However, Charles Babbage had already written his first program for the Analytical Engine in 1837..  
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.  
  
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.  
  
 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.  
 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.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
Normally the first step in debugging is to attempt to reproduce the problem.  
Some languages are more prone to some kinds of faults because their specification does not require compilers to perform as much checking as other languages.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
One approach popular for requirements analysis is Use Case analysis.  
 Different programming languages support different styles of programming (called programming paradigms).  
They are the building blocks for all software, from the simplest applications to the most sophisticated ones.  
Their jobs usually involve:  
 Although programming has been presented in the media as a somewhat mathematical subject, some research shows that good programmers have strong skills in natural human languages, and that learning to code is similar to learning a foreign language.