A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
Methods of measuring programming language popularity include: counting the number of job advertisements that mention the language, the number of books sold and courses teaching the language (this overestimates the importance of newer languages), and estimates of the number of existing lines of code written in the language (this underestimates the number of users of business languages such as COBOL).  
Also, those involved with software development may at times engage in reverse engineering, which is the practice of seeking to understand an existing program so as to re-implement its function in some way.  
Use of a static code analysis tool can help detect some possible problems.  
However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory.  
Proficient programming thus usually requires expertise in several different subjects, including knowledge of the application domain, specialized algorithms, and formal logic.  
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.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
To produce machine code, the source code must either be compiled or transpiled.  
Compiling takes the source code from a low-level programming language and converts it into machine code.  
Integrated development environments (IDEs) aim to integrate all such help.  
However, while these might be considered part of the programming process, often the term software development is more likely used for this larger overall process – whereas the terms programming, implementation, and coding tend to be focused on the actual writing of code.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
 Code-breaking algorithms have also existed for centuries.