The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'..  
 Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.  
Expert programmers are familiar with a variety of well-established algorithms and their respective complexities and use this knowledge to choose algorithms that are best suited to the circumstances.  
 Computer programmers are those who write computer software.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
There exist a lot of different approaches for each of those tasks.  
  
 Different programming languages support different styles of programming (called programming paradigms).  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
Later a control panel (plug board) added to his 1906 Type I Tabulator allowed it to be programmed for different jobs, and by the late 1940s, unit record equipment such as the IBM 602 and IBM 604, were programmed by control panels in a similar way, as were the first electronic computers.  
 Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications.  
For example, when a bug in a compiler can make it crash when parsing some large source file, a simplification of the test case that results in only few lines from the original source file can be sufficient to reproduce the same crash.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.