In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages..  
In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.  
There are many approaches to the Software development process.  
 Different programming languages support different styles of programming (called programming paradigms).  
Integrated development environments (IDEs) aim to integrate all such help.  
Use of a static code analysis tool can help detect some possible problems.  
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.  
It affects the aspects of quality above, including portability, usability and most importantly maintainability.  
When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear.  
 Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.  
 The first computer program is generally dated to 1843, when mathematician Ada Lovelace published an algorithm to calculate a sequence of Bernoulli numbers, intended to be carried out by Charles Babbage's Analytical Engine.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
 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.  
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.