

Readability is important because programmers spend the majority of their time reading, trying to understand, reusing and modifying existing source code, rather than writing new source code. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. 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. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. Readability is important because programmers spend the majority of their time reading, trying to understand, reusing and modifying existing source code, rather than writing new source code. 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. Trade-offs from this ideal involve finding enough programmers who know the language to build a team, the availability of compilers for that language, and the efficiency with which programs written in a given language execute. When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear. Unreadable code often leads to bugs, inefficiencies, and duplicated code. Code-breaking algorithms have also existed for centuries. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. The choice of language used is subject to many considerations, such as company policy, suitability to task, availability of third-party packages, or individual preference. While these are sometimes considered programming, often the term software development is used for this larger overall process – with the terms programming, implementation, and coding reserved for the writing and editing of code per se. 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. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. Unreadable code often leads to bugs, inefficiencies, and duplicated code. Programming languages are essential for software development. However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory. New languages are generally designed around the syntax of a prior language with new functionality added, (for example C++ adds object-orientation to C, and Java adds memory management and bytecode to C++, but as a result, loses efficiency and the ability for low-level manipulation). 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. When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.