

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. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Different programming languages support different styles of programming (called programming paradigms). 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. Code-breaking algorithms have also existed for centuries. Trial-and-error/divide-and-conquer is needed: the programmer will try to remove some parts of the original test case and check if the problem still exists. 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. 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. Use of a static code analysis tool can help detect some possible problems. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. Integrated development environments (IDEs) aim to integrate all such help. It affects the aspects of quality above, including portability, usability and most importantly maintainability. It is usually easier to code in "high-level" languages than in "low-level" ones. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). 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. 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. 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. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. It affects the aspects of quality above, including portability, usability and most importantly maintainability. 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. Use of a static code analysis tool can help detect some possible problems. Computer programmers are those who write computer software. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. 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.