective of the underlying operating system and hardware.

Java language is used to develop enterprise level application and video games; it can be employed to develop web based applications when used with JSP (Java Server Pages). Java has huge job market with attractive incentives. This is a must learn language for every programmer.

Java has the advantage of a long history of usage. There are lots of "boilerplate" examples, it's been taught for decades, and it's widely used for many purposes (including Android app development), so it's a very practical language to learn. You won't get machine-level control, as you would with C, but you'll be able to access/manipulate the most important computer parts like the filesystem, graphics, and sound for any fairly sophisticated and modern program—that can run on any operating system.

Developing a deep understanding of Java takes a lot of time and strenuous effort, as it requires deep knowledge of programming and how it works on a highly nuanced level. Coding in Java isn't just following steps until you get the project you want to work; it's knowing how and why the project works because of a complex fundamental knowledge.

If a career in programming sounds attractive, just know that Java is going to eventually need to be learned, so why not sooner than later? In the end you will have developed a programmer's mind and will be ready for any obstacle.

Python

Python is another high-level programming language and is often considered on the easiest language to learn, owing to its simplicity, readability and straight forward syntax. Python was developed by *Guido Van Rossum* in 1991. Python wasn't used that widely in the past; however, the language has seen great popularity in the recent years owing to Google's investment in the language in the past 10 years. Currently, some highly famous and robust sites are operating in Python including *pinterest.com*, *instagram.com*, and *rdio.com*. Like, PHP, Python also has associated web frameworks which make it more convenient to develop web based applications in python.

Many people recommend Python as the best beginner language because of its simplicity yet great capabilities. The code is easy to read and enforces good programming style, without being too strict about syntax (things like remembering to add a semicolon at the end of each line).

Patrick Jordan at Ariel Computing compared the time it takes to write a simple script in various languages (BASIC, C, J, Java, and Python) and determined that while the other languages shouldn't be ignored, Python: *"requires less time, less lines of code, and less concepts to be taught to reach a given goal. […] Finally programming in Python is fun! Fun and frequent success breed confidence and interest in the student, who is then better placed to continue learning to program"*.

SOA says Python is an absolute must for beginners who want to get their feet wet with Linux (or are already familiar with Linux).

One of the truly greatest perks of working with Python is that it's completely open-sourced and free. If you have access to a computer, you can feasibly learn Python. What's even better is that it has a great online community that offers scores of tutorials and other learning tools. The program is straightforward enough that there aren't many variable solutions to mistakes, so troubleshooting usually involves just a quick Google search for a helpful answer.

Python may not teach the fundamentals the way C or Java do, but it will give you the satisfaction of actually getting work accomplished, which in the long run may be what keeps a potentially great programmer from giving up.

Ruby

Ruby is one of the newest programming languages to be used on a wide-scale. It has been designed by Yukihiro "Matz" Matsumoto from 1993 to 1995 (he is an employee of Heroku, a cloud platform, in 2012). The goal was to program in human style rather than force him adapting its mind to the computer structure. This was firmed up by applying a *principle of least surprise* that means that the language syntax is always as the programmer does expect it is. But there is also a lot of conventional rules to simplify the programming such as *only a way to do a thing* (unlike Perl).

Ruby powers Ruby on Rails, a web development framework on which numerous famous websites including Github, Scribd, Yammer, Shopify, and Groupon have been developed.

The language was locally used before the rails framework appears in 2004 and shares its success with the language itself. It is a framework for building Web application based on that language.

Ruby is regarded as combination of some of the most famous features of Lisp, Pearl and Eiffel. Ruby also has got a good job market and ruby developers are being paid decently at the moment.

One of the best reasons to pick up Ruby as a first language is that its syntax is one of the absolute easiest for beginners to understand. When compared to some other programming syntax, like C, Ruby seems almost intuitive with the logical and semantic approaches it takes. There is a sense of beauty in the coding of Ruby that makes this one of the best programs for beginners. The code is so easy to write and read, it’s no wonder this language is so often picked up before Java.

Ruby is also very similar to both Perl and Python, so a jump to either of those two languages is nearly seamless.

While it is primarily object-oriented, it also has the capability of multiple paradigms, giving its users plenty of freedom to work with.

III. Vocabulary focus:

1. Match the words from two columns to create a phrase and use the phrase in the sentence of your own to speak about

interact	the most important computer parts
work	the mind to the computer structure
pave	good programming style
enforce	web based applications
adapt	way for learning other languages
develop	the fundamentals
access	on a wide range of platforms
teach	with the hardware

2. Complete the sentence using one word:

applications, debugging, framework, ancestor, object, script, syntax, coding

1. Many famous websites were developed on this web development …… .
2. One of the reasons to pick up this language is that its …… is easy to understand.
3. It is more convenient to develop web based ……. in python.
4. It requires less time to write a simple …… in this language.
5. …… in Java is knowing how and why the project works.
6. This is the first purely ……. oriented programming language
7. C language is an …… to many of the advanced programming languages.
8. With the help of this language you will learn things like …… programs, memory management, and how computers work.

Group work (expert group):

Each expert group member will return to their home group and will retell the summary of their programming language specific features.

Group work (home group):

Correct the tables with programming language specific features

IV. Work with the Internet

Surf the net and be ready to tell about other popular programming languages. Find some additional information and facts about programming languages.

UNIT VIII

FAMOUS PEOPLE IN COMPUTING

I. Lead in

Group work (home group):

Collect information about the person from the picture.

- What does he do?
- What is his background?
- What are his traits of character?

You can use some expressions describing this person:

entrepreneur, marketer, inventor, chairman, CEO, charismatic, music industries, animation studio, laser printers, smart phones, diagnosis, health, death

II. Reading

1. While reading mark the information:

   - I knew this fact (+)
   - I was not right about this (–)
   - This information was unknown for me (!)

STEVE JOBS

Steve Jobs co-founded Apple Computers with Steve Wozniak. Under Jobs' guidance, the company pioneered a series of revolutionary technologies, including the iPhone and iPad.

Steven Paul Jobs was born on February 24, 1955, in San Francisco, California, to Joanne Schieble (later Joanne Simpson) and Abdulfattah "John" Jandali, two University of Wisconsin graduate students who gave their unnamed son up for adoption. As an infant, Steven was adopted by Clara and Paul Jobs and named Steven Paul Jobs. Clara worked as an accountant, and Paul was a Coast Guard veteran and machinist. The family lived in Mountain View, California, within the area that would later become known as Silicon Valley. As a boy, Jobs and his father would work on electronics in the family garage. Paul would show his son how to take apart and reconstruct electronics, a hobby that *instilled* confidence, tenacity and mechanical skills in young Jobs.

While Jobs was always an intelligent and innovative thinker. Jobs was a *prankster* in elementary school, and his fourth-grade teacher needed to *persuade* him to study. While Jobs studied at Homestead High School (1971), he was introduced to his future partner, Steve Wozniak. Wozniak was attending the University of California, Berkeley, at the time. In a 2007 interview with *PC World*, Wozniak spoke about why he and Jobs clicked so well: "We both loved electronics and the way we used to hook up digital chips," Wozniak said. "Very few people, especially back then, had any idea what chips were, how they worked and what they could do. I had designed many computers, so I was way ahead of him in electronics and computer design, but we still had common interests. We both had pretty much sort of an independent attitude about things in the world. ..."

After high school, Jobs *enrolled* at Reed College in Portland, Oregon. Lacking direction, he dropped out of college after six months and spent the next 18 months dropping in on creative classes at the school.

In 1974, Jobs took a position as a video game designer with Atari. In 1976, when Jobs was just 21, he and Wozniak started Apple Computer. The duo started in the Jobs family garage, and funded their entrepreneurial venture by

Jobs selling his Volkswagen bus and Wozniak selling his beloved scientific calculator.

Jobs and Wozniak are credited with revolutionizing the computer industry by democratizing the technology and making the machines smaller, cheaper, intuitive and accessible to everyday consumers. Wozniak *conceived* a series of user-friendly personal computers, and – with Jobs in charge of marketing – Apple initially marketed the computers for $666.66 each. The Apple I earned the corporation around $774,000. Three years after the release of Apple's second model, the Apple II, the company's sales *increased* by 700 percent, to $139 million. In 1980, Apple Computer became a publicly traded company, with a market value of $1.2 billion by the end of its very first day of trading. Jobs looked to marketing expert John Sculley of Pepsi-Cola to help fill the role of Apple's president.

However, the next several products from Apple suffered significant design *flaws*, resulting in recalls and consumer disappointment. IBM suddenly surpassed Apple in sales, and Apple had to compete with an IBM/PC – dominated business world.

In 1985, Jobs resigned as Apple's CEO to begin a new hardware and software company called NeXT, Inc. The following year Jobs *purchased* an animation company from George Lucas, which later became Pixar Animation Studios. Believing in Pixar's potential, Jobs initially invested $50 million of his own money in the company. Pixar Studios went on to produce wildly popular animation films such as *Toy Story*, *Finding Nemo* and *The Incredibles*. Pixar's films have netted $4 billion. The studio merged with Walt Disney in 2006, making Steve Jobs Disney's largest shareholder.

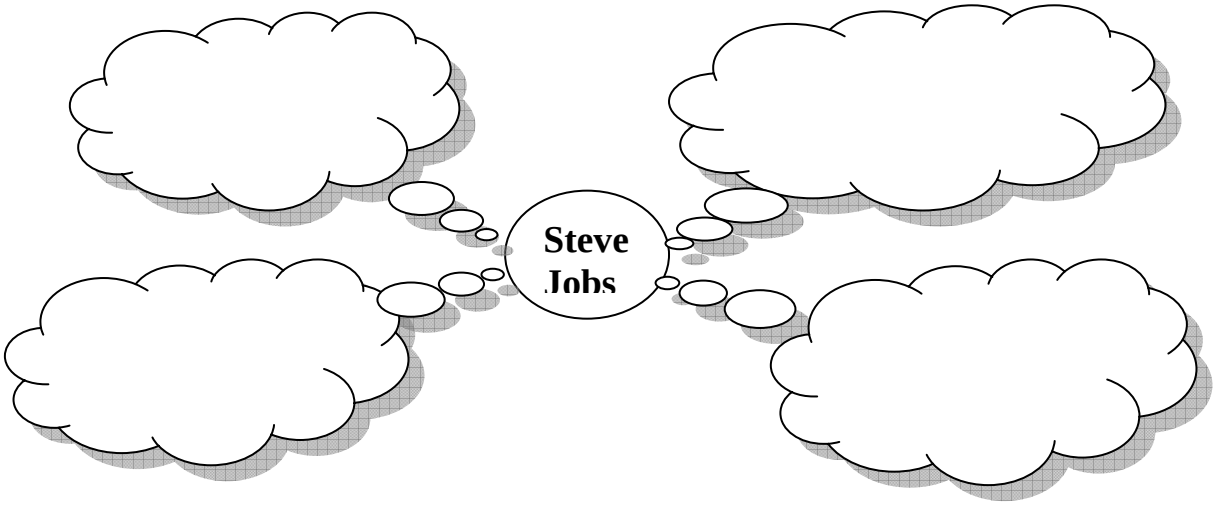
Apple eventually bought the company in 1996 for $429 million. The following year, Jobs returned to his post as Apple's CEO. With a new management team, altered stock options and a self-imposed annual salary of $1 a year, Jobs put Apple back on track. His *ingenious* products such as the iMac, effective branding campaigns and stylish designs caught the attention of consumers once again.

Apple introduced such revolutionary products as the Macbook Air, iPod and iPhone, all of which have dictated the evolution of modern technology.

In 2003, Jobs discovered that he had a neuroendocrine tumor, a rare but operable form of pancreatic cancer. Instead of surgery, Jobs chose to alter his pescovegetarian diet while weighing Eastern treatment options. For nine months, Jobs postponed surgery, making Apple's board of directors nervous. In 2004, he had a successful surgery to remove the pancreatic tumor. True to form, in *subsequent* years Jobs disclosed little about his health.

On October 5, 2011, Apple Inc. announced that its co-founder had passed away. After battling pancreatic cancer for nearly a decade, Steve Jobs died in Palo Alto. He was 56 years old.

2. Compare the facts known to you and new information. Discuss this information in pairs.
3. Fill in the cluster with the most important facts from the Steve Jobs biography. The cluster should contain the key words you can find in the text.



III. Vocabulary focus:

1. Match the words from two columns to create a phrase and use the phrase in the sentence of your own to speak about Steve Jobs.

independent	sales
entrepreneurial	of marketing
accessible	disappointment
market	attitude
branding	value
in charge	to consumers
increase	campaign
consumer	venture

2. Find words in the article which mean:

train, joker, induce, join, devise, raise, shortcoming, acquire, creative, following

IV. Work with the Internet

Surf the net and be ready to tell about other famous people in IT sphere.
Present the information you found to your group mates.
www.biography.com
www.inventors.about.com
www.notablebiographies.com

UNIT IX

APPLE VS MICROSOFT

I. Lead in

Discuss in pairs:

1. Why do people prefer one operating system to another?
2. What operating system do you like? Give your reasons.
3. What products does the Microsoft Company issue?
4. What products does the Apple Company have?
5. Product of what company do you prefer?

Complete the table with the arguments in favor of each company's products:

MICROSOFT	APPLE
•	•
•	•
•	•
•	•
•	•

II. Reading

Read the computer magazine article and find more information in favor or against these companies' products.

MACS® AND PCS

As Apple® grows in popularity, the Mac® versus PC debate continues. Many businesses experience trouble choosing between the two. However, businesses must realize that each computer is suited for different needs.

The two differ most in their operating systems. With PC you have a variety of OS options from Microsoft® and other sources. Macs® come with one of the proprietary Apple® OSes like OS X®. You can install Windows® on a Mac®, but many users prefer the Mac® OS regardless.

Macs® have proven themselves vital in publishing, particularly the prepress process. Mac® has superior typography and color matching. Once printed, products look exactly as good as they do on the computer screen.

Meanwhile, PCs are noted for their fast processing speed and adaptability. Users can customize a PC to their needs. Additionally, their video subsystems are more powerful. This makes PCs desirable for game designers and others who need advanced graphics.

However, both computers have their limitations. While PCs are cheaper, they are also more susceptible to viruses. Macs® usually cost more but are less susceptible to computer viruses. However, Macs® tend to have fewer third-party software options than PCs. Businesses need to consider such concerns and make the right decisions when buying computers for their companies.

III. Vocabulary focus:

1. Match the words with the definition.

1. Apple®	a) company that creates the most common PC operating system
2. Windows®	b) part of the computer that creates visuals
3. customize	c) system that is likely to be harmed by a virus
4. OS X®	d) operating system for PCs
5. processing speed	e) changing a computer for your needs
6. video subsystem	f) company that creates Macs®
7. Microsoft®	g) operating system for Macs®
8. susceptible system	h) a measurement of how quickly a computer works

2. Fill in the blanks with the correct words:

   prepress, color matching, PC, topography

1. A …….. comes with OS X®.
2. Publishing software is needed for the …… process.
3. Good …….. means anything printed out looks like what's on screen.
4. I'm getting a …… because I like the Windows® OS.
5. The …….. on his computer includes hundreds of fonts.

IV. Work with the Internet

Surf the net and find additional arguments in favor of each company.

www.computerhope.com
http://www.computerworld.com/article/2507485/vertical-it/apple-vs--microsoft-by-the-numbers.html
http://americasmarkets.usatoday.com/2014/07/23/apple-vs-microsoft-by-the-numbers/

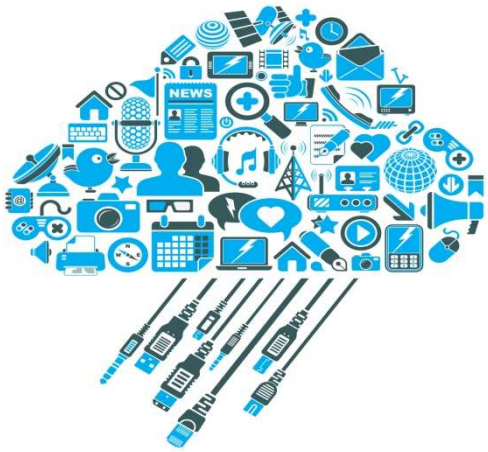
Group work:

Make two groups. One group will present the interest of MICROSOFT Company another group will represent APPLE Corporation. Collect arguments in favor of each company and be ready for the cross discussion.

UNIT X

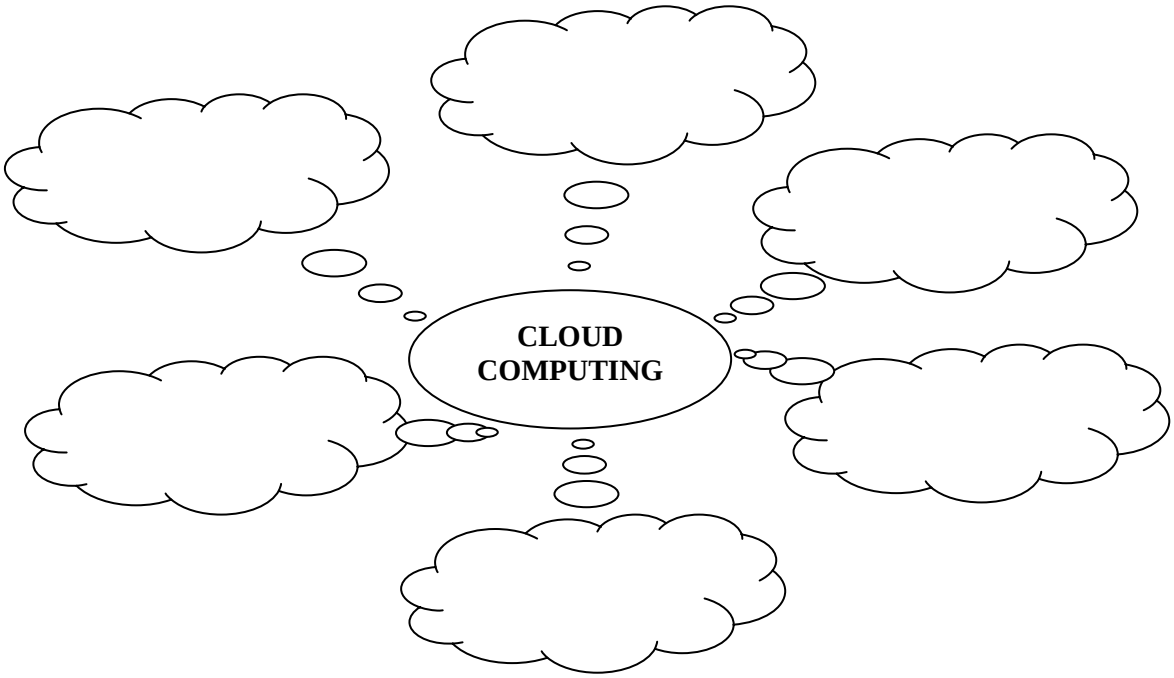
CLOUD TECHNOLOGY

I. Lead in



What is cloud computing?
How can cloud technology help people?
What are the benefits of this online service?
What are the downsides of this technology?
Do you use this technology?
Do you like it? Why?

Fill in the cluster with the most important cloud technology services.



II. Reading

Read the computer magazine article and add more information to the cluster.

Answer the questions:

1. What are the benefits of the cloud technology for businesses?
2. What are the differences between the conventional and the cloud IT services?

What is Cloud Computing and why does your small business need it?

Cloud computing is a way *to increase capabilities* on the fly without investing in a new infrastructure, training new personnel, or licensing new software.

Small businesses *benefit from Cloud computing* by not having *to deploy physical infrastructure* like file and e-mail servers, storage systems or shrink-wrapped software.

Cloud computing is a broad umbrella that includes Software-as-a-Service where a specific application or service is *offered to a customer as a subscription*. **Dropbox**, **Salesforce.com**, and **QuickBooks** are all examples of SaaS.

SaaS provides a way of *delivering a host of software* and technical services that would usually be cost-prohibitive and difficult to manage as on-premise, local solutions.

Cloud computing has come a long way and is now *mainstream technology* for businesses.

The cloud does for IT as **UPS** and **Federal Express** did for the shipping industry.

Cloud computing capabilities deliver *a plethora of network technology*.

Small businesses are most likely to not have an IT staff or technical, *in-house* expert. Some companies don't even know how to ask about their company's tech infrastructure.

Joining the cloud can help reduce these stress of all the *IT stuff*.

In The Cloud

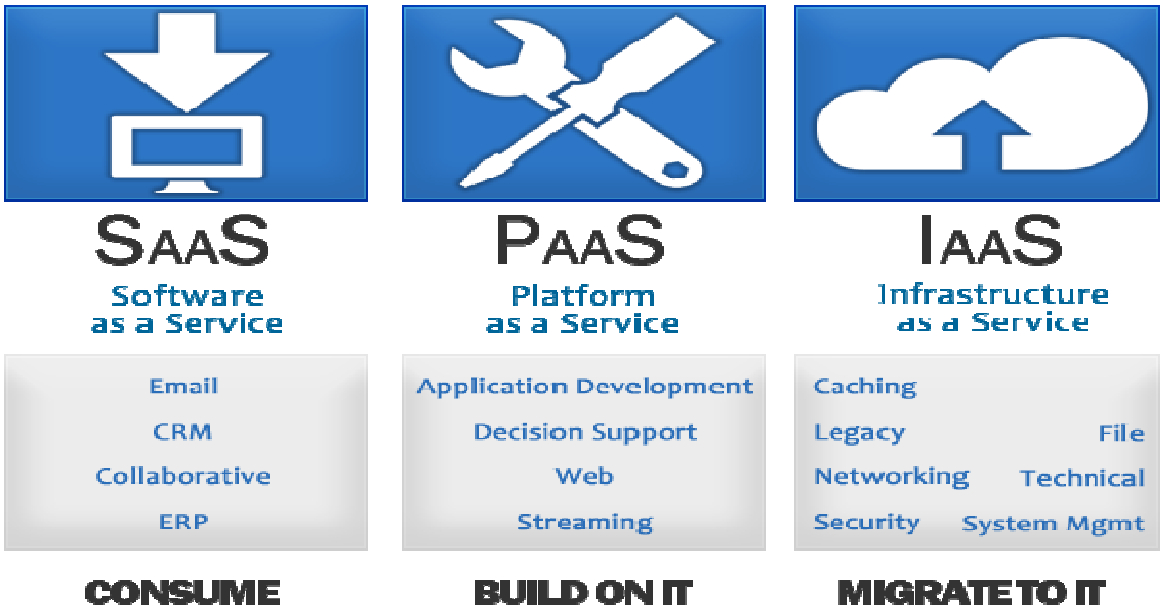
The different types of models of cloud are: **public**, **private**, **community** and **hybrid**.

- Public cloud is available to the general public over the Internet. It's a "*game changer*" for small businesses and gives them access to enterprise-level applications.
- Private cloud is within a corporate firewall. It is reserved for larger companies that have their own IT staff and data centers.
- Community cloud is shared between different organizations. It's a multi-tenant infrastructure with a pay-as-you-go billing structure.
- Hybrid cloud is a combination of the three. This cloud addresses configuration management, change control, security and budgeting.

SaaS (Software as a Service) is predominantly used for office productivity like email, work processing, number crunching, and online file sharing.

IaaS (Infrastructure as a Service) functions like storage and computing. It is used to store intellectual property like documents, drawings, applications and code proprietary to a business.

PaaS (Platform as a Service) is used to develop and run a website in the cloud or build applications.



There is a huge opportunity for growth of a small business when using cloud services.

Cloud computing *encompasses subscription-based or pay-per-use service*, that in real time or over the Internet, extends IT's existing capabilities.

Cloud computing is still at an early stage, with a crew of providers large and small. It delivers not only cloud-based services from storage to spam filtering but presents a utility-style infrastructure for your business.

III. Vocabulary focus:

1. Match the words from two columns to create a phrase and use the phrase in the sentence of your own to speak about cloud technology.

increase	host
benefit	of network technology
deploy	capability
offer	from cloud computing
deliver	technology
mainstream	pay-per-use service
encompass	as a subscription
plethora	infrastructure

2. Fill in the blanks with the correct word:

storage, SaaS, applications, IaaS, spam filtering, PaaS, subscription

- Cloud technology delivers cloud-based ……. and ……..…. services.
- Public cloud gives businesses access to enterprise-level ……. .
- …….. functions like storage and computing.
- …….. is used to develop and run a website in the cloud or build applications.
- …….. is used for office productivity like email, work processing, number crunching, and online file sharing.
- Cloud computing provides …… based service.

IV. Work with the Internet

Surf the net and find information about the advantages and disadvantages of cloud technology.

http://www.claconnect.com/Risk-Management/The-Benefits-and-Risks-of-Cloud-Computing.aspx
http://www.business.qld.gov.au/business/running/technology-for-business/cloud-computing-business/cloud-computing-benefits
http://www.moorestephens.com/cloud_computing_benefits_challenges.aspx
http://mobiledevices.about.com/od/additionalresources/a/Cloud-Computing-Is-It-Really-All-That-Beneficial.htm

Group work:
Make two groups. One group will be in favor of cloud technology another group will be against it. Collect your arguments and be ready for the cross discussion.

APPENDIX 1

Useful Words/Phrases for successful communication

Personal opinion	**in my opinion/view** **to my mind** **from my point of view** **to my way of thinking** **I am convinced that…** **it strikes me that…** **it is my firm belief that…** **I am inclined to believe that..** **it seems to me that….** **as far as I am concerned** **I think that….**
To list advantages and disadvantages	**one advantage of….** **another advantage of….** **one other advantage of…** **a further advantage of…** **the main advantage of….** **the greatest advantage of….** **the first advantage of….**
To list points	**firstly** **first of all** **in the first place** **secondly** **thirdly** **finally** **to start/to begin with**
To list points to a specific sequence	**first/to start/to begin with/first of all** **secondly/after this (that)/afterwards/then/next** **finally/lastly/last but not the least**
To add more points to the same topic	**what is more** **furthermore** **also** **moreover** **apart from this/that** **in addition (to this/that)** **besides (this)** **…not to mention the fact that…..** **not only…..but….** **…both…and…**

To refer to other sources	**with reference to..** **according to…**
To express cause	**because….** **owing to the fact that…** **due to the fact that…..** **on the grounds that….** **since….** **as…** **in view of…** **because of….** **owing to…** **for this reason** **seeing that…** **…. that…**
To express effect	**thus** **therefore** **so** **consequently** **as a result** **as a consequence**
To express purpose	**…so that….** **…so as to/in order to….** **..in case…..** **..with the purpose/view/intention of….**
To emphasize a point	**indeed** **naturally** **clearly** **obviously** **of course** **needless to say**
To express reality	**it a fact that….** **in effect….** **in fact…** **as a matter of fact….** **actually…** **in practice…** **indeed….**
To give examples	**for instance, ….** **for example, ….** **…such as….** **….like……** **…particularly…..** **…in particular….** **....especially….**

To make general statements	**as a (general) rule,….** **by and large….** **generally,…** **in general,….** **on the whole…**
To make partially true statements	**up to the point,….** **to a certain extent/degree,. ……** **in a sense,……** **to a limited extent,…..** **in a way,….**
To express limited knowledge	**to the best of my knowledge……** **as far as I know…**
To state other people's opinions	**it is popularly believed that…..** **people often claim that……** **it is often alleged that……** **some people argue that…….** **many argue that……** **most people feel that…..** **some people point out that…** **contrary to this belief,……**
To make contrasting points	**yet** **although** **however** **even though** **nevertheless** **regardless of the fact that** **nonetheless** **in spite of the fact that** **but** **despite the fact that** **even so** **while** **still** **on the contrary** **on the other hand**
To express balance (the other side of the argument)	**opponents of….argue (claim, believe) that…** **while it is true to say that….., in fact…** **the fact that…..contradicts the belief (the idea) that…**
Negative addition	**neither…nor…** **nor** **neither** **either**
To express exception	**apart from** **but** **except (for)**
To clarify/rephrase	**in other words** **that is to say** **to put it another way**

APPENDIX 2

Words/Phrases for Presentations

Introducing yourself	**Let me introduce myself. My name is …** **I would like to tell you about …**
Outlining a presentation	**I am going to divide my talk into four parts.** **First I'll give you some basic information about …** **After that I'll talk about …** **Next, I want to look at …** **Finally, I'll …**
Giving background information	**I'll give you some background information about …** **Let's start with the background.**
Referring to the audience	**As you know** **As you can see**
Changing the topic	**Let's now move on to …** **Now I'll look at …**
Referring to visuals	**If you look at the graph … you can see …** **Could I draw your attention to the chart?** **If you look at the table you'll see …**
Ending	**Thank you very much for your attention.** **Thanks very much for listening to my talk.**
Inviting questions	**If you have any questions, don't hesitate to ask.** **I'll be glad to answer any questions.**

APPENDIX 3

Six hats of thinking

Useful lexis

job task	профессиональная задача
to cover significant professional issues	освещать важные профессиональные вопросы
to deliver a speech like professionals	выступать как профессионалы
to raise an important professional issue	поднять важный профессиональный вопрос
to cover all the points of the presentation	раскрыть все пункты презентации
to touch upon the topical issues	затрагивать актуальные проблемы
to get message across to	донести свои мысли до
to come apart with	расходиться с
to specify the blind sides	указать на слабые стороны
to specificate	детализировать
to ignore	не учитывать, не включить
to overlook	упускать из виду, игнорировать
to torpedo a project	провалить проект
to speak by the book	говорить с полным знанием дела
unconsidered issue	нерассмотренный вопрос
to have an obscure view of	неясно представлять себе
to introduce / make changes in	вносить изменения в

Useful words and word-combinations, questions and phrases
THE WHITE HAT *gives factual information about the presentation.* 1. What was the subject of the presentation? 2. How long did it last? 3. How many parts did it consist of? 4. Was it computer or paper presentation? 5. Was it coloured or black-white? 6. Was it joined or single-handed work? 7. How many people took part in the presentation?

THE YELLOW HAT *states positive points of the presentation.*

1. to manage to develop a successful professional report;
2. to cope with the job task professionally;
3. to do something in the original professional way;
4. to express one's own professional view concerning …;
5. to cover significant professional issues;
6. to professional knowledge/skills;
7. to deliver a speech like professionals (выступать как);
8. to raise important professional issues;
9. to cover all the points of the presentation;
10. to be rich in professional lexis;
11. to be worthy of special attention;
12. well-prepared, thought-provoking, informative, cognitive , thought-out;
13. to touch upon the topical issues;
14. to manage to develop a professional detail project;
12. to hold a special place;
13. to get message across to;
14. It is painstaking work (Это кропотливый труд);
15. It is of great interest to us.
16. It aroused our professional interest …
17. Your presentation is beyond comparison/words.
18. According to your point of view…

THE BLACK HAT *states negative points of the presentation.*

1. to fail to develop design concept;
2. sloppy and sketchy work – небрежная и поверхностная работа;
3. ill-considered (необдуманный); unsuccessful; confusing moment;
4. limited professional lexis;
5. to fail professional knowledge and skills;
6. to come apart with design requirements;
7. to specify the blind sides;
8. to fail to represent the graphical part;
9. to fail to specificate selection of needed materials ;
10. to leave out cost of works;
11. to communicate thoughts clearly;
12. to overlook the main project parts;
13.to torpedo a project;
14. to get message across to;
15. to have an obscure view of;
16. Your presentation failed.
17. Your report leaves much to be desired.
18. You failed to cover all the points of the presentation.

THE RED HAT *expresses all the feelings which the presentation arouses*

1. experience different/ contradictory feelings;
2. to create a feeling of surprise/admiration/disappointment– вызывать чувство удивления/восхищения/разочарования;
3. to arouse a professional interest;
4. to put into a business-like mood;
5. to have the personal touch;
6. to get to like the project;
1. I fail words to express my respect for your professional skills/ professionalism.
2. There was a disappointing/ confusing moment.
3. There was a moment that gladdened us very much.
4. You speak by the book.

THE GREEN HAT *suggests constructive ways to improve the presentation*

1. to improve considerably;
2. to make it more professional;
3. to specificate the project summary;
4. to meet requirements;
5. to analyse the building location*;*
*6.*to add building floor plans;
7. to specificate building materials;
8. I would suggest (doing) …

THE BLUE HAT *generalizes the points of view of all the hats and expresses the overall impression of the presentation*

1. to create a favourable/ unfavourable impression;
2. to develop a successful project;
3. to fail to consider siting and site analysis;
4. to create a feeling of admiration;
5. to improve considerably and add unconsidered issues.

[12: 91-93]

APPENDIX 4

Supplementary Reading

Part 1

Starting a Career in Databases
Finding a Job Without Experience
By Mike Chapple, About.com

If you've been reading the IT industry's help wanted ads recently, there's no doubt you've come across a number of ads seeking professional database administrators, designers and developers. Have you ever considered crossing over into these fields yourself? Have you found yourself wondering what it would take to make such a career move?

There are three main types of qualifications that will help you in your quest to obtain employment in the database industry (or any other IT field, for that matter). These are experience, education and professional credentials. The ideal candidate's resume describes a balanced mix of criteria from each of these three categories. That said, most employers don't have a predetermined formula that they use to determine which candidates are asked to interview and which resumes get thrown in the circular file. If your work experience reflects a long history of increasingly responsible positions in a related field, a potential employer might not be interested in the fact that you don't have a college degree. On the other hand, if you recently earned a graduate degree in computer science and wrote a master's thesis on database optimization you'd also probably be an attractive candidate despite the fact that you are fresh out of school.

Let's take a look at each one of these categories in detail. As you read through them, try to assess yourself against the criteria mentioned. Better yet, print out a copy of this article and a copy of your resume and give them to a trusted friend. Let them review your background in light of these criteria and give you an idea of where you would stand in the eyes of an employer. Remember: if it's not described properly on your resume in a manner that attracts the eye of an overworked hiring manager, you didn't do it!

Experience

Every job searcher is familiar with the novice's paradox: "You can't get a job without experience but you can't get experience without a job." If you're an aspiring database professional without any work experience in the field, what are your options?

If you truly have no work experience in the IT industry, your best bet is probably going to be seeking out an entry-level job working at a help desk or in a junior database analyst position. Granted, these jobs are not glamorous and won't help you buy that palatial home in the suburbs. However, this type of "in the trenches" work will give you exposure to a variety of tools and techniques. After you've spent a year or two working in this type of environment you should

be ready to either seek a promotion at your current place of employment or fire up the word processor to add this newfound experience to your resume.

If you have related IT experience, you have a bit more flexibility. You're probably qualified to find a higher-level position as a system administrator or similar role. If your eventual goal is to become a database administrator, seek out a smaller company that uses databases in their day-to-day operations. Chances are, they won't be too concerned about your lack of database experience if you're familiar with some of the other technologies they use. Once you're on the job, gradually begin to assume some database administration roles and before you know it you'll be a skilled database administrator through on-the-job training!

If neither of these options work for you, consider volunteering your database skills for a local nonprofit organization. If you spend some time making a few phone calls, you'll undoubtedly discover a worthy organization that could make use of a database designer/administrator. Take on a couple of these projects, add them to your resume and hit the FAX machine again!

Education

Five years ago, any technical recruiter would tell you not to even bother applying for a technical position in the database industry unless you held at least a Bachelor's degree in computer science. The explosive growth of the Internet created such a large demand for database administrators that many employers were forced to reconsider this requirement. It's now commonplace to find graduates of vocational/technical programs and self-taught database administrators with no more than a high school education holding positions once reserved for college graduates. That said, holding a computer science degree will definitely enhance your resume and make you stand out from the crowd. If your eventual goal is to move into a future management role, a degree is usually considered essential.

If you don't have a degree, what can you do right now to increase your marketability in the short term? You have two options:

First, consider starting a computer science degree program. Check with your local colleges and universities and you're bound to find one that offers a program compatible with your schedule. One word of caution: If you want to gain immediate resume-enhancing skills, be sure to take some computer science and database courses from the get-go. Yes, you do need to take history and philosophy courses to earn your degree, but you're probably better off saving them for later so you can increase your marketability to an employer now.

Second, if you are willing to shell out some bucks (or have a particularly generous employer) consider taking database classes from a technical training school. All major cities have some sort of technical education program where you can take week-long courses introducing you to the concepts of database administration on your choice of platforms. Expect to pay several thousand dollars a week for the privilege of this quick knowledge.

Professional Credentials

Surely you've seen the initials and heard the radio ads: "Get your MCSE, CCNA, OCP, MCDBA, CAN or some other certification today to make big bucks tomorrow!" As many aspiring database professionals discovered the hard way, earning a technical certification alone does not qualify you to walk in off the street and claim a job at your choice of employers. However, viewed in the context of a well-rounded resume, professional certifications can easily make you stand out from the crowd. If you've decided to take the plunge and seek a technical certification, your next step is to find a program that's appropriate for your skill level, willingness to learn and career aspirations.

If you're seeking a database position in a small-scale environment where you'll be working only with Microsoft Access databases, you might want to consider the Microsoft Office User Specialist program. This entry-level certification provides employers with an assurance from Microsoft that you're familiar with the features of Microsoft Access databases. The certification process involves only one examination and experienced Access users should be able to tackle it with a minimal amount of preparation. If you've never used Access before, you might want to consider taking a class or reading through a couple of certification-oriented books before attempting the exam.

On the other hand, if you've set your sights higher than working with Microsoft Access, you might want to consider one of the more advanced certification programs. Microsoft offers the Microsoft Certified Database Administrator (MCDBA) program for experienced Microsoft SQL Server administrators. This program involves taking a series of four challenging certification examinations. This program is definitely not for the faint of heart and successful completion requires real hands-on SQL Server experience. However, if you make it through the certification process, you'll be joining an elite club of certified database professionals.

Not interested in SQL Server? Is Oracle more your style? Rest assured, Oracle offers a similar certification, Oracle Certified Professional. This program offers a variety of certification tracks and specialties, but most require between five and six computed-based examinations that demonstrate your database knowledge in a variety of subject areas. This prestigious program is also extremely difficult and requires hands-on experience for successful completion.

Now you know what employers are looking for. Where do you stand? Is there a specific area where your resume is a little weak? If you've identified something specific you can do to increase your marketability, do it! The About Databases site provides all of the resources you'll need to get started. Check out our subject pages devoted to careers, certifications and training. If you need further advice or a little moral support, be sure to stop by our discussion forum and join the continuing conversation.

Good luck with your career in database administration! For some specific options, check out the Job Search Guide's Database Administrator Job Profile.

Part 2

Cloud Computing Advantages

Storage and Scalability

No more infrastructure investments or time spent adding new servers, partitioning silos – none of that mess. With the cloud, you basically have access to unlimited storage capability and scalability.

Backup and Disaster Recovery

Those days of tape back-up are long gone. Most cloud providers across service types and platforms offer comprehensive backup and recovery capabilities.

Mobility

Your cloud, anywhere. Whether it's your development platform, suite of office tools or custom content management system – cloud mobility enables access anywhere with a Web connection (just about).

Cost Efficiency

Aside from storage and infrastructure costs, just think about all the other costs you can minimize with cloud services – updating and managing software or applications, hiring and training new staff and even decreased on-site energy costs.

Enable IT Innovation

Probably the most understated benefit of the cloud – it is reshaping IT into a proactively innovative bunch that focuses a lot less on manual system administration, and a lot more on improving the technology. From integration, mobility to even user personalization, giving your IT the cloud can make their jobs much easier – and more enjoyable.

Cloud Computing Disadvantages

Control and Reliability

The biggest fear of cloud computing is found in its major benefit – the ability to outsource the IT burden to a specialized vendor or provider. Sure it sounds great, but with a move to the cloud you do give up the in-house control of a traditional IT department.

Security, Privacy and Compliance

Security can also be a concern in the cloud, particularly if you manage confidential data like customer information. Compliance in the cloud may also become an issue, which may require deploying a private cloud if you do have to secure private data.

Compatibility

Making sure every existing tool, software and computer is compatible with the Web based service, platform or infrastructure. While on-site IT may have a little more control in managing integration and compatibility, it is often "what you see is what you get" in the cloud.

Unpredicted Costs

Sure, the cloud can substantially reduce staff and hardware costs, but the price could end up being more than you bargained for. Migrating to the cloud is also an understated cost, and making sure the current systems that support your business while moving to the cloud could raise operating costs substantially.

Contracts and Lock-Ins

Traditional IT could be downsized, upsized, contracted-in and otherwise controlled by you. On-site hardware, software, infrastructure and platforms always carried some obligations, but now the cloud service provider, for the most part, has all the decision power. Vendor lock-in is also a major issue – as it was with old IT – and this could add up to cost and performance disadvantages later.

Part 3
THE METHODS TO ENSURE INTERNET SECURITY

Use a firewall

We strongly recommend the use of some type of firewall product for Internet security, such as a network appliance or a personal firewall software package. Intruders are constantly scanning home user systems for known vulnerabilities. Network firewalls (whether software or hardware-based) can provide some degree of protection against these attacks.

Don't open unknown email attachments

Before opening any email attachments, be sure you know the source of the attachment. It is not enough that the mail originated from an address you recognize. The Melissa virus spread precisely because it originated from a familiar address. Malicious code might be distributed in amusing or enticing programs. If you must open an attachment before you can verify the source, we suggest the following procedure:

- save the file to your hard disk
- scan the file using your antivirus software
- open the file

For additional protection, you can disconnect or lock your computer's network connection before opening the file.

Following these steps will reduce, but not wholly eliminate, the chance that any malicious code contained in the attachment might spread from your computer to others.

Don't run programs of unknown origin

Never run a program unless you know it to be authored by a person or company that you trust. Also, don't send programs of unknown origin to your friends or coworkers simply because they are amusing – they might contain a Trojan horse program. These programs seriously hurt Internet Security.

Disable hidden filename extensions

Windows operating systems contain an option to "Hide file extensions for known file types". The option is enabled by default, but you can disable this option in order to have file extensions displayed by Windows. After disabling this option, there are still some file extensions that, by default, will continue to remain hidden.

There is a registry value which, if set, will cause Windows to hide certain file extensions regardless of user configuration choices elsewhere in the operating system. The "NeverShowExt" registry value is used to hide the extensions for basic Windows file types. For example, the ".LNK" extension associated with Windows shortcuts remains hidden even after a user has turned off the option to hide extensions.

Keep all applications, including your operating system, patched

Vendors will usually release patches for their software when a vulnerability has been discovered. Most product documentation offers a method to get updates

and patches. You should be able to obtain updates from the vendor's web site. Read the manuals or browse the vendor's web site for more information.

Some applications will automatically check for available updates, and many vendors offer automatic notification of updates via a mailing list. Look on your vendor's web site for information about automatic notification. If no mailing list or other automated notification mechanism is offered you may need to check periodically for updates.

Turn off your computer or disconnect from the network when not in use

Turn off your computer or disconnect its Ethernet interface when you are not using it. An intruder cannot attack your computer if it is powered off or otherwise completely disconnected from the network.

Disable Java, JavaScript, and ActiveX if possible

Be aware of the risks involved in the use of "mobile code" such as ActiveX, Java, and JavaScript. A malicious web developer may attach a script to something sent to a web site, such as a URL, an element in a form, or a database inquiry. Later, when the web site responds to you, the malicious script is transferred to your browser.

The most significant impact of this vulnerability can be avoided by disabling all scripting languages. Turning off these options will keep you from being vulnerable to malicious scripts. However, it will limit the interaction you can have with some web sites.

Many legitimate sites use scripts running within the browser to add useful features. Disabling scripting may degrade the functionality of these sites.

Disable scripting features in email programs

Because many email programs use the same code as web browsers to display HTML, vulnerabilities that affect ActiveX, Java, and JavaScript are often applicable to email as well as web pages. Therefore, in addition to disabling scripting features in web browsers, we recommend that users also disable these features in their email programs. It is important to Internet security.

Make regular backups of critical data

Keep a copy of important files on removable media such as ZIP disks or recordable CD-ROM disks (CD-R or CD-RW disks). Use software backup tools if available, and store the backup disks somewhere away from the computer.

Make a boot disk in case your computer is damaged or compromised

To aid in recovering from a security breach or hard disk failure, create a boot disk on a floppy disk which will help when recovering a computer after such an event has occurred. Remember, however, you must create this disk before you have a security event.

Consult your system support personnel if you work from home

If you use your broadband access to connect to your employer's network via a Virtual Private Network (VPN) or other means, your employer may have policies or procedures relating to the security of your home network. Be sure to consult with your employer's support personnel, as appropriate, before following any of the steps outlined in this document.

Part 4

BEST PROGRAMMING LANGUAGES TO LEARN

With thousands of programming languages out there, it can be daunting to find a language to start with and a good course that assumes no prior knowledge. This post highlights programming languages that are good for beginning programmers and some resources to get started.

C

C is one of the most widely used programming languages and often used as an introduction to programming. It has influenced many languages that came after it, and knowledge of C will make learning later languages, such as Objective-C (used by Apple), easier. It influences many later languages you could want to learn, so starting with C will give you a deeper understanding of how computers work.

Java

Java is a higher level language which is designed to be compatible with any operating system. It has similar syntax to C and C++. It's a great programming language to start with because it is widely used and practical, however it won't give you as deep of an understanding of computer operation as a lower level language like C will.

C++

C++ bridges the gap between a language like C and Java as it has features of both low-level and high-level languages. It's another commonly used language that has a wide range of uses and compatibility. It's based off of C and adds object-oriented features. It has also influenced many other languages such as C# and Java.

Python

Python is a language that was designed with human readability in mind. Because of this, it doesn't take as much code to execute programs as other languages. It's a great, easy way to learn recurring concepts in computer science and has real world use in the creation of scripts.

Ruby

Ruby has similar function to Python but is less readable. It's more object-oriented than Python and is similarly designed with simplicity in mind. It has many applications, but is most often used for web applications.

HTML and CSS

HTML and CSS are used for webpage design. While these languages won't really help pave the way for learning more traditional programming languages, they are essential for webpage design. HTML (HyperText Markup Language) is a "markup language" which allows you to put content into a webpage whereas CSS (Cascading Style Sheets), is used to format and define the layout of a page.

C#

C# is primarily used for Windows applications in the .NET Framework. Learning C# is easy if you have experience in C, C++, or Java. The syntax is similar. It's popularity has been increasing as C# is used for third-party apps on Windows 8 or Windows Phone.

Objective-C

Objective-C is primarily used for Apple's operating systems, OSX (for Macs) and iOS (for iPhone and iPad). If you are looking to develop for Mac, Objective-C is the way to go. Apple provides lots of support for learning Objective-C through their developer program.

Javascript

Javascript (little relation to Java) is a common language used to make webpages more dynamic. With a syntax similar to C, it doesn't require a lot of effort to set up as it's built into web browsers. It's also used in other applications such as PDFs.

PHP

PHP is another language often used for web development, although it works well as a general-purpose language as well. PHP can be implemented directly into HTML. Those looking to learn PHP should already know HTML, CSS, and Javascript.

GLOSSARY

above the fold – above the fold on a website means that the object is visible without scrolling down after the page has loaded
ACC – a music file format that is of higher quality than MP3
acquisition time – measures how long a GPS takes to determine location
active matrix display – a type of a screen that produces high quality and clear images
actuator – a piece of equipment that uses energy to make a robot move
ad product – an advertising opportunity such as a banner that is located on a website
affiliate –a person or business that directs Internet traffic to a business's website in exchange for a percentage of sales
agent – a computer that observes and reacts to the conditions in a certain environment
algorithm – a rule or a set of rules that provides steps to take or questions to ask in order to solve a problem
anchor – a word, phrase, or image that includes a hyperlink and can be used for navigation
animated GIF – a combination of multiple GIF files in one advertisement to create animation
anti-antivirus virus – a computer virus that attacks and often disables anti-virus software
antivirus software – a program that locates and eliminates computer viruses
app – an application with a specific function that users download into their phones
appearance – is the way that a web page looks
Apple®- the company that produces Macs® and other computing products
applet – a small application that is embedded in a webpage
array – a group of disk drives that are connected and used as a single unit
Artificial Intelligence – the branch of science that seeks to create computers and robots that can reason, learn and solve problems independently
Assembler – a low level programming language that translates between computer programs
attachment – a file that is sent with an e-mail
attack – an attempt to get through computer security
audit log – a record of who has accessed a computer system and what actions they took
authenticate – to make sure that something is legitimate
automatic document feeder (ADF) – a device that feeds multiple pages into a scanner
automation – the use of programmed machines to perform tasks without human assistance
avatar – an image in a computer game that represents a person

back end – something that occurs at the end of a project or job
backdoor – a hidden way to get over security in computers and programs, sometimes internationally created
backup – to create a duplicate copy of data that is stores on a separate hard drive or computer system to prevent the loss of the data
bandwidth – a measurement of an amount of information that a computer network can send or receive
banner – a rectangular graphic on a website that advertises a business
barcode – an arrangement of lines and spaces that represent data
Basecamp®- a program offered by the company 37 signals that organizes projects and can be accessed by multiple users simultaneously
BASIC - a high level programming language that was invented in the 1960s and is declining in popularity at present
bill pay – a service provided by banks that allows customers to pay bills online automatically
bit – the smallest unit of computer data
bit size – measures the number of bits that the CPU can access at once
bitmapped graphic – an image that is made up of many small points
bitrate – a measurement of the amount of data that is processed
block – means to prevent access to something
blog – a personal website that is maintained by an individual
blog – a website where a person writes posts about his feelings, thoughts, activities, etc.
bluetooth – a wireless network that connects phone with other devices, such as a computer
boolean operator – narrows a database search with words such as “and”, “or” and “not”
broadband – a system that allows computers to transfer large amounts of information
bug – a flaw in a computer program
bus speed – a computer’s bus speed measures how many times the CPU can access a group of bits per second (it is measured in MHz)
C - a programming language that is used in program operating systems
C# - a programming language that was invented as an alternative to Java
C++ - a programming language that adds object-oriented programming capabilities to C
CAD (Computer-Aided Design) – the use of a computer to design things such as machines or buildings
calibration – the act of adjusting printers and scanners to display colors correctly
call waiting – a feature of some cell phones. It alerts you that someone is calling while you are on the line with someone else.
caller ID – a feature of some cell phones that tells you the name and number of the person calling you

capacity – the amount of space an MP3 player has to store files
card scanning – practice of capturing personal information stored on credit or debit cards, or passports
case – an enclosure that holds the computer's components
case based reasoning – the process of using information from previous experiences to solve new prooblems
CAT-5 cables – standard cables (category 5) that connect computers to networks
catalog – an inventory of books in a library
CBT (Computer-Based Training) – the use of a computer to train employees
CCD (charge-coupled device) – a light-sensitive chip that is used when capturing digital images
CDN (content delivery network) – a system of computers on a network containing copies of data that nearby users can access
CD-R – a blank CD that can have information written on it only once
CD-RW – a blank CD that can have information written on it multiple times
cell – a unit of a spreadsheet that holds a piece of information
cell phone – a wireless phone that sends and receives data at a certain frequency of energy
centralize – to bring things from multiple places and make them available in one location
click tracking – the process of counting and keeping track of the number of clicks an advertisement receives
click-through rate – the ratio of clicked advertisements to the number of advertisements that are viewed
clip art – electronic artwork that can be used in publications
cloud computing – the use of the Internet for software and other resources
code – a set of words and signs that give instructions to a computer
codec – a piece of videoconferencing equipment that codes signals going out and reads signals coming in
coding – the programming language that makes up a website
colour matching – the ability to create colours as users see them on the screen
colour-coding – practice of labeling things with different colours in order to tell them apart
command line – a word or phrase that makes a computer perform an operation
commission – the amount of money charged by a website for hosting advertisements
compatibility – the ability of one program or file to work with a different program
complier – changes human-readable source code into machine code that a CPU can understand
component- a part of something bigger
Computer Aided Manufacturing- the use of computers to control production equipment

computer language – **or programming language** **-** used by computer programmers to create instructions that a computer can understand
computer version – field and technology of making computers that have the ability to see
configuration – a group of settings that control how information is sent and received on a network
configure – means to modify something or arrange it so that it works in a certain way
content – material on a web page including text and graphics
cover letter – a document that explains why a person is applying for a job and why that person believes he or she is qualified for that job
CPC (cost per click-through) – a pricing model wherein rates are charged according to how many thousands of people view the advertisement
CPM (cost per 1,000 impressions) - a pricing model wherein rates are charged according to how many thousands of people view the advertisement
CPU (Central Processing Unit) -
crop – a cut off unwanted parts of an image
CSS (cascading style sheets) – a simple language that decides how a web page looks
customize– means to change something to meet individual needs and purposes
cyber – something related to computers or the Internet
cyber-criminal – a person who uses computers and the Internet to commit crimes such as identity theft and fraud
cycle – to cycle a device on a network means to turn it off and then turn it on again or to unplug it from its power source
dashboard – a display on a computer that shows commonly or recently used files and programs
data – the quantities, characters, or symbols on which operations are performed by a computer, being stored and transmitted in the form of electrical signals and recorded on magnetic, optical, or mechanical recording media
data compression – the process of storing information using less storage space by reducing the number of bits it takes up
data plan – a contract from a cell phone service provider that states what online services are available on a cell phone and how much that transfer of data will cost
data processing – the act of entering, using or manipulating data with computers
database – an organized collection of data in a computer system
decode – a file is to return it to its original format
dedicated system – includes all necessary components of videoconferencing together as a set
deployment – introduction of new software into a group of hardware
desktop – everything that a user sees on a computer screen

desktop computer - a personal computer in a form intended for regular use at a single location desk/table due to its size and power requirements, as opposed to a laptop whose rechargeable battery and compact dimensions allow it to be regularly carried and used in different locations

desktop publishing software - the creation of documents using page layout skills on a personal computer. Desktop publishing software can generate layouts and produce typographic quality text and images comparable to traditional typography and printing

detect – means to discover something

DHCP (Dynamic Host Configuration Protocol) – a system for computer networks to receive IP addresses and other configuration information

dial-up – an Internet connection using a modem and regular telephone lines

digital – electronically stored file as a series of ones and zeros

digital camera – a device that records images to be looked at on a computer

digital certificate - an attachment to an electronic message used for security purposes

digital zoom – it how a digital camera increases the display size of an image subject, reducing image quality

disc drive – reads information from a magnetic spinning disc

document – a file created on a word processing program

document sharing – a feature of some videoconferencing systems that allows everyone participating in the videoconference to look at and edit the same document

domain name – a set of words and letters that identify a company or address in the Internet

drag – to move around files, folders and icons on the desktop

duty – a task that someone is responsible for completing at a job

DVD (Digital Video Disc) – a storage disc that is read by a laser and can store media files such as videos and images

e-commerce – purchase or sale of items in the Internet

EDI (Electronic Data Interchange) – a standardized method for transferring data between different computer systems or computer networks. It is commonly used for e-commerce purposes, such as sending orders to warehouses, tracking shipments, and creating invoices

editor– a program that is used to create and change files

egress filter – prevents harmful software from leaving a network

elasticity – a computer system's ability to gain or lose computer resources as a user sees fit

electronic bulletin board – a shared file that can be used to spread information

electronic page – computerized version of a paper page

electronic paper – special digital screen that can be read like paper

embedded system – a combination of hardware and software designed to perform a specific task

Encoder – is a device that converts mechanical information into electronic signals
encoding – changing data so that no one can read it until it is changed again
end user – person that a software program or hardware device is designed for
Ethernet network – a high-speed network that links computers together
expansion cards – extra circuit boards that are used to increase the functions of a computer
external link – any link that goes to a different domain
Facebook – the most popular social networking site on the Internet that was co-created by Mark Zuckerberg and officially launched on February 4, 2004
false negative – takes place when anti-virus software incorrectly indicates that an infected file is clean
false positive – takes place when anti-virus software incorrectly indicates that a clean file has been infected with a computer virus
fan – moves cool air into a computer components inside the case
FAQ (Frequency Asked Questions) – a list of common questions with their answers
FAQs (Frequently Asked Questions) – a set of questions and answers that are provided on a website to give information that users commonly want to know
fault tolerant –the ability to continue functioning even though an error has occurred
field – a category in a database that holds a particular types of information
file archiving - the process of organizing computer files in an orderly way which lets users retrieve them easily
firewall – a program that restricts access on a network
flash – a media format that can be used to add videos, animations, and other media to a website
folder – holds and organizes files and documents in a computer
font – the style of typed characters in a document
fraud – an action that results in the loss of another person's property
free software license – allows users to change and distribute programs
frequency capping – the process of ensuring that a specific website visitor does not see the same advertisement an excessive number of times
fulfilment – performing activities to meet a need or requirement, for example, by providing a new IT service, or meeting a service request
function - an intended purpose of a configuration item, person,team, process or IT service. For example, one function of an e-mail service may be to store and forward outgoing mails, while the function of a business process may be to despatch goods to customers
functionality – the ability of different elements of a website to work together
gallery – a collection of icons or pictures that have been organized in a file or page
gap analysis – activity that compares two sets of data and identifies the differences

geo targeting – the process of showing advertisements in geographical area where they are relevant
graphic communications – the study of sending and receiving visual messages
graphical user interface (GUI) **–** an operating system that uses icons to represent programs and files and allow users to access to them
GUI (graphical user interface) – shows how a user interacts with a computer using images and text
hacker – a person who exploits computer hardware and software for their own purposes
handheld PC – a computer that is smaller, slower and less powerful than a laptop and used to browse the Internet and check e-mail
hang – means to prevent a website from loading all the way
hard drive – stores data electronically
hardware – refers to the physical parts of a computer
heat sink – transfers heat away from nearby components of a computer
host – a computer system that has a computer virus attached to it
HTML (Hypertext Markup Language) – a computer language that is used to conduct web sites on to the Internet
HTML (hypertext markup language) – a way to alter the look of text on web pages
http – part of Internet address that allows a computer to connect to the site
hyperlink – a word or image on a web page that you can click on to go to a different web page
IaaS(infrastructure as a service) – delivers such elements as servers and software over the Internet
icon – a picture that represents something on a computer
identity theft – process of stealing another person's personal information and using it for personal goals
imbed – means to become a part of something
infect– means to contaminate a computer with a computer virus
information security – the act or process of keeping information safe and preventing others from seeing it
information technology (IT) – the branch of engineering that deals with the use of computers and telecommunications to retrieve and store and transmit information
ingress filter – prevents harmful software from entering a network
install – means to add a new component or program to a computer or system
integrated circuit – a small chip that has several electronic devices attached to it
interactive – any device that responds to a user's commands
interface – provides a way for a user to interact with a computer
Internet – a worldwide network of computers
intruder – a person or program that attempts to access a network or computer without a permission

IP (Internet Protocol) address – a group of numbers that identify a computer on a network
ISP (Internet Service Provider) – a company that gives its customers access to the Internet, e-mail addresses and data storage
JPEG (Joint Photographic Experts Group) – a kind of a computer file used it to store pictures on a computer
keyboard – a set of buttons that is used to enter information into a computer
key-logger – a type of Trojan virus that tracks what keystrokes are entered into a computer
keyword – a term or phrase that is created to describe a webpage, so that it can be found in a search engine
laptop – a computer that is small enough to be carried around and used anywhere
latency – the time between the end of one computer communication and the start of another
layout – the way that items are arranged on a document
LCD (Liquid Crystal Display) – a type of a display that is created by liquid crystals and that is used in thin monitors
Linux® – a computer operating system
Linux® distribution – a collection of software for Linux®
local area network (LAN) – a network that connects a small group of computers
log in – means to provide a computer security system with the proper identification to use the computer
Mac® - a type of a computer from Apple®
macro – a short keystroke that performs a predetermined action
mainframe – a very powerful computer that can process large amounts of data
malware – a type of malicious, harmful software
mask – means to block information from being viewed
maximize – to make a window fill an entire computer screen or desktop
media player– used to play media such as videos and animations and can be embedded in a web page
message board – an online application that displays and organizes messages from users
meta tag – text that is used in the codes of a web page to provide information about the site to search engines
Microsoft Office®– a software package that offers word processing and spreadsheet programs
Microsoft®– a company that produces the Windows® operating system among other products
minimize – to make a window leave the screen without closing it
monitor – a screen that displays text, video, or images
motherboard – a firm slotted board onto which computer circuitry is attached

mouse – a small device that is used to move the cursor and select items on a computer screen
MPEG – a video format used to compress video into smaller files
multimedia – any type of media used on a webpage, including images, animations, and videos
multipoint videoconference – a videoconference among people in three or more different locations
natural language – use of phrases from everyday speech in search engines
navigation – the act of using and finding things on a website
network – a group of computers that are connected in order to share data or communicate
offset lithography – a common form of printing
online – connection of a computer to the Internet
Open Office® – an open source software package similar to Microsoft Office®
open source – software that can be distributed with the same basic source code
open system – a system that can use many different types of machines
operating system (OS) – software that controls a computer
operator – a symbol in a formula that performs a particular calculation, such as a plus sign (+)
optic scanner – a device that reads and records identification labels on medications
OS X® – an operating system from Apple® for Mac computers®
oscilloscope – a device that allows users to view the electrical voltage of a machine
overwriting virus – a computer virus that copies its code over and destroys the files of the original data
PaaS (platform as a service) – a service where users receive a computing operating system and related components over the Internet
page layout – the process of arranging text and graphics on a page
page view – a request from a computer to load a page of a web site. They can be counted to analyze the number of people viewing a website
password – a set of letters and/or numbers that allow someone to use or access something on a computer
patch – a piece of code that is used to fix a flaw in a computer program
pay as you go – a model for payment where customers pay according to how much they use a resource
PC (personal computer) – refers to a computer that runs Windows® operating system
PCI compliance (payment card industry) – is upholding certain security standards for accepting credit and other payment cards
PDA (personal data assistant) – a palmtop computer that functions as a personal organizer but also provides e-mail and Internet access
PDA (Personal Digital Assistant) **–** a small computer that is used to organize a person's schedules and information

performance turning – the act of adjusting a network or system soo that it works as efficiently as possible
peripheral – a device that can be connected to a computer
pharming – a process wherein thieves reroute people to a fake website that appears to be legitimate in order to trick them into giving away their personal information
phishing - a process wherein thieves trick people into giving away their personal information through e-mail
PHP – a scripting language that is used to create dynamic web pages
piggyback – means to gain unauthorized access to a computer system by taking advantage of the owner's legitimate connection
pixel – one of the small dots that make up an image on a computer or television screen
pointer – a small arrow that lets a user choose what to do on a computer
POP3 (Post Office Protocol) – a method that allows computer users to receive e-mail from a server
popup – an advertisement that suddenly appears in a new window in an Internet browser
power supply – delivers electricity to all parts of a computer
prepress – the process of preparing a document, magazine or book to be printed on a large scale
pretexting - a process wherein thieves trick peopleinto giving away their personal information over the phone
printer – a device that is used by a computer to transfer ink onto a paper
priority inversion – a delay that occurs in a computer system when a low-priority task is dealt with before a high-priority task
private cloud – a service offered to specific users who have purchased it and is not available publicly
processing speed – a measurement of how quickly a computer can perform tasks
processor – carriers out the instructions of computer programs
programmer– someone who writes computer programs
protocol– a set of rules that must be followed for the sake of security
public cloud – a service offered for any users in the Internet
purge– means to delete files or data from a computer
quality assurance – the act of checking products for problems
quarantine – means to place something or someone in complete isolation where they cannot access or infect anything or anybody else
query – a search that locates all information of a specific type in a database
RAM (Random Access Memory) – memory that can be quickly accessed
real time – if information is updated or shown in real time, it is updated or shown at the same time as new information is received
redesign – means to change website, add, or delete certain elements of it, but keep others

redundancy – the inclusion of duplicate components in a system to maintain production when one component fails
reliability – the probability that something will function properly and without any failures
replicate – means to make copies of oneself
resident extension – an add-on to a computer virus that causes it to become a part of the host computer's operating system
resident virus – a computer virus that becomes a part of a file or disk drive but does nothing until activated by a trigger event
resize – to make an image on a computer bigger or smaller
resolution – the ability of a computer or camera to produce a clear and detailed image
resume – a document that shows a person's education, work history and qualifications and is used when applying for a job
root directory – the main directory of a file system and is where all other branches of the system come from
rootkit – a type of a computer virus that is created to gain total control over a computer system by overwriting parts of its operating system
router – a device that allows more than one computer to connect to a network at the same time
SaaS (software as a service) – a service where users receive applications over the Internet instead of buying and installing them
Samba®– is a Linux® program that allows Linux® to act as a client on a Windows®-based network
SATA–an interface for connecting storage devices to a computer system
scalability – a system's ability to change size as needed in a given situation
scan – means to use a laser to read bar codes of a product and convert them to electronic signals
scanner – 1) a device that is used for transferring printed documents and pictures into a computer system;
2) a device used to capture personal information stored on credit and debit cards, and passports
script – a group of commands to be carried out automatically
search engine – a computer program that allows users to search for particular information, products, etc. in the Internet
security –a state of being safe from attack
security software – software that keeps a computer safe from threads such as computer viruses and cyber crimes
serial robot – a robot consisting of a single series of joints linked together
server – a computer that connects many computers to hardware
shortcut – an icon that has been moved to a desktop to make opening a file or program easier
SIMM (Single Inline Memory Module) – an older type of memory module that sends up to 32 bits of data to a CPU

site key – a security system that lets the bank and the account holder verufy their identities to one another in online transactions
site license – a permission that allows users to access software regardless of their location
Skype®– software that enables people to call one another using computers rather than telephones
smartphone– a cellular phone that also functions like a PDA
social networking – the activity of socializing online with other people via networking sites, blogs, forums, etc.
software – a computer or instruction that makes a computer perform a specific task
sort – to arrange information in a database in a specific way
spam – unwanted e-mail, like advertisements, sent to large groups of people
spell check – a function that checks a document for spelling errors
spreadsheet – a computer program that performs calculation
spyware – a type of a computer program that gathers someone's personal information without their knowledge
SSL connection (Secure Sockets Layer) – a connection between two servers that encrypts information so that no one else can monitor or access the information exchanged
STMP (Simple Mail Transfer Protocol) – a method that allows users to send e-mails to other users
sub-pixel rendering – a process that increases the clarity of a text on certain displays
subscription – the agreement to use something, often requiring a fee
sweep – means to search a computer system for viruses
system administrator – a person whose job is to manage and maintain a computer system
system requirements – hardware or software needed to run a program
T-1 – a type of a line used by businesses that connects many users at once to the Internet
T-3 – a powerful line made of 28 T-1 lines
table – a single collection or arrangement of information in a database
TCP/IP protocol – a set of rules that determine how a computer connects to a network or the Internet
technical support – task of helping people to use and understand technology
telecommunicate – means to work at a location away from the main office by using technology
template – blank layout for certain types of documents
terminal – a computer that allows users to input command lines
text – means to send someone a text message
text message – a short, written message that a person sends to and from a cell phone
toggle – means to move from one file or setting to another

touch screen – a monitor that lets users interact with computer by touching the screen
touchscreen – a display on some cell phones or i-pads that users tap to access its features and applications
tour – a series of web pages that offer information about a product or site
traffic – total number of users that go to and view a website in a certain amount of time
transparency adapter – a device that is used with a scanner to capture see-through documents like slides
Trojan horse – a computer program that appears to be beneficial but is actually malicious
troubleshooting – refers to the process of identifying and fixing technical problems
trust logo – a seal that appears on a web page and means that the security of information on that page is assured by accredited company
typography – a computer's use of typefaces
Ubuntu® – an operating system based on Linux®
Unix® – a specific type of computer operating system
UPC (universal product code) – a 12-digit number used to identify consumer items
upgrade– to improve something like a computer program or a type of service
upload – means to transfer a file from a computer or device to the Internet or to another device such as an MP3 player
URL (Uniform Resource Locator) – text and symbols that form a web address
usability – easiness with which a person uses a website
USB (Universal Serial Bus) – a commonly used type of connection or port to connect a peripheral to a computer
USB flash drive – a portable flash memory system that uses a USB interface to connect to a computer and transfer information
user-friendly – something that is easy to access and use
username – a name or code that identifies a person on a computer and allows that person to access his files
utility computing – a way of selling computer use as a metered service like water and electricity
vendor – someone who distributes programs and utilities
video bridge – a device that allows people to hold multipoint videoconferences, it connects calls from several different locations
video subsystem – a part of a computer that presents visuals on the screen
videoconference – a meeting or conversation between two or more people in different locations using computer technology
virtual memory – a method of computer data storage when it stores data on its hard drive instead of in the RAM
virtual world – an online reality where users can meet and ineract with other people or computer players

virus – a harmful computer program file that takes up residence in a computer without the owner's knowledge or permission
virus removal software – destroys computer viruses, removing them from files they have infected
visibility – easiness with which users find a website with the help of search engines, based on how many other websites link to it
visual basic – a simple programming language with a graphical component
voice activation – a feature of some cell phones that lets users dial a number by voice instead of by hand
voice-mail – a feature that lets someone listen to or leave an electronic spoken message on a cell phone
VPN (virtual private network) – a way to encrypt a connection when someone uses remote access
waypoints – locations using wireless signals instead of a physical connection
web browser – a computer program that allows people to look at web pages in the Internet
web design – act or practice of determining how to use a website looks
web developer – someone who builds a website
web development – act or practice of determining how to use a website works
web host – a company that provides space for a web site in the Internet
web page analysis – a process wherein the security of a website is determined in order to help computer users know whether or not the website is safe
web portal – a webpage that displays information gathered from several different places
web site – a collection of related pages in the Internet that contains information, pictures, etc. and is usually published by a person, group, or company
web-based – something that is available in the Internet instead of on a CD
webcam – a small camera that connects to a computer and broadcasts sound and video in the Internet
webmail – an e-mail device that people access through a web browser and which sends and receives e-mail but does not store it on computers
Wi-Fi (Wireless Fidelity) – a type of connection using wireless signals instead of a physical connection
window – a rectangle on a desktop of a computer monitor that displays a file or program and which connects are independent of a desktop screen
Windows® – an operating system created by Microsoft® and is used in many PCs
wireless Local Area Network (WLAN) – a network that connects computers to a network without cables
wireless router – a device that forwards data as a wireless signal
word processing program – a program that helps to write on computers
worksheet – a single page of a spreadsheet
workstation – a very fast computer that runs powerful work programs
worm – a type of malicious software that replicates itself through e-mails

www (World Wide Web) – system of web pages, information, pictures, etc. that is available

XML (extensive markup language) – a programming language that is used to encode web pages

zip drive – a removable disk storage system that is typically used to transfer data

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ЗАКЛЮЧЕНИЕ

Авторы выражают надежду на то, что представленное учебное пособие будет интересным как для преподавателей, планирующих свою педагогическую деятельность со студентами, изучающими информационные технологии, так и для студентов бакалавриата по направлениям подготовки 230700 «Прикладная информатика» и 230400 «Информационные системы и технологии».

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Авторы желают продуктивной работы всем участникам педагогического процесса – преподавателям и студентам, и будут признательны за высказанные замечания и пожелания, направленные на электронные адреса elenaaleshugina@mail.ru и dariashokina@list.ru.

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ПРОФЕССИОНАЛЬНО ОРИЕНТИРОВАННЫЙ АНГЛИЙСКИЙ ЯЗЫК ДЛЯ СПЕЦИАЛИСТОВ В ОБЛАСТИ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ

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