Ideally, the programming language best suited for the task at hand will be selected..  
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.  
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.  
 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.  
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.  
 Code-breaking algorithms have also existed for centuries.  
It is usually easier to code in "high-level" languages than in "low-level" ones.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
Later a control panel (plug board) added to his 1906 Type I Tabulator allowed it to be programmed for different jobs, and by the late 1940s, unit record equipment such as the IBM 602 and IBM 604, were programmed by control panels in a similar way, as were the first electronic computers.  
It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages.  
Also, specific user environment and usage history can make it difficult to reproduce the problem.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
 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.  
Programming languages are essential for software development.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.