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.  
Many applications use a mix of several languages in their construction and use.  
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.  
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.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
Unreadable code often leads to bugs, inefficiencies, and duplicated code.  
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.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.  
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.  
In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
Many applications use a mix of several languages in their construction and use.  
 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.