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..  
 Computer programmers are those who write computer software.  
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.  
 In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form.  
However, because an assembly language is little more than a different notation for a machine language, two machines with different instruction sets also have different assembly languages.  
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.  
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.  
Scripting and breakpointing is also part of this process.  
 Allen Downey, in his book How To Think Like A Computer Scientist, writes:  
 Many computer languages provide a mechanism to call functions provided by shared libraries.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.  
Techniques like Code refactoring can enhance readability.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
Integrated development environments (IDEs) aim to integrate all such help.  
While these are sometimes considered programming, often the term software development is used for this larger overall process – with the terms programming, implementation, and coding reserved for the writing and editing of code per se.  
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.