A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it..  
 Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications.  
Trade-offs from this ideal involve finding enough programmers who know the language to build a team, the availability of compilers for that language, and the efficiency with which programs written in a given language execute.  
Some languages are more prone to some kinds of faults because their specification does not require compilers to perform as much checking as other languages.  
 Programmable devices have existed for centuries.  
Unreadable code often leads to bugs, inefficiencies, and duplicated code.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
 Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA).  
In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.  
There exist a lot of different approaches for each of those tasks.  
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.  
Normally the first step in debugging is to attempt to reproduce the problem.  
As early as the 9th century, a programmable music sequencer was invented by the Persian Banu Musa brothers, who described an automated mechanical flute player in the Book of Ingenious Devices.  
 A similar technique used for database design is Entity-Relationship Modeling (ER Modeling).  
It is usually easier to code in "high-level" languages than in "low-level" ones.