Expert programmers are familiar with a variety of well-established algorithms and their respective complexities and use this knowledge to choose algorithms that are best suited to the circumstances..  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
 Various visual programming languages have also been developed with the intent to resolve readability concerns by adopting non-traditional approaches to code structure and display.  
 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.  
There are many approaches to the Software development process.  
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.  
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.  
 A similar technique used for database design is Entity-Relationship Modeling (ER Modeling).  
 In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form.  
 Whatever the approach to development may be, the final program must satisfy some fundamental properties.  
Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
 The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging).  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.