Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process..  
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.  
They are the building blocks for all software, from the simplest applications to the most sophisticated ones.  
Ideally, the programming language best suited for the task at hand will be selected.  
 It is very difficult to determine what are the most popular modern programming languages.  
Proficient programming usually requires expertise in several different subjects, including knowledge of the application domain, details of programming languages and generic code libraries, specialized algorithms, and formal logic.  
Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation.  
 Code-breaking algorithms have also existed for centuries.  
 Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA).  
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.  
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.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
 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.