Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards..  
Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
 Programs were mostly entered using punched cards or paper tape.  
Unreadable code often leads to bugs, inefficiencies, and duplicated code.  
 Computer programmers are those who write computer software.  
By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers.  
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 programmers use forms of Agile software development where the various stages of formal software development are more integrated together into short cycles that take a few weeks rather than years.  
 Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.  
When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear.  
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.  
In 1206, the Arab engineer Al-Jazari invented a programmable drum machine where a musical mechanical automaton could be made to play different rhythms and drum patterns, via pegs and cams.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process.