A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it..  
They are the building blocks for all software, from the simplest applications to the most sophisticated ones.  
 These compiled languages allow the programmer to write programs in terms that are syntactically richer, and more capable of abstracting the code, making it easy to target varying machine instruction sets via compilation declarations and heuristics.  
One approach popular for requirements analysis is Use Case analysis.  
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.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
 Programmable devices have existed for centuries.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
 Debugging is often done with IDEs. Standalone debuggers like GDB are also used, and these often provide less of a visual environment, usually using a command line.  
Normally the first step in debugging is to attempt to reproduce the problem.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
 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.  
Use of a static code analysis tool can help detect some possible problems.  
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.