

A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. These compiled languages allow the programmer to write programs in terms that are syntactically richer, and more capable of abstracting the code, making it easy to target varying machine instruction sets via compilation declarations and heuristics. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. Many programmers use forms of Agile software development where the various stages of formal software development are more integrated together into short cycles that take a few weeks rather than years. 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. Normally the first step in debugging is to attempt to reproduce the problem. Allen Downey, in his book *How To Think Like A Computer Scientist*, writes: Many computer languages provide a mechanism to call functions provided by shared libraries. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. 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. One approach popular for requirements analysis is Use Case analysis. Different programming languages support different styles of programming (called programming paradigms). This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. There are many approaches to the Software development process. Normally the first step in debugging is to attempt to reproduce the problem. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. It is usually easier to code in "high-level" languages than in "low-level" ones. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. For this purpose, algorithms are classified into orders using so-called Big O notation, which expresses resource use, such as execution time or memory consumption, in terms of the size of an input. Whatever the approach to development may be, the final program must satisfy some fundamental properties. 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. Many programmers use forms of Agile software development where the various stages of formal software development are more integrated together into short cycles that take a few weeks rather than years. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. 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.