Normally the first step in debugging is to attempt to reproduce the problem.  
In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.  
Programming involves tasks such as analysis, generating algorithms, profiling algorithms' accuracy and resource consumption, and the implementation of algorithms (usually in a particular programming language, commonly referred to as coding).  
Many applications use a mix of several languages in their construction and use.  
Compiling takes the source code from a low-level programming language and converts it into machine code.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
Some of these factors include:  
 The presentation aspects of this (such as indents, line breaks, color highlighting, and so on) are often handled by the source code editor, but the content aspects reflect the programmer's talent and skills.  
Many applications use a mix of several languages in their construction and use.  
The purpose of programming is to find a sequence of instructions that will automate the performance of a task (which can be as complex as an operating system) on a computer, often for solving a given problem.  
Many applications use a mix of several languages in their construction and use.  
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.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
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.