Proficient programming thus usually requires expertise in several different subjects, including knowledge of the application domain, specialized algorithms, and formal logic.  
Techniques like Code refactoring can enhance readability.  
Programming languages are essential for software development.  
Relatedly, software engineering combines engineering techniques and principles with software development.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
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.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.  
 Code-breaking algorithms have also existed for centuries.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
 It is very difficult to determine what are the most popular modern programming languages.  
 Code-breaking algorithms have also existed for centuries.  
  
The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'.  
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.  
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.  
 Code-breaking algorithms have also existed for centuries.