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. It affects the aspects of quality above, including portability, usability and most importantly maintainability. 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. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). 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. Proficient programming usually requires expertise in several different subjects, including knowledge of the application domain, details of programming languages and generic code libraries, specialized algorithms, and formal logic. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. Programs were mostly entered using punched cards or paper tape. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. 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. There are many approaches to the Software development process. Proficient programming usually requires expertise in several different subjects, including knowledge of the application domain, details of programming languages and generic code libraries, specialized algorithms, and formal logic. There are many approaches to the Software development process. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. 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. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. For example, when a bug in a compiler can make it crash when parsing some large source file, a simplification of the test case that results in only few lines from the original source file can be sufficient to reproduce the same crash. Use of a static code analysis tool can help detect some possible problems. For example, when a bug in a compiler can make it crash when parsing some large source file, a simplification of the test case that results in only few lines from the original source file can be sufficient to reproduce the same crash. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.