



MAJOR MODERN PROGRAMMING LANGUAGES

Isoqova Adiba¹

¹ Termez State University,

Student of the Faculty of Information Technology.

E-mail: isabida010120@mail.ru

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ABSTRACT

This article is devoted to the consideration of programming languages that are the most common in modern times, as well as their comparative analysis and the study of the prospects for their use in the future.

C ++ Despite the fact that this programming language was created back in the early eighties of the last century, it can be classified as modern, since it has not lost its popularity among programmers, but, on the contrary, is used by high-level professionals. To this day, C-plus-plus is considered the most common programming language (it is gradually losing ground, yielding to the languages of the Java family), the ability to master which is the responsibility of any programmer. C ++ was created on the basis of the compiled statistically typed C programming language, as a result of which it inherited some disadvantages from it:

- relatively inconvenient syntax, which can lead to errors that are more difficult to recognize and, therefore, eliminate. Combined with a complex language specification, the syntax inconvenience makes it difficult to learn;

- long program code, which leads to an increase in compilation time and complexity when using programs;
- poorly implemented module support.

The main advantages of C ++ include the following:

- ease of processing by the C language compiler, and therefore? and high code compatibility.

C ++ code can be used in C with minimal changes, and vice versa;

- almost complete versatility. C-plus-plus is suitable for solving almost any software task;

- cross-platform and low requirements for computing power of the computer;

- freedom of the programmer to choose different styles of programming: structural, object-oriented, functional, generative. Language standards are



updated periodically. The latter was released in December 2017.

C ++ continues to evolve towards increasing performance and expanding capabilities through new additions to the standard library. At the same time, the main rule for the language remains to maintain compatibility with the predecessor language - C. At the same time, as the developers note, it is much easier to write C ++ code.

The Java programming language is strongly typed and designed for object-oriented programming. Java is based, like C ++, in the core C language. The main feature of the language is the use of a virtual machine that processes the program code independently of the operating system and computer hardware. The advantages of this method of processing include increased security, and the disadvantages include the decrease in performance, which is fought with the help of improvements in the ways of working with bytecode.

The advantages of the Java language itself include:

- developed standard libraries that do not require additions;
- high degree of program portability;
- relative ease of study;
- has built-in support for working in computer networks.

The negative qualities include:

- heavy load of the machine's RAM, and as a result, low speed and low productivity;
- the language has been developing for a long time, therefore, among the additions and basic tools of the language, there are tools with completely the same functional meaning.

For the past several years, Java has been at the top of the list of the best

programs for all kinds of developers. Therefore, the relevance of this language, founded in 1990, has not yet been fully exhausted. Java is the leader among programming languages in the segment of mobile applications, the share of development of which in the labor market for programmers is constantly increasing. There is also a high proportion of languages belonging to the Java family in web projects.

Python An increasingly popular and rapidly developing general-purpose programming language. It has a relatively small number of simple commands, which undoubtedly makes its syntax one of the simplest among modern languages. Ease of learning and a large number of programming styles (including structural, functional, object-oriented, imperative and aspect-oriented) are the undoubted advantages of the so-called Python.

Code written in Python by one programmer is easily readable by others, which makes it easier to work with the code.

Other advantages of Python:

- the ability to check for errors in individual sections of the program, and not just the whole;
- portability for almost all modern platforms;
- large standard library;
- integrability with languages such as C ++ and C.

Disadvantages of this language:

- relatively low speed of execution of algorithms, inherent in many interpreted programming languages;
- a large number of errors in the system code;
- problems with data types when transferring files in large projects, due to the use of dynamic typing.



Python has become one of the leaders in the web application development segment, while it constantly finds new fans and strengthens its position among programmers.

In modern times, programmers face a whole range of programming languages with many different properties. Their development does not stop, but, on the

contrary, only accelerates, and in the direction of increasing the number of varieties of languages. Therefore, the choice of the main specialization is becoming more and more difficult, but at the same time knowledge of the main and most common languages, which were discussed in this article, is necessary for every self-respecting specialist.

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