

Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. Languages form an approximate spectrum from "low-level" to "high-level"; "low-level" languages are typically more machine-oriented and faster to execute, whereas "high-level" languages are more abstract and easier to use but execute less quickly. Techniques like Code refactoring can enhance readability. It is very difficult to determine what are the most popular modern programming languages. Some of these factors include: The presentation aspects of this (such as indents, line breaks, color highlighting, and so on) are often handled by the source code editor, but the content aspects reflect the programmer's talent and skills. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. Some of these factors include: The presentation aspects of this (such as indents, line breaks, color highlighting, and so on) are often handled by the source code editor, but the content aspects reflect the programmer's talent and skills. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. Some languages are more prone to some kinds of faults because their specification does not require compilers to perform as much checking as other languages. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. FORTRAN, the first widely used high-level language to have a functional implementation, came out in 1957, and many other languages were soon developed—in particular, COBOL aimed at commercial data processing, and Lisp for computer research. FORTRAN, the first widely used high-level language to have a functional implementation, came out in 1957, and many other languages were soon developed—in particular, COBOL aimed at commercial data processing, and Lisp for computer research. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). Assembly languages were soon developed that let the programmer specify instruction in a text format (e.g., ADD X, TOTAL), with abbreviations for each operation code and meaningful names for specifying addresses. The following properties are among the most important: In computer programming, readability refers to the ease with which a human reader can comprehend the purpose, control flow, and operation of source code. However, because an assembly language is little more than a different notation for a machine language, two machines with different instruction sets also have different assembly languages. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. Different programming languages support different styles of programming (called programming paradigms). The academic field and the engineering practice of computer programming are both largely concerned with discovering and implementing the most efficient algorithms for a given class of problems. Code-breaking algorithms have also existed for centuries. For example, COBOL is still strong in corporate data centers often on large mainframe computers, Fortran in engineering applications, scripting languages in Web development, and C in embedded software. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.