



PROGRAMMING LANGUAGES AND THEIR IMPORTANCE

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Annotation: This article discusses popular programming languages and explains the concept of algorithm in more detail. An algorithm is a strict sequence of actions that an executor must perform to completely solve a given problem. An algorithmic language is a set of symbols and rules that are used to express algorithms in a way that is understandable and consistent to the executor. Algorithmic languages are often also called programming languages. Currently, many programming languages have been developed for modern computers, each of which has its own advantages, capabilities and rules. BASIC, Turbo Pascal, Fortran, C, C++ programming languages are among them.

Keywords: IT, C++, Programming languages, C, BASIC, Algorithm, BCPL, PASCAL, COMPILER, INTERPRETOR, COMPUTER.

Introduction: In the current era, one of the most popular programming languages is the C++ programming language. The C++ programming language is an advanced version of C. In turn, the C programming language was developed based on the BCPL and B languages. The BCPL language was created in 1967 by Martin Richard. In the early 80s, Bjarne Stroustrup offered programmers an extended version of the C programming language, C++. In 1983, the American National Standards Committee established the X3J11 technical committee in the field of computing and information processing. In 1989, the C programming language, whose standard was approved, was standardized worldwide in 1990. The C++ programming language has the property of "organizing" the C language and allows for object-oriented programming. The emergence of such an opportunity led to fundamental changes in the world of software development. To date, a number of object-oriented programming languages have been developed and are



widely used in practice. Among them, such programming languages as Visual Basic, Delphi, Java, C++, and C++ Builder can be highlighted.

Main part:

The evolution of programming languages began with the advent of the first computers. Initially, programmers worked with computer commands that represented the simplest machine language. These commands consisted of long strings of zeros and ones. Later, an assembly language was created that stored machine commands understandable to humans. In addition, high-level languages such as BASIC and COBOL also appeared. They were translated into machine language by interpreters and compilers. The interpreter program sequentially translates its commands into machine language during the reading process. The compiler, in turn, converts the entire program code into an intermediate form - an object file. This stage is called the compilation stage. The word program is used as a word that identifies a separate block of commands (initial code) and as a word that identifies a complete executable software product. Over time, the structure of the problems facing programmers has changed. Twenty years ago, programs were designed to process large amounts of data. This required both the program writer and the user to be professionals in the field of computer science. The main idea of structural programming is fully consistent with the principle of “divide and conquer”. In this case, a computer program is considered to consist of a set of problems. An arbitrary problem that is too complex for a simple description is divided into several relatively smaller structural problems, and the process of division is continued until the problems become simple enough to understand. Structural programming has become a fairly successful method for solving complex problems. However, in the late 1980s, some shortcomings of structural programming also became apparent: First, it did not provide for the natural process of organizing the data (for example, records about employees) and the execution of operations on them (search, edit) into a single whole. On the contrary, procedural programming separated the structure of the given data from the functions that perform operations on that data. Second, programmers were constantly inventing new solutions to old problems. This is often called “reinventing the bicycle.” It is natural to want to be able to use the same blocks of code over and over again in programs. It can be likened to a radio manufacturer assembling a receiver. A designer does not invent a diode and a transistor every time. He simply uses previously made radio components. For many years, this opportunity was not available to software developers.

Conclusion

The final conclusion is that programming languages are one of the most important factors in the modern developing world. They allow the computer to



execute various commands and simplify complex things. Programming languages allow algorithms to be expressed clearly and intelligibly and are the main tool for creating software. Programming languages also come to be seen as being executed by a computer through compilers and interpreters. Currently, C++, Java, PYthon, etc. are the most widely used, as a result, learning and using programming languages effectively is becoming increasingly important, which plays an important role today.

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