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.  
 Code-breaking algorithms have also existed for centuries.  
 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.  
Scripting and breakpointing is also part of this process.  
By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers.  
Unreadable code often leads to bugs, inefficiencies, and duplicated code.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
It is usually easier to code in "high-level" languages than in "low-level" ones.  
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.  
  
The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'.  
Proficient programming usually requires expertise in several different subjects, including knowledge of the application domain, details of programming languages and generic code libraries, specialized algorithms, and formal logic.