## Устная часть экзамена English

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| **The future of IT**  The development of cloud computing. Many business processes are moving to the cloud, and gradually change the business itself.  Mobility. Cloud technologies lead to an increase in business mobility: though it is like that the company is no longer tied to a particular location, and the fact that the company is aware of the demand for mobile technology among customers.  Big Data Technologies. Data and analytics - something that will go forward.  Internet of Things. According to forecasts by the year 2020 it will be connected to the Internet for more than 50 billion in a variety of technical devices.  Strengthening of information security. Cloud technologies, mobility and other market trends make pay more attention to data security.   Smart devices. The growing number of intelligent devices that can control various processes inevitable. Smart watches and bracelets.   3D-press. It is obvious that the invention of 3D-printers will have an important impact on many industries, from medicine to construction.   The development of online learning.   The rise of electronic payment systems. The growth of electronic payments continues and the market come new formats of interaction with money. |
| KPI |
| **Kiev Ukraine**  I have almost 2 years live in Kiev and do not get tired to enjoy this city. This is very beautiful and the most ancient city. You can spend hours wandering through its streets, squares and admire. The special charm of Kiev give numerous parks, where time seemed to stop between the golden domes of temples. Kiev is beautiful any time of year, but especially in the spring, when all over the city in bloom chestnuts, blooming lilacs in the botanical garden.  The city of Kiev, one of the largest cities in Europe, lies on both banks of the Dnieper River.  The first settlements on the territory of modern Kiev appeared from 1500 to 2000 years ago on the Old Kiev Hill (which is now the Historical Museum). Kiev in the tenth century became the capital of a vast state and turned into an influential political center of Europe. The wealth and influence of Kiev was due to the trade. He stood at the crossroads of international trade routes - the legendary "from the Vikings to the Greeks"  The rapid development of Kyiv was interrupted by the Tatar-Mongol invasion, with the result that in 1240 the city was destroyed and looted.  Almost a hundred years of the Tatar-Mongols dominated the Ukrainian lands. Yet Kiev managed to preserve their ancient craft, merchant and cultural traditions and remained an important political, commercial and economic center.  1362-1648 years - Kiev with Lithuania and Poland.  Standing in front of the need to fight on several fronts - with Polish and Lithuanian knights in the west, the Crimean Khan and the Turkish sultan in the south - Khmelnitsky was forced to ask for military assistance to the Russian Tsar. Formally Union of Ukraine and Russia was signed in 1654 in Pereyaslav (Pereyaslav Rada). Ukraine for a long time fell under the rule of the Russian Empire.  Stormy 20th century – Kiev was a capital of Soviet Ukraine.  And now Kiev is a capital of independent Ukraine. I believe that this beautiful city will fall in line with European capitals by the level of comfort and infrastructure development. |
| My native city – **Chernivtsi**  Chernivtsi is the administrative center of Bukovina.  Bukovina is historically part of Moldavia, from 1774 to 1918 was an administrative division of the Habsburg Monarchy, the Austrian Empire, and Austria-Hungary. After World War I, Romania established control over Bukovina. In 1940, the northern half of Bukovina was annexed by the Soviet Union, and nowadays this is part of Ukraine.  Together with the city of Lviv, Chernivtsi is viewed at present to be a cultural center of western Ukraine. The city is also considered one of modern Ukraine's greatest cultural, educational and architectural centers. Historically a cosmopolitan cultural center, Chernivtsi was even dubbed "Little Vienna" and "Jerusalem upon the Prut".  **Most famous places of my city are:**   * **Chernivtsi National University** - one of the leading Ukrainian institutions for higher education, it was founded in 1875. The architectural ensemble of the main campus of the university, the Residence of Bukovinian and Dalmatian Metropolitans is included on the list of UNESCO . * **Turkish Square or The Square of Turkish Well (Turetska krynytsia, as people in Bukovyna call it)** * **Ukrainian Music and Drama Theater.** I was dancing on the stage of this theater with my dance studio.   Chernivtsi with its history, natural beauty, amazing architecture, generous soul of its inhabitants have long taken a landmark in the register of Ukrainian and Eastern European cities. Ancient beginnings and history add to its charm and attraction for people interested in Bukovina. |
| **My faculty, future profession**  I am a student of Faculty of Applied Mathematics  My faculty trains specialists in the field of information technology, design of operating systems, development of system and applied mathematical provision, automation systems design, scientific researches, expert systems, development and application of computer systems and networks of general purpose, specialized computer systems and networks with optimized parameters, means of information protection in computer systems, local and distributed computing systems.  We receive advanced training in the design, manufacturing, repair and maintenance of computers and computer networks that are taught in the following subjects:   * Design of computer network administration tools * Design of computer systems and networks * Network information technologies * Design of database and knowledge base machines * Methods and tools for computer-aided design of computer systems * Design of information security tools for computer networks * Administration of corporate information systems * Design of user interfaces   We learn to programming in multiple languages from assembler to high-level languages such as C++ and Java, to develop algorithms, to understanding of the electronic devices, to manage networks. Knowledge and practical skills obtained at the Faculty of Applied Mathematics allow us to find their rightful place on the job market and get an interesting and rewarding job position. |
| **Computers. Applications of the computers**  Education.  Banking Sector  Medical.  Embedded System  Computer AidedDesigning  Computer aidedManufacturing.  Business  E-commerce  Defence.  Simulators  Tourism  Engineering andRobotics.  Entertainment.  Communication  Space programs   * EDUCATION   Online education  Self-Learning at your own pace.  Interactive so increaseunderstanding.  Faculty usage increase by videoconferencing.  Library:- no need to buy everybook if it is available online.  Used to generate reports and documents   * BANKING SECTOR   Transaction fromATMs.  Internet banking  Bank provides 24×7online services   * MEDICAL   Research  Hospitals :Mainly computer isused for keeping the -record ofpatients.  Medical Diagnosis   * BUSINESS   Stock Markets:- Up to date and immediate information about fluctuation in prices.  Internet marketing (e-marketing).   * Tourism   Railways,Airline :- Computerized reservation and cancellation  Position of the train/Aircraft.  Hotel Booking  Places to be visited   * Engineering and Robotics   All the fighter planes, Aircraft,submarines are equipped with computer system for targeting and navigation.  Autopilot mode   * ENTERTAINMENT   Music/Videos  Games  Movies  Net Surfing  Reading (E- News paperstories,thesis etc…)  Live TV   * Communication   Internet calling  Video conferencing  E-mail  Chatting  Social Networking  websites |
| **History of the computers**   * The progression in hardware representation of a bit of data:   1. Vacuum Tubes (1950s) - one bit on the size of a thumb;   2. Transistors (1950s and 1960s) - one bit on the size of a fingernail;   3. Integrated Circuits (1960s and 70s) - thousands of bits on the size of a hand   4. Silicon computer chips (1970s and on) - millions of bits on the size of a finger nail. * The progression of the ease of use of computers:   1. Almost impossible to use except by very patient geniuses (1950s);   2. Programmable by highly trained people only (1960s and 1970s);   3. Useable by just about anyone (1980s and on).  The first modern computers – for cracking the secret codes (World War II) The first substantial computer was the giant ENIAC machine at the University of Pennsylvania. ENIAC (Electrical Numerical Integrator and Calculator) used a word of 10 decimal digits instead of binary ones like previous automated calculators/computers. ENIAC was also the first machine to use more than 2,000 vacuum tubes, using nearly 18,000 vacuum tubes. Problem: Very big. Very slow. Vacuum tubes were a considerable advance on relay switches, but machines like the ENIAC were notoriously unreliable. The microelectronic revolutionThe invention of the transistor, a small, low-power amplifier which also gave a boost to the computer industry due to its small size relative to that of a vacuum tube. Transistors, however, had their problems too. The main problem was that transistors, like other electronic components, needed to be soldered together. As a result, the more complex the circuits became, the more complicated and numerous the connections between the individual transistors and the likelihood of faulty wiring increased. In 1958, this problem too was solved by Kilby. He manufactured the first integrated circuit or chip. A chip is really a collection of tiny transistors which are connected together when the transistor is manufactured. Mainframes to PCsThe 1960s saw large mainframe computers become much more common in large industries and with the US military and space program. IBM became the market leader in selling these large, expensive, and very hard to use machines.Personal computers By 1974, Intel had launched a popular **microprocessor** known as the 8080 and computer hobbyists were soon building home computers around it. The first was the MITS Altair 8800. After the development of the microprocessor, individual personal computers were low enough in cost that they eventually became affordable consumer goods. Early personal computers – generally called microcomputers – were sold often in electronic kit form and in limited numbers, and were of interest mostly to hobbyists and technicians.  By 1984, Apple and IBM had come out with new models. Apple released the first generation Macintosh, which was the first computer to come with a graphical user interface(GUI) and a mouse. The GUI made the machine much more attractive to home computer users because it was easy to use.. IBM released the 286-AT, which with applications like Lotus 1-2-3, a spreadsheet, and Microsoft Word, quickly became the favourite of business concerns.  Now people have their own personal graphics workstations and powerful home computers. Standardized PCs running standardized software brought a big benefit for businesses: computers could be linked together into networks to share information. |
| **Computer system**  *A computer system is one that is able to take a set of inputs, process them and create a set of outputs. This is done by a combination of hardware and software.*  Computer system is a complete, working computer. Computer systems will include the computer along with any software and peripheral devices that are necessary to make the computer function. Every computer system, for example, requires an operating system.  The diagram below shows you the idea of a computer system in its most basic form  a computer system  The computer system has one or more ***inputs*** to provide data. This data is then ***processed*** in some way. The outcome of the processing is sent to an ***output*** or it may be ***stored*** until some event happens to cause it to be output.  For processing to take place, there needs to be a set of instructions of what needs to be done. This set of instructions is called a ***program***.  This system is called a **stored-program computer**. |
| **Computer programming**  Computer programming is the craft of writing useful and extensible source code which can be interpreted or compiled by a computing system to perform a meaningful task.  Programming a computer can be performed in one of numerous languages, ranging from a higher-level language to writing directly in low-level machine code.  Basically, writing software (computer programs) involves describing processes, procedures; it involves the authoring of algorithms.  Computer programming involves developing lists of instructions - the source code representation of software  The stuff that these instructions manipulate are different types of objects, e.g., numbers, words, images, sounds, etc...  Creating a computer program can be like composing music, like designing a house, like creating lots of stuff.  It has been argued that in its current state it is an art, not engineering.  Development phase is the phase in which the system’s computer programs are written.. During this phase programmers write lists of instructions that will be followed by the central processing unit (CPU). The instructions of the program must be complete and in an appropriate order. Any data used by a program has to be described so that compiler knows how to store and retrieve it.  Debugging is a process of seeking and corrrecting mistakes at programm code and programm algorytm.   Steps you take are like solving puzzles.  Debugging a program can be done in steps that match the Scientific Method.   * Observation, * Hypothesize, * Make predictions, and * Test |
| **Computer languages**   * Mashine code.Assembly languages directly correspond to a machine language so machine code instructions appear in a form understandable by humans. Assembly languages lets programmers use symbolic addresses, which the assembler converts to absolute addresses. * Scripting.Command-line interface (CLI) languages are also called batch languages, or job control languages. The script file is written in plain text format, then this file can be performed in the program. This has the same effect as if these teams were alternately introduced into the command line. Examples are bat-files in Windows and shell-script in Unix-systems. Command-line interface (CLI) languages are often used by programmers and system administrators, in engineering and scientific environments, and by technically advanced personal computer users. * EXE. A compiled language is a programming language whose implementations are typically compilers (translators that generate machine code from source code), and not interpreters (step-by-step executors of source code, where no pre-runtime translation takes place). We study compiled languages such as Pascal, C, C++, Java. * Databases. Data-oriented languages provide powerful ways of searching and manipulating the databases. Examples of data-oriented languages include: SQL, Visual FoxPro etc. * WEB. Source embeddable languages embed small pieces of executable code inside a piece of free-form text, often a web page. Server-side embedded languages are much more flexible, since almost any language can be built into a server. Example: PHP, VBScript. Client-side languages : JavaScript, Java, ActionScript. Languages with small interpreters : Ruby, Python. Markup languages for web pages design such as HTML, CSS   Also in computer programming is defined classification of programming languages by programming paradigm (programming style):  procedural languages,  object-oriented programming,  multiparadigm languages and others. |