

Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. 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. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. Techniques like Code refactoring can enhance readability. Programming languages are essential for software development. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. It is very difficult to determine what are the most popular modern programming languages. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. 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. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. Auxiliary tasks accompanying and related to programming include analyzing requirements, testing, debugging (investigating and fixing problems), implementation of build systems, and management of derived artifacts, such as programs' machine code. Programming languages are essential for software development. Various visual programming languages have also been developed with the intent to resolve readability concerns by adopting non-traditional approaches to code structure and display. Integrated development environments (IDEs) aim to integrate all such help. Also, specific user environment and usage history can make it difficult to reproduce the problem. Use of a static code analysis tool can help detect some possible problems. Debugging is often done with IDEs. Standalone debuggers like GDB are also used, and these often provide less of a visual environment, usually using a command line. Also, specific user environment and usage history can make it difficult to reproduce the problem. Following a consistent programming style often helps readability. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Programmers typically use high-level programming languages that are more easily intelligible to humans than machine code, which is directly executed by the central processing unit. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). Provided the functions in a library follow the appropriate run-time conventions (e.g., method of passing arguments), then these functions may be written in any other language. Auxiliary tasks accompanying and related to programming include analyzing requirements, testing, debugging (investigating and fixing problems), implementation of build systems, and management of derived artifacts, such as programs' machine code.