Programs were mostly entered using punched cards or paper tape..  
  
 Computer programmers are those who write computer software.  
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 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.  
 Auxiliary tasks accompanying and related to programming include analyzing requirements, testing, debugging (investigating and fixing problems), implementation of build systems, and management of derived artifacts, such as programs' machine code.  
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.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.  
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.  
It affects the aspects of quality above, including portability, usability and most importantly maintainability.  
Methods of measuring programming language popularity include: counting the number of job advertisements that mention the language, the number of books sold and courses teaching the language (this overestimates the importance of newer languages), and estimates of the number of existing lines of code written in the language (this underestimates the number of users of business languages such as COBOL).  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
Also, specific user environment and usage history can make it difficult to reproduce the problem.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.  
 In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form.