

ROLE OF FOREIGN LANGUAGES IN THE STUDY OF COMPUTER TECHNOLOGY
AND SOFTWARE

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Abstract. In order to be competitive in the labor market, it is necessary to become a good programmer, skillfully wielding programming languages, able to think unusually, to be abstract. The article describes the role of foreign languages in the enrichment of knowledge in the specialty. Such opportunities provide international grants, international conferences. We came to the conclusion that the programmers who own the best foreign language “developed by the reaction of communicating with the operating system and programs in the process of interactive dialogue, they will solve the problem of debugging and editing software, to quickly find mistakes and learn not yet translated documentation, it is easier to read the code”.

Keywords: IT-specialist, foreign languages, programming, programmer, code, international grants

The colossal and qualitative changes taking place in our modern life, in particular computerization, dictate the need to become familiar with them, otherwise society will regress. It is no secret that any software makes our lives easier, and only a good programmer who is proficient in programming languages can create such a product. Whether it is a tester, developer, system administrator or other representative of the IT sphere, you need to deal with special symbols, work in artificial language systems. Moreover, the IT sphere is one of those spheres that requires constant work and filling gaps in knowledge, as new requirements, updates of some programs, operating systems appear, which give better results. Moreover, a representative of this specialization must constantly keep in mind the syntax of the programming language, algorithms, various rules. We believe that a high-class programmer should be able to think outside the box, abstract, study and be fluent in English. Creativity is also not the last indicator of quality.

According to E.A. Klimov, for a representative of the profession “Man – Sign System” such qualities as accuracy, emotional stability, perseverance, systematicity, the ability to follow numerous rules, to work with concentration in conditions of external interference, to control the course and correctness of mental actions are important [1].

Thus, it is worth noting that the main working environment of the "Human - Sign System" people is the environment of processing information presented in the form of signs. That is, such a person can work not only with a programming language, but also with natural languages (English, German, Russian), and he actively works with them. Hence the need to study foreign languages for programmers.

Let's consider the specifics of IT specialties.

Let's imagine any software. How is it implemented? Initially, the project is briefly described, what the user wants to see in it, then comes the step-by-step pseudocode. Usually, the pseudocode consists of standard words, through which the developer would understand what and how to do step by step in the program. But, the next stage, the programming stage, consists entirely of working with artificial languages, programming languages, the syntax of which is made up of words in English.

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Furthermore, when creating programs, a large number of conventional designations are used: for naming variables, classes, functions, when setting any conditions or cycles [4]. The keywords of any programming language are English. A programmer, knowing English, can, by logic or having forgotten part of the code, relying on knowledge of a foreign language, write down the forgotten fragment. For example, when working with a programming language, it is necessary to set the variable type (integer, float, boolean, etc., which in translation from English respectively mean integer, floating and logical). Or, let's say, when an unfamiliar fragment of code is given

```
prozessor P = new prozessor();  
P[0] = new prozessor("Aser", 4, 3.5);  
P[1] = new prozessor("Lenovo", 6, 2.5);  
P[2] = new prozessor("Fujizu", 4, 2.1);  
for (int i = 0; i < 3; i++)
```

The code contains keywords: new, for, int. If the programmer speaks English, but is still a beginner in his field, he can easily understand that new (new) is the creation of a class instance, for (for) is a cycle, int (integer- integer) variable type.

When a programmer reads foreign documentation, the IT specialist must be able to extract useful information from the text, find keywords, and mentally summarize it. Unfortunately, there are few domestic worthwhile IT products, and in order to keep up with the times, the IT specialist must constantly work with foreign software or IT devices.

After interviewing students majoring in Computer Science and Engineering, as well as programmers with whom we managed to communicate during our internship, about whether they encounter the problem of having to turn to English-language forums in search of an answer when coding or to Internet sources in other technical areas, for example, electrical engineering, they answered that they definitely do. In such cases, Google Translate is popular for translations, but, unfortunately, this translator does not give completely correct results. This suggests that future IT specialists do not have a sufficient level of knowledge of English to work with such Internet sources.

It will also be difficult for a programmer to add some "zest" to his computer application or to distinguish himself in some way if he does not know English. Let's say you need to go to an interview or talk about yourself at an event. It would be appropriate to prepare an excellent presentation for this event, but instead of Power Point in this case, you can use Prezi.com, with which you can create original dynamic and colorful presentations. But the site itself is in English.

To become competitive in the labor market, you should enrich your knowledge in your specialty at foreign universities. Studying foreign languages provides all the opportunities for this. For example, the website of the German Academic Exchange Service DAAD presents a wide variety of scholarship programs for second- and third-year bachelors, or study in a master's program at any university in Germany, educational practice at German universities and at enterprises with the support of IAESTE (International Association for the Exchange of Technical Experience). Scholarship programs are also offered by the Austrian Academic Exchange Service OAAD, various funds of European countries, the USA, and also countries of the East. You can become a participant in the "Exchange Student" program if there are partnership agreements between universities and the "Erasmus" program, which is a European exchange program. The above list includes the international university for future IT specialists "Innopolis", where classes are conducted only in English. Therefore, one of the authors of the article, student Kalimullina Rezeda, began to deepen her knowledge of English from her first year, as well as study German. At the moment, her goal is to study, see and compare work with computer

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technologies in Russia and abroad. And she succeeded in this, having won a DAAD grant under the "Summer University Courses in Germany" program, thanks to which she underwent language training at the Berlin Technical University. At the university, she got acquainted with the computer science department, where the teachers also gave a lot of information about 3D laboratories, products obtained in these laboratories, as well as the necessary software (AutoCad and some other graphic software). This excursion was interesting in the sense that in our Russian universities 3D technologies are not yet so developed, only in words, even, one can say, completely new. During excursions to many Berlin industrial enterprises, in order to get acquainted with the equipment and the course of work, she saw that Siemens controllers are used in production, which are very popular not only in Germany, but also in other countries of the world. As it became known, these controllers were installed in the companies BMW and BESSY (from German "Berlin Society of the Electronic Storage Ring for Synchronous Radiation"), the operation and functionality of which are also based on programming languages. At the Berlin Technical Museum, she received information about the first and subsequent Z generation computers and their evolution, about the first information carriers, documentation on Boolean algebra, about data on encryption and decryption of information, received knowledge about the Enigma cipher, etc., and all the information was in German. This confirms the need for in-depth study of a second foreign language. In most cases, the choice falls on German, since almost every engineer is familiar with the success of one or another German company or firm (in mechanical engineering, well-known firms are BMW, Volkswagen, Opel, Mercedes, Audi, Porsche), and branches of some German firms are also opening in Russia (for example, ZF Friedrichshafen AG, one of the leading concerns-suppliers of the global automobile industry in Germany, in 1999 founded ZF Transmission LLC - a 100% subsidiary of ZF Friedrichshafen AG for service and sales, later renamed to ZF Russia LLC, in Moscow and St. Petersburg. In 2005, ZF and KAMAZ created a joint venture ZF KAMA (ZF 51% and KAMAZ 49%) in Naberezhnye Chelny).

Knowledge of foreign languages also opens the door to participation in various international conferences, which, in turn, are a huge step in the field of science. Studying in the above-mentioned programs in an international environment gives the opportunity to meet students of similar specialties and exchange experience in the field of IT, which is necessary in the era of computerization. Obtaining a diploma that meets international standards guarantees a well-paid and prestigious job, since programmers who have a better command of a foreign language "have a developed reaction to communicating with the operating system and programs in the process of interactive dialogue, they solve problems of debugging and editing software products faster, find errors faster and master documentation that has not yet been translated, it is easier for them to read code." This means that such programmers have a higher probability of completing the assigned task on time, saving time and effort, since they do not have to dig into dictionaries or reference books. The choice of names for variables, classes and functions, tables and database fields play an important role in the successful development of a project, since the productivity of programmers directly depends on the ease of reading the code.

Thus, knowledge of foreign languages is "one of the components of the professional competence of a programmer"

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