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..  
 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.  
Use of a static code analysis tool can help detect some possible problems.  
 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.  
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, readability is more than just programming style.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.  
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.  
Also, specific user environment and usage history can make it difficult to reproduce the problem.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
As early as the 9th century, a programmable music sequencer was invented by the Persian Banu Musa brothers, who described an automated mechanical flute player in the Book of Ingenious Devices.  
It affects the aspects of quality above, including portability, usability and most importantly maintainability.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
 Different programming languages support different styles of programming (called programming paradigms).  
 The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging).