For example, COBOL is still strong in corporate data centers often on large mainframe computers, Fortran in engineering applications, scripting languages in Web development, and C in embedded software..  
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.  
However, because an assembly language is little more than a different notation for a machine language, two machines with different instruction sets also have different assembly languages.  
For this purpose, algorithms are classified into orders using so-called Big O notation, which expresses resource use, such as execution time or memory consumption, in terms of the size of an input.  
 Code-breaking algorithms have also existed for centuries.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
Provided the functions in a library follow the appropriate run-time conventions (e.g., method of passing arguments), then these functions may be written in any other language.  
FORTRAN, the first widely used high-level language to have a functional implementation, came out in 1957, and many other languages were soon developed—in particular, COBOL aimed at commercial data processing, and Lisp for computer research.  
The choice of language used is subject to many considerations, such as company policy, suitability to task, availability of third-party packages, or individual preference.  
 Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications.  
 Computer programmers are those who write computer software.  
Programming languages are essential for software development.  
 The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging).