

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. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. 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. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. Ideally, the programming language best suited for the task at hand will be selected. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. There exist a lot of different approaches for each of those 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. Whatever the approach to development may be, the final program must satisfy some fundamental properties. Techniques like Code refactoring can enhance readability. 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. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. Expert programmers are familiar with a variety of well-established algorithms and their respective complexities and use this knowledge to choose algorithms that are best suited to the circumstances. 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. 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. It is usually easier to code in "high-level" languages than in "low-level" ones. 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. 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. However, readability is more than just programming style. Whatever the approach to development may be, the final program must satisfy some fundamental properties. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. 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.