Е. А. Алешугина, Д. А. Лошкарева

ПРОФЕССИОНАЛЬНО ОРИЕНТИРОВАННЫЙ АНГЛИЙСКИЙ ЯЗЫК ДЛЯ СПЕЦИАЛИСТОВ В ОБЛАСТИ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ

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Рецензенты:

О. И. Ваганова – канд. пед. наук, доцент кафедры профессионального образования и управления образовательными системами ФГБОУ ВО «Нижегородский государственный педагогический университет имени Козьмы Минина»

Л. В. Павлова – канд. пед. наук, зав. кафедрой художественных технологий Института пищевых технологий и дизайна Филиал ГБОУ ВО НГИЭУ

В пособии обобщен и изложен опыт преподавателей по использованию активных методов обучения при организации профессионально ориентированного иноязычного общения студентов, будущих специалистов в области информационных технологий. Учебное пособие состоит из разделов, освещающих различные аспекты информационно технологической деятельности с использованием иностранного языка.

Предназначено при подготовке к практическим занятиям (включая рекомендации по организации самостоятельной работы) по дисциплине Б.1.03 Иностранный язык для студентов направления подготовки 09.03.03 Прикладная информатика (профили: Прикладная информатика (в экономике), Прикладная информатика (в менеджменте), Прикладная информатика (в юриспруденции); 09.03.04 Программная инженерия и направления подготовки 09.03.02 Информационные системы и технологии, а также преподавателей, интересующихся активными методами и формами обучения.

СОДЕРЖАНИЕ

ВВЕДЕНИЕ

Данное учебное пособие предназначено для обеспечения дисциплины «Иностранный язык» для студентов бакалавриата по направлениям подготовки 09.03.03 Прикладная информатика, 09.03.04 Программная инженерия и 09.03.02 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 ННГАСУ, рецензентам, преподавателям профильных кафедр ННГАСУ и студентам за помощь и ценные замечания в процессе подготовке данного пособия.

1. JOBS IN COMPUTING

Lead in

What IT specialists do you know?
What are the responsibilities of different computer specialists?
Make a cluster and present different types of IT jobs and their responsibilities.

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 recommend process improvements,
- to ensure system reliability, security, integrity and performance,
- to conduct computer diagnostics,
- to extract and analyze information,
- to have good communication, persuasion and sensitivity,
- to deal with project management and problem solving,
- to have patience and diplomacy, to stay calm under pressure,
- to be able to work in a team,
- to have mobility and business awareness.

Reading:

Match the descriptions of different jobs in computing with the types of specialists.

BUSINESS ANALYST   SOFTWARE ENGINEER   SYSTEMS ANALYST SOFTWARE TESTER   TECHNICAL CONSULTANT   NETWORK ENGINEER TECHNICAL SUPPORT MANAGER   WEB DEVELOPER   COMPUTER PROGRAMMER   DATABASE ADMINISTRATOR
1.The work of a _____ typically includes designing and programming system-level software: operating systems, database systems, embedded systems and so on. They understand how both software and hardware function. The work can involve talking to clients and colleagues to assess and define what solution or system is needed, which means there's a lot of interaction as well as full-on technical work. _____ are often found in electronics and telecommunications companies.
2._____ investigate and analyze business problems and then design information systems that provide a feasible solution, typically in response to requests from their business or a customer. They gather requirements and identify the

costs and the time needed to implement the project. The job needs a mix of business and technical knowledge, and a good understanding of people. It's a role for _____ to move into and typically requires a few years' experience from graduation.

3.These are the professional troubleshooters of the IT world. Many _____ work for hardware manufacturers and suppliers solving the problems of business customers or consumers, but many work for end-user companies supporting, monitoring and maintaining workplace technology and responding to users' requests for help. Some lines of support require professionals with specific experience and knowledge, but _____ can also be a good way into the industry for graduates.

4._____ is one of the more technically demanding IT jobs. Broadly speaking the role involves setting up, administering, maintaining and upgrading communication systems, local area networks and wide area networks for an organization. _____ are also responsible for security, data storage and disaster recovery strategies. It is a highly technical role and you'll gather a wide range of specialist technical certifications as you progress. A telecoms or computer science-related degree is needed.

5._____ covers everything to do with building websites and all the infrastructure that sits behind them. The job is still viewed as the trendy side of IT years after it first emerged. These days _____is a pretty technical job and involves some hardcore programming as well as the more creative side of designing the user interfaces of new websites. The role can be found in organizations large and small.

6.Bugs can have a massive impact on the productivity and reputation of an IT firm. _____ try to anticipate all the ways an application or system might be used and how it could fail. They don't necessarily program but they do need a good understanding of code. _____ prepare test scripts and macros, and analyze results, which are fed back to the project leader so that fixes can be made. _____ can also be involved at the early stages of projects in order to anticipate pitfalls before work begins. You can potentially get to a high level as a_____.

7.Typically the _____ provide technical expertise to, and develop and implement IT systems for, external clients. They can be involved at any or all stages of the project lifecycle: pitching for a contract; refining a specification with the client team; designing the system; managing part or all of the project; after sales support or even developing the code. A technical degree is preferred, but not always necessary.

8._____ are true midfielders, equally happy talking with technology people, business managers and end users. They identify opportunities for im-

provement to processes and business operations using information technology. The role is project based and begins with analyzing a customer's needs, gathering and documenting requirements and creating a project plan to design the resulting technology solution. _____ need technology understanding, but don't necessarily need a technical degree.

9._____ are responsible for the storage, organization, and management of electronic data. Their job is connected with developing and maintaining the computer database of various business organizations. In performing their duties, _____ install and test new database management systems. They carry out assessments to identify user needs and develop database solutions effective in meeting those needs. They also implement security plans to maintain database integrity and protect against cyber-attacks. _____ ensure company database systems function efficiently and meet the requirements of an organization.

10._____ write and test code that allows computer applications and software programs to function properly. They turn the program designs created by software developers and engineers into instructions that a computer can follow. In addition, they test newly created applications and programs to ensure that they produce the expected results. If they do not work correctly, computer _____ check the code for mistakes and fix them. They work closely with software developers, and in some businesses their duties overlap. When such overlap occurs, they can do work that is typical of developers, such as designing programs.

Study this job advertisement.

IT Support Officer

• Educated to degree level, candidates should have at least two years' relevant experience.
• We need a highly-motivated individual, able to support approximately 30 networked PCs. The role is very much 'hands-on', and so it is essential that you have a good understanding and experience of Microsoft Office, Novell networks, Email systems, TCP/IP, hardware and virus-protection tools.
• You should be able to communicate well with users and external contractors and to make a contribution to the training of all PC users.
• The successful candidate must work well under pressure and as a team member.

Which of the three candidates do you think is the best applicant?

Applicant 1

BSc Computing Science. Graduated this year. · Knowledge of a variety of operating systems including Unix, Novell, and Windows XP. · Experience in programming in C, C++, Pascal, Java, Delphi and Visual Basic. · Familiar with a wide variety of hardware and software packages. · Has taught a lot of fellow students how to use computers. Highly motivated. · No work experience.

Applicant 2

Higher National Diploma in Information Technology. Trained in using network systems including Novell and Windows XP. Experienced user of Microsoft Office programs and Internet systems. Knowledge of setting up and troubleshooting most types of computers and peripherals. Gets on well with others and can work as part of a team. Keen to gain experience and develop a career in computing. Two years' part-time summer experience working in a computer repair workshop

Applicant 3

Higher National Certificate in Computing. Employed for 3 years in a computing sales team advising customers on purchase requirements and helping them troubleshoot problems with installed systems. Trained in using Unix and Novell network systems and a wide variety of hardware. Experienced in many PC packages including most Microsoft products. Good communicator, experienced in dealing with the public and working as part of a team. Highly motivated.

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

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.

•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 <u>devising</u> 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.

• <u>Resolving</u> software issues

• Setting priority of all projects

• <u>Maintaining</u> 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.

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?

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

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.

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

2012 – 2016 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.

2010 – 2012 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

2008 – 2010 GCSE at Harrow High School

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

2004 – 2008 Diploma of Vocational Education in Art and Design

Experience

15.08.15 – 15.08.2018 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.

12.03.13 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

21.06.08 - 02.07.10 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

I'm writing to express my interest in your posting for an experienced Database Administrator.

As a certified Microsoft Database Administrator with a Bachelor's degree in computer science and hands-on experience overseeing the design, development, and maintenance of various database systems, *I believe my skills perfectly suit your needs*.

I enjoy solving large, complex data problems enjoy the process of building and determining a solution.

I am able to quickly identify new resolutions that will not only help solve major business problems but also ensure that the business maintains local, federal and business sector compliance given my extensive research abilities and deep indus-

try knowledge.

The requirements and skills listed on your website closely match my background and future career goals. I hope to get ahead in my role as a Database Administrator and have begun pursuing advancement by enrolling in a Master's of Science in computer science at ABC University. ***I believe your company will be an ideal place to apply my education and work experience.***

My CV is attached, and I'd be happy to pass along a list of past projects. I can be reached anytime at 555-555-5555 or name@gmail.com. Thank you for your time and consideration. ***I look forward to speaking with you about this opportunity.***

Sincerely,
Tom Brown

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\attach {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.

2. HISTORY OF COMPUTERS

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 devices are depicted here?
    How are these things connected with the computer?
    What are their functions?
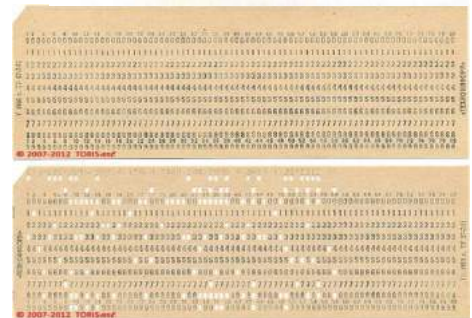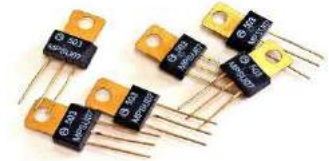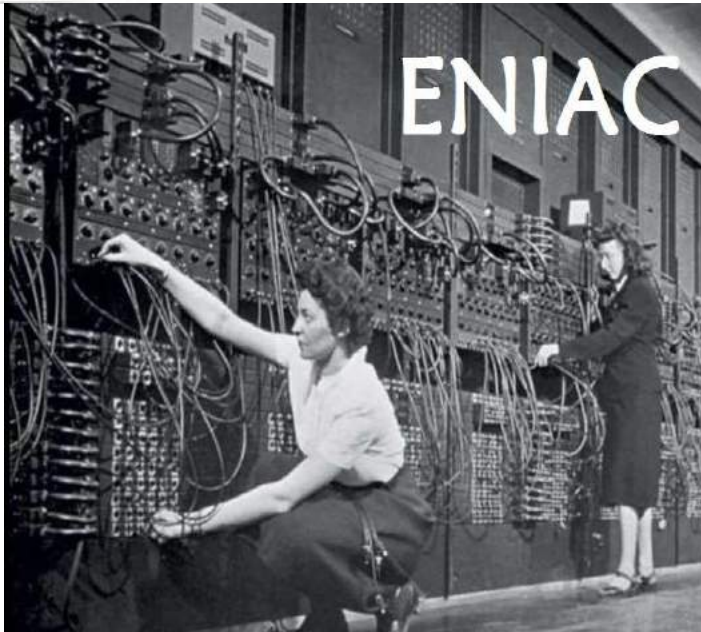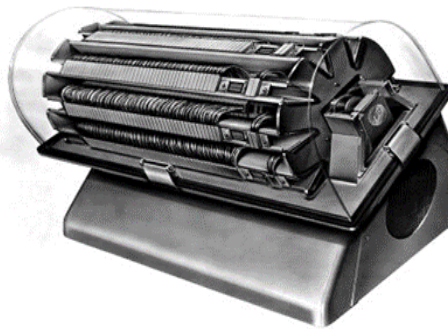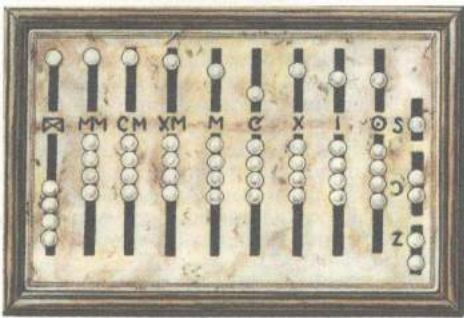
Reading
1. While reading mark the information:
I knew this fact   (V)
I didn't know this   (+)
I was wrong about this (-)
I need some more information about this (?)

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.

√	+	-	?
I knew this	I didn't know this	I was wrong about this	I need some more information about this

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.

abacus
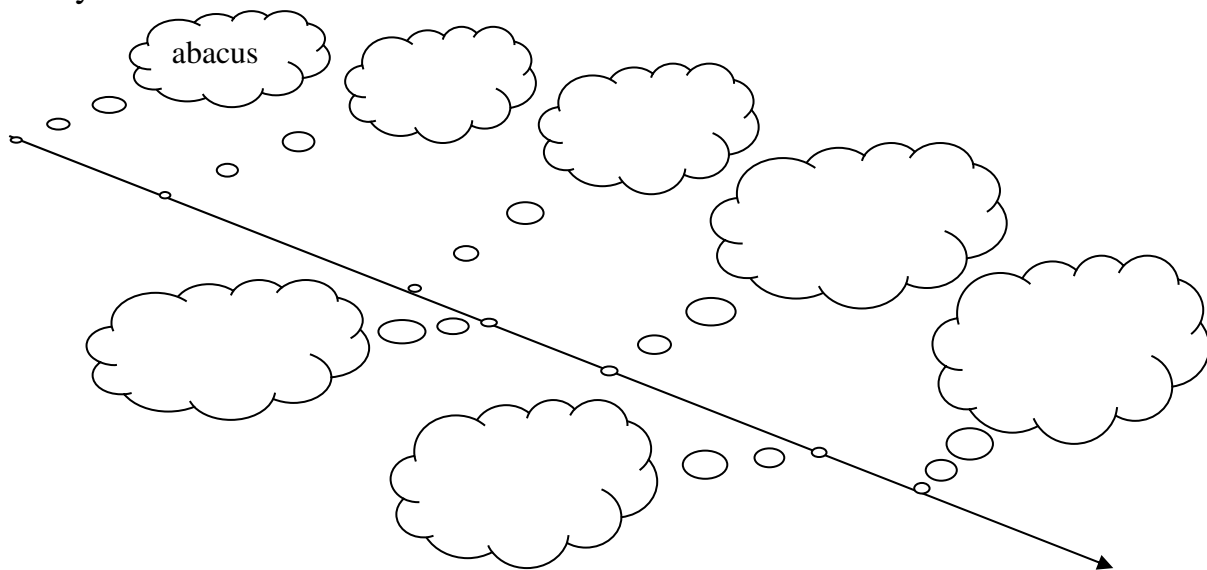
What is each stage characterized by?
What were the achievements of each generation?

What were their advantages and disadvantages?

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.computerhistory.org/timeline/

http://www.computerhistory.org/

http://history-computer.com/

https://www.britannica.com/technology/computer/History-of-computing

http://www.computerhope.com/history/

http://www.pbs.org/nerds/timeline/

3. COMPUTER SECURITY

Lead in
What can disturb your work on computer?
In groups make a cluster of problems.

Cyber crimes

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.

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

Columbus Man Sentenced for Cyberstalking Local Law Enforcement Officer

Anderson Man Charged with Criminal Copyright Infringement

Defendant Sentenced in Online Piracy Crackdown

California Man Convicted of Directing Cyber-Attack Against Oklahoma Business

Philadelphia Man Charged with Sending Harassing Texts

Two Michigan Residents Plead Guilty to Criminal Copyright Infringement

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; Source Code Used for Military Combat Simulation and Banned for Export Without License

Utah Man Sentenced to 24 Months in Prison for Bringing Down Wireless Internet Services

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

Ex-Employee Sentenced for Stealing Personal Information from the Cloud

Nigerian National Charged in Phishing Scheme That Victimized Groton School Employees

Eleven Defendants Charged in Manhattan Federal Court with Multi-Million-Dollar Identity Theft and Fraud Scheme

Five Florida Residents Admit to Fraud Charges Involving Gas Station Skimmers

Man Sentenced for Developing and Distributing Prolific Malware

Houston Man Indicted by Federal Grand Jury for Cyber Attack on Los Angeles County Superior Court

• Hacking	
• Scamming	
• Computer Viruses	
• Copyright Infringement	
• Piracy Crackdown	
• Malware	
• Espionage	
• Money Laundering	
• Phishing	
• Social Engineering	
• Cyber Attack	
• Exploit Kits	
• Cyberstalking	
• Ransomware	
• Botnets	
• Malvertising	

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

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...

FTC vs spammers

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. The President signed a bill Friday that gives the commission broader authority to *pursue*...

Taking on windows security

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

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, and they're...

Metasploit publishes hacker tools, Q&A

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...

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.
- Utah man convicted … directing cyber-attack against banks.
- New York resident admit … fraud charges involving phishing.
- Man indicted … federal jury … cyber attack on county superior court.

2. Find synonyms for the following words. Use them in the sentence of your own:
Accuse, convict, consent, crime, threatening, guarantee, seek, give, weakness, 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

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.

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:

https://www.infosecurity-magazine.com/cybercrime/
https://www.digitalcare.org
https://www.actionfraud.police.uk/support-and-prevention/protect-yourself-from-fraud
http://www.crime-research.org
http://www.infosec.gov.hk/english/crime/preventive.html
http://cybercrimesecurityforum.org/

4. INTERNET APPLICATIONS

Lead in
What do people do with the help of the Internet?
Make a list of the typical Internet applications.
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.

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.

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 programs 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 ………

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.

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?

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".

5. *COMPUTER TOMORROW*

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.

THE TELEPHONE HAS TOO MANY SHORTCOMMINGS TO BE SERIOUSLY CONSIDERED AS A MEANS OF COMMUNI-CATION. THE DEVICE IS IN-HERETLY OF NO VALUE TO US.
Western Union internal memo 1876

The wireless music box has no imaginable commercial value.
Business response to appeal for investment in radio during the 1920s

Television will never be a serious competitor for radio because people must sit and keep their eyes glued to a screen; the average American family hasn't time for it.
The New York Times, 1939

I think there is a world market for maybe five computers.
Thomas Watson, chairman of IBM, 1943

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

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?

6. PROGRAMMING LANGUAGES

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.
	i) One of the truly greatest perks of working with this language is that it's completely open-sourced and free.
Ruby	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.

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 "boiler-plate" 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 ac-cess/manipulate the most important computer parts like the filesystem, graphics, and sound for any fairly sophisticated and modern program—that can run on any operat-ing system.

Developing a deep understanding of Java takes a lot of time and strenuous ef-fort, as it requires deep knowledge of programming and how it works on a highly nu-anced 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.

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.

7. FAMOUS PEOPLE IN COMPUTING

Lead in
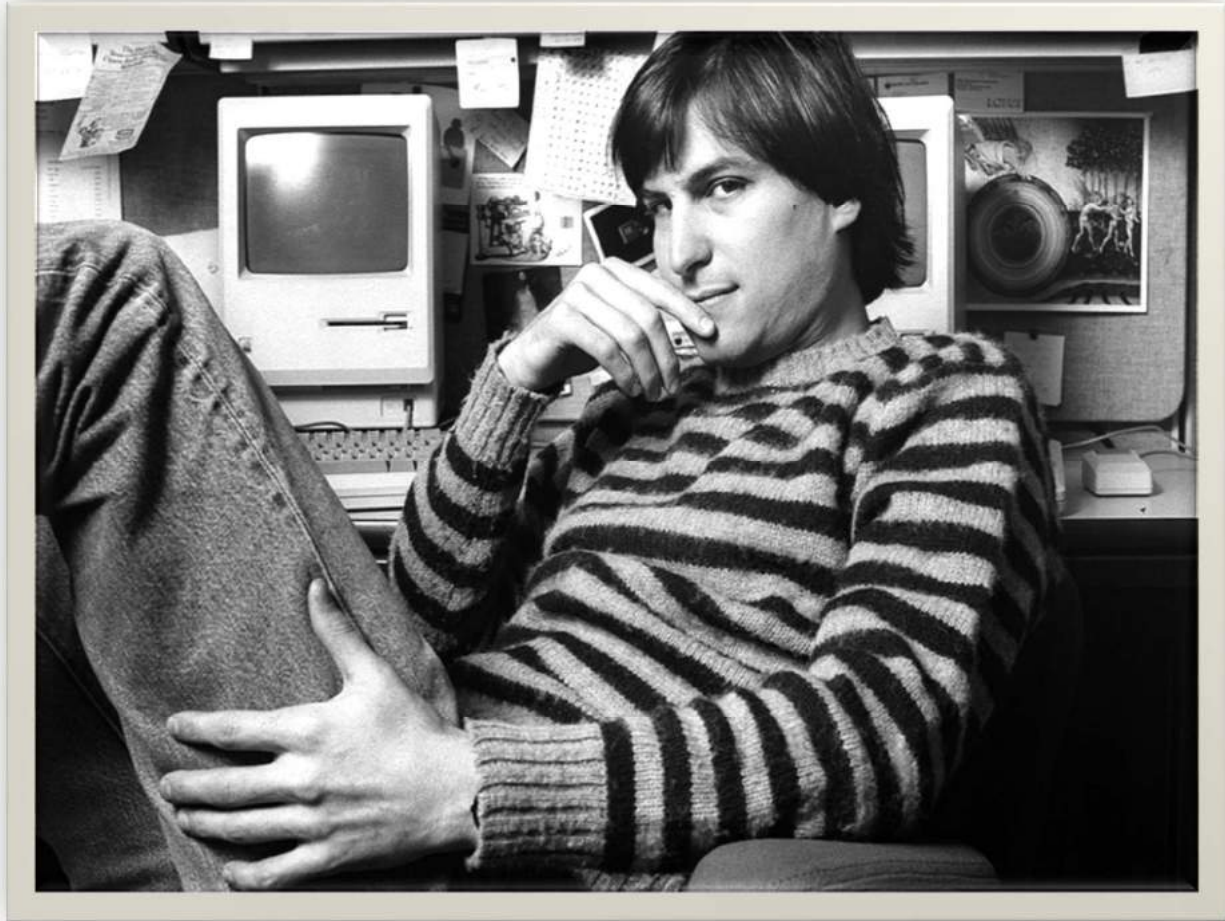
Group work (home group):

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

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 market-ed 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 compa-ny 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 compa-ny. Pixar Studios went on to produce wildly popular animation films such as *Toy Sto-ry*, *Finding Nemo* and *The Incredibles*. Pixar's films have netted $4 billion. The stu-dio merged with Walt Disney in 2006, making Steve Jobs Disney's largest sharehold-er.

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 opera-ble form of pancreatic cancer. Instead of surgery, Jobs chose to alter his pescovege-tarian diet while weighing Eastern treatment options. For nine months, Jobs post-poned surgery, making Apple's board of directors nervous. In 2004, he had a success-ful 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 infor-mation 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.
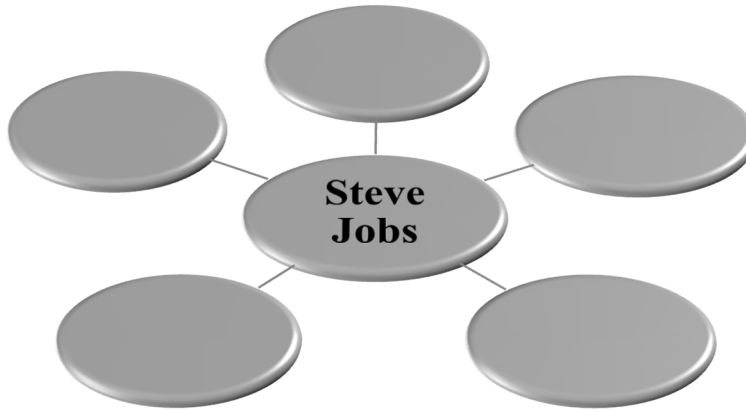
Vocabulary focus:

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

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

8.APPLE VS MICROSOFT

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
•	•
•	•
•	•
•	•
•	•

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.

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.

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.

9. CLOUD TECHNOLOGY

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.
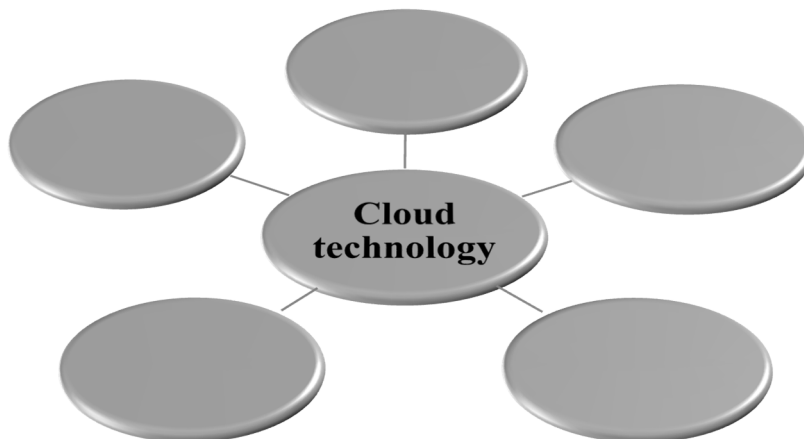
Reading

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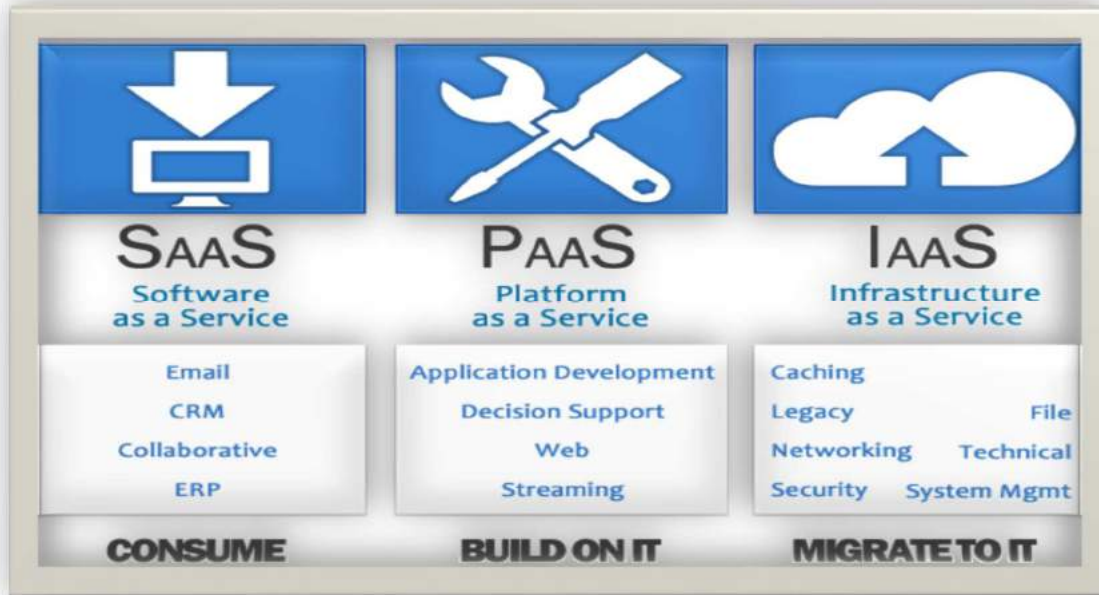
There is a huge opportunity for growth of a small business when using cloud services.

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.

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

57

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.

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.

10. DATABASES AND DATABASE MANAGEMENT SYSTEMS

Lead in
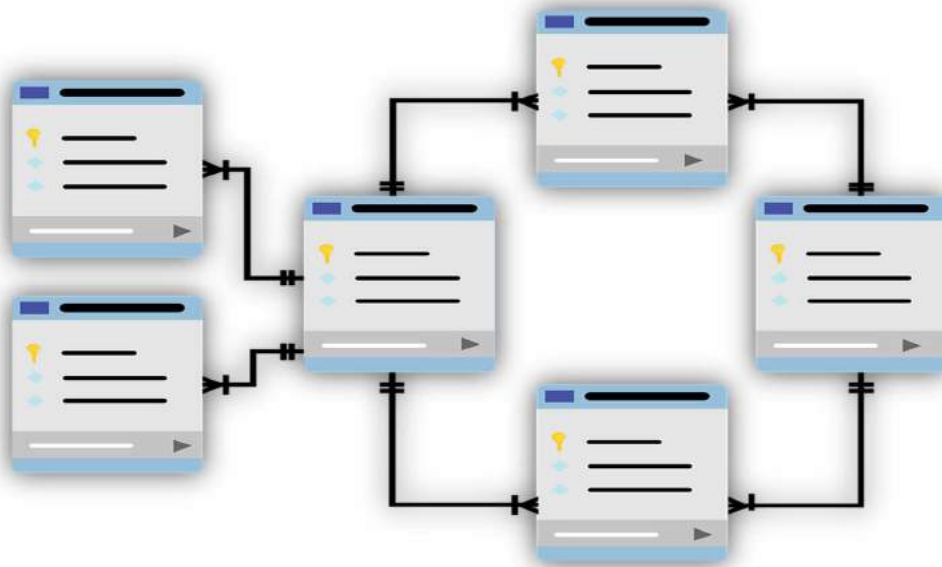
1. Answer the following questions
- What is a database?
- What kind of information can you find in databases?
- What is the purpose of database management system?
- What examples of database management systems do you know?
- What are their differences?

Databases and database technology have a major impact on the growing use of computers. It is fair to say that databases play a critical role in almost all areas where computers are used, including business, electronic commerce, engineering, medicine, genetics, law, education, and library science.

A database is a collection of related **data**. By data, we mean facts that can be recorded and that have implicit meaning. For example, consider the names, telephone numbers, and addresses of the people you know. You may have recorded this data in an indexed address book or you may have *stored* it on a *hard drive*, using a personal computer and software such as Microsoft Access or Excel. This collection of related data with an implicit meaning is a database.

A database has the following implicit properties:

- A database represents some aspect of the real world, sometimes called the **miniworld** or the **universe of discourse (UoD)**. Changes to the **miniworld** are reflected in the database.

- A database is a *logically coherent* collection of data with some *inherent meaning*. A *random assortment* of data cannot correctly be referred to as a database.

- A database is designed, built, and populated with data for a specific purpose. It has an intended group of users and some *preconceived applications* in which these users are interested.

In other words, a database has some source from which data is *derived*, some degree of interaction with events in the real world, and an audience that is actively interested in its contents. The end users of a database may perform business transactions (for example, a customer buys a camera) or events may happen (for example, an employee has a baby) that cause the information in the database to change. In order for a database to be accurate and *reliable* at all times, it must be a true reflection of the **miniworld** that it represents; therefore, changes must be reflected in the database as soon as possible.

A database can be of any size and complexity. For example, the list of names and addresses referred to earlier may consist of only a few hundred records, each with a simple structure. On the other hand, the computerized catalog of a large library may contain half a million entries organized under different categories – by primary author's last name, by subject, by book title – with each category organized alphabetically. A database of even greater size and complexity is maintained by the Internal Revenue Service (IRS) to monitor tax forms filed by U.S. taxpayers. This huge amount of information must be organized and managed so that users can *search* for, *retrieve*, and *update* the data as needed.

A database may be *generated* and *maintained* manually or it may be computerized. For example, a library card catalog is a database that may be created and maintained manually. A computerized database may be created and maintained either by a group of application programs written specifically for that task or by a database management system.

A **database management system** (DBMS) is a collection of programs that enables users to create and maintain a database. The DBMS is a general-purpose software system that *facilitates* the processes of defining, constructing, manipulating, and *sharing* databases among various users and applications. Defining a database involves specifying the data types, structures, and constraints of the data to be stored in the database.

An application program *accesses* the database by sending *queries* or *requests* for data to the DBMS. A query typically causes some data to be retrieved; a transaction may cause some data to be read and some data to be written into the database.

Other important functions provided by the DBMS include *protecting* the database and maintaining it over a long period of time. Protection includes system protection against *hardware* or *software malfunction* (or crashes) and security protection against unauthorized or *malicious access*. A typical large database may have a life cycle of many years, so the DBMS must be able to maintain the database system by allowing the system to evolve as requirements change over time.

It is not absolutely necessary to use general-purpose DBMS software to implement a computerized database. We could write our own set of programs to create and maintain the database. In either case – whether we use a general-purpose DBMS or not – we usually have to deploy a considerable amount of complex software. In fact, most DBMSs are very complex software systems.

WHAT TO LOOK FOR IN A DATABASE?

Although database management systems all perform the same basic task, which is to enable users to *create*, *edit* and *access* information in databases, how they accomplish this can vary. Additionally, the features, functionality, and support associated with each management system can differ significantly.

When comparing different popular databases, you should consider how user-friendly and scalable each DBMS is as well as how well it will integrate with other products you're using. Additionally, you may want to take into account the cost of the management system and the support available for it.

Database management engines also need to be able to grow with your organization. Small businesses may only need limited features or have small amounts of data to manage, but requirements can grow substantially over time, and switching to another database management system can be a hassle.

There are a number of popular databases systems available – both paid and free. To help you decide which management system might be right for you or your organization, check out the list below of the most popular databases.

2. Complete the table with the most popular databases systems available. Match the specific feature to the databases system it characterizes.

Oracle	m)It is one of the most popular databases for web-based applications. It's free, and it is frequently updated with features and security improvements.
	n) It is ideal for large organizations that handle enormous databases and need a variety of features.
MySQL	o) It is ideal for organizations that need a robust database management tool but are on a budget.
Microsoft SQL Server	p) It is available on Linux as well as Windows-based platforms.
	q) PostgreSQL is one of several free popular databases, and it is frequently used for web databases.
PostgreSQL	r) You are able to access visualizations on mobile devices.
	s) It is ideal for organizations with a limited budget that want the ability to select their interface and use JSON.
	t) It works very well with other Microsoft products.
	u) The first version of this database management tool was created in the late 70s.

3. Group work (expert group):

Each group will read one of the texts about different database management systems and will make a summary of their specific features.

It's no surprise that Oracle is consistently at the top of lists of popular databases. The first version of this database management tool was created in the late 70s, and there are a number of editions of this tool available to meet your organization's needs.

The newest version of Oracle, 12c, is designed for the cloud and can be hosted on a single server or multiple servers, and it enables the management of databases holding billions of records. Some of the features of the latest version of Oracle include a grid framework and the use of both physical and logical structures.

This means that physical data management has no effect on access to logical structures. Additionally, security in this release is excellent because each transaction is isolated from others.

Pros:

You'll find the latest innovations and features coming from their products since Oracle tends to set the bar for other database management tools.

Oracle database management tools are also incredibly robust, and you can find one that can do just about anything you can possibly think of.

Cons:

The cost of Oracle can be prohibitive, especially for smaller organizations.

The system can require significant resources once installed, so hardware upgrades may be required to even implement Oracle.

Ideal for: Large organizations that handle enormous databases and need a variety of features.

MySQL is one of the most popular databases for web-based applications. It's freeware, but it is frequently updated with features and security improvements. There are also a variety of paid editions designed for commercial use. With the freeware version, there's a greater focus on speed and reliability instead of including a vast array of features, which can be good or bad depending on what you're attempting to do.

This database engine allows you to select from a variety of storage engines that enable you to change the functionality of the tool and handle data from different table types. It also has an easy to use interface, and batch commands let you process enormous amounts of data. The system is also incredibly reliable and doesn't tend to hog resources.

Pros:

It's available for free.
It offers a lot of functionality even for a free database engine.
There are a variety of user interfaces that can be implemented.
It can be made to work with other databases, including DB2 and Oracle.

Cons:

You may spend a lot of time and effort to get MySQL to do things that other systems do automatically, like create incremental backups.
There is no built-in support for XML or OLAP.
Support is available for the free version, but you'll need to pay for it.

Ideal for: Organizations that need a robust database management tool but are on a budget.

As with other popular databases, you can select from a number of editions of Microsoft SQL server. This database management engine works on cloud-based servers as well as local servers, and it can be set up to work on both at the same time. Not long after the release of Microsoft SQL Server 2016, Microsoft made it available on Linux as well as Windows-based platforms.

Some of the standout features for the 2016 edition include temporal data support, which makes it possible to track changes made to data over time. The latest version of Microsoft SQL Server also allows for dynamic data masking, which ensures that only authorized individuals will see sensitive data.

Pros:

It is very fast and stable.
The engine offers the ability to adjust and track performance levels, which can reduce resource use.
You are able to access visualizations on mobile devices.
It works very well with other Microsoft products.

Cons:

Enterprise pricing may be beyond what many organizations can afford.
Even with performance tuning, Microsoft SQL Server can gobble resources.
Many individuals have issues using the SQL Server Integration Services to import files.

Ideal for: Large organizations that use a number of Microsoft products.

PostgreSQL is one of several free popular databases, and it is frequently used for web databases. It was one of the first database management systems to be developed, and it allows users to manage both structured and unstructured data. It can also be used on most major platforms, including Linux-based ones, and it's fairly simple to import information from other database types using the tool.

This database management engine can be hosted in a number of environments, including virtual, physical and cloud-based environments. The latest version, PostgreSQL 9.5, offers larger data volumes and an increase in the number of concurrent users. Security has also been improved thanks to support for both DBMS_SESSION and expanded password profiles.

Pros:

This database management engine is scalable and can handle terabytes of data.
It supports JSON.
There are a variety of predefined functions.
A number of interfaces are available.

Cons:

Documentation can be spotty, so you may find yourself searching online in an effort to figure out how to do something.
Configuration can be confusing.
Speed may suffer during large bulk operations or read queries.

Ideal for: Organizations with a limited budget that want the ability to select their interface and use JSON.

4. Group work (expert group):

Each expert group member will return to their home group and will retell the summary of their database management system.

5. Group work (home group):
Correct the tables with database management systems descriptions.

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 databases.

random	data
malicious	applications
preconceived	malfunction
software	access
facilitate	coherent
retrieve	process
inherent	meaning
logically	assortment

2.   Find words in the article English equivalents and use them in the sentences of your own to speak about databases.

Выполнять выборку данных, поддерживать базы данных, надежная база данных, редактировать информацию, хранить данные, заранее заданный набор, связанные данные, запрос данных, присущее значение, получать доступ к информации, жесткий диск, связанные данные, обновлять информацию, совместное использование данных

Work with the Internet

- Surf the net and be ready to tell about other popular database management engines.
- Find some additional information and facts about the database management engines presented above.

Приложение 1

<u>Useful Words/Phrases for successful communication</u>

Personal opin-ion	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 ad-vantages 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

Приложение 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 back-ground infor-mation	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 ques-tions	If you have any questions, don't hesitate to ask. I'll be glad to answer any questions.

Приложение 3

Six hats of thinking

Useful lexis

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

***THE WHITE HAT** gives factual information about the presentation.*

1. What was the subject of the presentation? The subject of presentation is …
2. How long did it last? It lasted for … minutes.
3. How many parts did it consist of? The presentation consisted of … parts.
4. Was it computer or paper presentation? It was a … presentation.
5. Was it colored or black-white? It was …
6. Was it joined or single-handed work? It was … work.
7. How many people took part in the presentation? … people/person took part in it.

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

What are the good points?
What are the benefits?
How will it help us?
I liked …
… was interesting

1. to manage to develop a successful report;
2. to cope with the task;
3. to do something in the original way;
4. to express one's own professional view concerning …;
5. to show knowledge/skills;
6. to deliver a speech professionally;
7. to raise important issues;
8. to cover all the points of the presentation;
9. to be rich in professional lexis;
10. to be worthy of special attention;
11. well-prepared, thought-provoking, informative, colorful, thought-out
12. to succeed in …

THE BLACK HAT _states negative points of the presentation._

There are some disadvantages.
I didn't like …
… was a weak point.
1. to fail to develop ;
2. it has limited professional lexis;
3. to fail to show knowledge and skills;
4. to fail to present the graphical part;
5. to overlook the main project parts;
6. Your report leaves much to be desired.
7. You failed to cover all the points of the presentation.

THE RED HAT _expresses all the feelings which the presentation arouses._

1. I feel interested/ excited/ confused/ indifferent/disappointed
2. The presentation was interesting/ exciting/ confusing/ ordinary/disappointing
3. I have different feelings;
4. The report created a feeling of surprise/admiration/disappointment– вызывать чувство удивления/восхищения/разочарования;
5. It aroused our interest;
6. There was a disappointing/ confusing moment.
7. There was a moment that gladdened us very much.
8.

THE GREEN HAT _suggests ways to improve the presentation._

1. The presentation would be improved if …;
2. It would be better if …
3. To make it more professional you should …;
4. I would suggest (doing) …
5. It is necessary to …

THE BLUE HAT _sums up points of view of all the hats and expresses the overall impression of the presentation._

1. In general the presentation created a favourable (positive)/ unfavourable (negative) impression;
2. You develop a successful/unsuccessful project;
3. In spite that you fail to consider …   the presentation is a success because …;
4. The presentation arouse different emotions, such as interest/ excitement/ confuse/ indifference/ disappointment
5. It will improve considerably if you add ...
6. In conclusion I would like to say that …

Приложение 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 pro-

motion 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 | Cloud Computing Disadvantages |

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.

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
QUICK TIPS TO ENSURE ONLINE SECURITY

1. Stay Wary Of Tech Support Scams

Tech support scams have been troubling the internet users for quite a while. Precisely, one can relate their emergence to the exponential rise in online customer support centers and cold-calling. While the actual support systems aims to benefit the customers, the malefactors are using this method for their own devices. Therefore, one should be very careful while communicating with any online tech support to avoid falling a prey to hackers. The more you avoid approaching remote or online tech support which is not the official provider for the product/system needed, the better.

2. Think Before You Click

Another common trick that the hackers use to victimize innocent internet users is phishing. One click on a wrong click could create chaos for you. This may range from malware attacks to password hacks, and even financial losses. Therefore, make sure you think well before clicking on a link. Stay away from all such websites and emails that ask your personal details, email address with passwords, or bank account details.

3. Take Care Of Your Passwords

Credential stuffing and password hacking are just another sort of routine cyber attacks. While people have learnt to make stronger passwords, they still miss an opportunity to keep them unique. That is why the hackers still achieve success in credential stuffing attacks as people use same passwords. To avoid this problem, it is highly advised to create unique passwords for every account, regardless of whether you use it frequently or not. In addition, using a password manager is another method to keep your passwords secure and unique, without the need to memorize them all.

4. Employ Multi-Factor Authentication

Multi-factor authentication has been around for quite some time. While not entirely fool-proof, and may sometimes become something of a burden as well, MFA, nonetheless, adds an added security layer to protect your account. Perhaps, you won't mind doing some extra effort to log into your account to protect it from hackers.

5. Secure Your Cloud Databases

Well, to understand this point, let's recall all those weird data breaches from unsecured S3 buckets. Certainly, you don't want the hackers to steal your precious data, do you? Then why not keep it protected!

6. Encrypt Storage Drives

External storage drives certainly provide a nice storage option for handling bulk data. But, hacking these drives isn't so difficult either. So, make sure you keep the drives adequately encrypted.

7. Don't Be Too Social

On Social Media Throughout the year 2018, we have heard of several instances where Facebook, Instagram, Twitter, and almost all major social networking platforms have ditched their users (either accidentally or intentionally). After so many troubles, it seems a better idea to restrict your social media activities. Even if you're an avid user, you can at least try not to share your personal information on these networks.

8. Install A Robust Anti-Malware

This is simply a reiteration of the commonly known security tip that we miss the most. Having an average antivirus software won't sufficiently protect your device from malware attacks. Make sure you install a robust and reputed anti-malware tool that adequately fights back all known malware.

9. Keep Your Devices Updated

Adding to the list of security malpractices is the habit of ignoring software updates. That's where the hackers win. They spot the vulnerable devices and hack them by exploiting the software weaknesses. Many times, the vendors have already released security fixes, but the users missed to update their systems. Consequently, they become a victim of cyber attacks. Therefore, make sure to keep your all apps and software programs in your device updated.

10. Don't Use An App?

Delete Right Away Keeping unwanted or excessive apps not only occupy your device memory but also access your data. So, get rid of all additional apps in your device in the first place.

Simple as that!

WHAT IS MALWARE?

Hello! My name is Kevin Haley and I'm the director of Norton security response. Today I want to talk to you about malware. It's a phrase we've been hearing a lot of lately. We know it's annoying and not something we want but most people don't know exactly what it is. Malware is short the malicious software. The term is used to describe a lot of threats on the Internet landscape. Viruses, Trojans, BOTS – things the bad guys use to mess up your day. They may be trying to steal resources from your computer or trying to steal from you. That can range from slightly annoying to very harmful. During this video we're going to talk about the different types of malware. How we get them, how we can avoid them and, finally, how we get rid of them if we have them on our computer. But first, let's talk about where they come from. Obviously, since the term malicious is part of malware, there's some bad guys behind it.

These bad guys want to get their malicious software on your machine. Often they're referred to as hackers but let's take a moment to talk about a hacker. Not all hackers are bad guys. A hacker can be anybody who uses their knowledge of computer coding to bypass security measures on a computer device or network. Early on virus has had various utilities and were engineered mostly by people in the computer science industry. College students created viruses for research projects in order to help further their studies and fine-tune their coding skills. Hackers are generally categorized by the type of metaphorical hat they wear: white hat, gray hat, black hat. The term comes from the Old Spaghetti Westerns where the bad guy wears a black cowboy hat and the good guy wears a white hat. There are two main things that determine the type of hacker you're dealing with their motivations and whether or not they're breaking the law. If we didn't have white hat hackers seeking out threats and vulnerabilities before the black hats can find them then there would probably be a lot more cybercrime than there is now.

Okay, now let's take a look at the different types of malware you might encounter. First, not all malware is destructive but it can cause very annoying behavior like generating a bunch of popup ads or it can cause your computer to run very slowly. These types of programs are not classified as malware. They're known as potentially unwanted programs or PUAs which can come bundled in legitimate software programs as a package. These programs can negatively affect a computer and can even introduce other security risks or get you to buy something that you just don't need.

Then there's adware. This is software that displays unwanted advertising on a computer or mobile device usually in the form of pop-up ads or they may redirect your browser to a certain website. While it usually doesn't cause any direct harm to the user's device it can be very annoying. Annoying behavior that can sometimes contain spyware as well.

Something almost like an adware is a browser hijacker. Hijacking a browser means that malicious software has redirected your computer's browser to a different website. Generally used to display advertising it can be used to generate visits to a

certain website or lead you to a malicious website that will download malware onto your computer and that's where things can go from annoying to off and speaking of awful.

Let's take a look at the real bad guys of the malware world. These are the ones you really have to watch out. First let's take a look at spyware. This malware is designed to do exactly what it sounds like spy. It hides on your computer and monitors and everything you do the contract web activity access email and even steal your username and password.

Next is ransomware. You've been hearing a lot about this one lately and for good reason. With ransomware someone can lock up your computer holding it hostage and forcing you to pay a lot of money just to get your files back. This little guy is a great reason to regularly backup the important things on your computer.

Ah and then there's worms. A computer worms main objective is to spread as many copies of itself in any way possible from computer. A worm can replicate itself without any human interaction and it does not need to attach itself to a program in order to cause damage. Worms can modify and delete files and even inject additional malware onto the computer.

Another form of malware we've heard about before is a Trojan horse much like the famous one from Roman history. These bits of malware hide in what looks like harmless software.

Let's look at a few.

A Banking Trojan is malware that hides on your machine and gets in the middle of the conversation you're having with your bank. It can steal the passwords to your bank account, it can make you think you're talking to your bank and get you to hand over personal information even your pin number but in the end it steals your money. It can empty your bank account.

Then we have Backdoor Trojans. These will look to create a backdoor on a user's computer allowing the attacker to access the machine in order to get control of it, upload stolen data and even download more malware onto the computer.

A Downloader Trojan can get onto your computer and then download any type of information the attacker wants including more malware. An information stealer has one main objective steal data from the infected computer.

Another is a Remote Access Trojan. This malware is designed to give the attacker full control over your computer.

And the last Trojan we'll talk about is DDoS attack that's a DDoS attack Trojan. The DDoS stands for distributed denial of service and it's designed to take down an entire network by flooding it with traffic.

Now let's move from Trojan horse malware to Macro viruses. These are the type of viruses that are written specifically to alter macros which are a common command that word processing programs use. Once opened macros can cause changes in the text documents such as removing or inserting words, changing the font or even other strange and annoying behavior. Some macros can even access email accounts and send out copies of itself to a users contacts.

The last group where we'll talk about now are Rogueware and Scareware also known as rogue security software. Rogueware is malware that says there's a problem on your machine and offers to solid if you pay them. Often it will pretend to be anti-virus software popping up on your screen to tell you your machine is full and malware. The only malware on your system is the Rogueware. Some of these scammers will pop up on your screen telling you that your computer operating system has errors or is running slowly or it could crash and they offer to fix the problem for a price. As well if you receive a message from a program you are not familiar with informing you that you have a virus or a serious error on your system. It's a scam. An internet search of the program's name will usually notify you if it's Rogueware. So there's a lot of malware. Just know that we're not trying to scare you with all this. We're just trying to educate you about what's out there.

Now let's talk about how malware gets on your computer.

One way you can get a security risk is through a bundled free software program. Free is never usually 100 per cent free when it comes to software and apps. There's always some sort of trade-off. A lot of the time free software companies will partner with other companies and bundle additional software's within the download. Mostly these programs are bundled with toolbar add-ons. However hidden within these software packages can be spyware add libraries or even browser hijackers. Well these are not malware. They can still pose security risks to your computer.

Another way to get malware is through file sharing sites. Downloading content illegally is bad but it's highly popular using a client like BitTorrent. Users can download media via peer-to-peer file-sharing. However these files tend to travel across multiple computers which probably don't have internet security software. So they're easily infected with malware. Additionally hackers can set up fake files on these networks that are based on popular downloads that are actually malware in disguise.

A newer form of malware was recently found concealed inside the firmware of a USB stick. Firmware is a software embedded in the hardware device and used for the basic functioning of the device. Since the malware is hidden in the firmware and not the storage area of the USB stick it's very hard to detect. Attackers often have help getting on your machine in the form of exploit kits. These are malicious toolkits that attackers use to search for software vulnerabilities on their targets computer. The kits come with pre-written code that will search for the vulnerabilities and once it's found the kit can then load malware onto the computer through this security hole. These exploit kits allow attackers to infect us while we're web browsing and it's called a drive-by download. This is a download that occurs when a user visits a malicious website that's hosting an exploit kit. There's no interaction needed on the user's part other than visiting the infected web page. The exploit kit will look for the vulnerability in the software of the browser and inject malware via the security hole.

One of the newer ways to get malware is through malvertizing and it's rising in popularity among cyber criminals. The hackers will purchase legitimate advertising space on legitimate websites and within the ad will be malicious code. Similar to a drive-by download there's no interaction needed on the user's part to download the malware.

Often the attackers will fool you into infecting yourself. This is called social engineering. Think of a phishing attack. You might get an email instant message or other social media notice asking you to click on a link. Sometimes these appear as friendly notices from friends but they can also appear as scare tactics telling you have a problem and you have to respond immediately. Clicking on that link can trigger a drive-by download the one we just talked about. You have to be very careful about what you click.

Sadly, even in today's digital age people still don't understand the true need for an internet security program. The cyber criminal industry costs the global economy approximately 300 billion dollars a year. These numbers alone prove how essential it is to have protection across all your devices as businesses certainly blooming in the malware world. As you can see, there's a lot of ways that attackers are trying to get you.

With that said let's look at something you can do to try and stay away from a malware attack.

First, keep your computer OS and all software up-to-date. These updates often include ways to stop the latest malware.

Think twice before you click on a link or download anything. This includes email attachments that say they're coming from your friends or companies you do business with

Don't trust pop-up windows that ask you to download software or call an 800 number for help. Remember free is rarely free.

Do regular backups on all the important things on your computer. That doesn't stop malware but it does protect what you have should you find yourself a victim of ransomware.

And finally, use good security software. Today you need more than just antivirus software you need security that is on the lookout for all sorts of attacks.

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.

СЛОВАРЬ

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 09.03.03 Прикладная информатика, 09.03.04 Программная инженерия и 09.03.02 Информационные системы и технологии.

Представленные после текстов разработанные авторами задания основаны на активных технологиях и подходах к обучению и должны способствовать развитию у студентов системы умений, являющихся основой их профессионально иноязычной коммуникативной компетенции.

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.

Алешугина Елена Анатольевна
Лошкарева Дарья Александровна

ПРОФЕССИОНАЛЬНО ОРИЕНТИРОВАННЫЙ АНГЛИЙСКИЙ ЯЗЫК ДЛЯ СПЕЦИАЛИСТОВ В ОБЛАСТИ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ

Учебное пособие