However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory..  
Integrated development environments (IDEs) aim to integrate all such help.  
 Code-breaking algorithms have also existed for centuries.  
Programming languages are essential for software development.  
 In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
As early as the 9th century, a programmable music sequencer was invented by the Persian Banu Musa brothers, who described an automated mechanical flute player in the Book of Ingenious Devices.  
 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 choice of language used is subject to many considerations, such as company policy, suitability to task, availability of third-party packages, or individual preference.  
  
Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
 Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.  
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.