Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation.  
The purpose of programming is to find a sequence of instructions that will automate the performance of a task (which can be as complex as an operating system) on a computer, often for solving a given problem.  
One approach popular for requirements analysis is Use Case analysis.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
Methods of measuring programming language popularity include: counting the number of job advertisements that mention the language, the number of books sold and courses teaching the language (this overestimates the importance of newer languages), and estimates of the number of existing lines of code written in the language (this underestimates the number of users of business languages such as COBOL).  
Compiling takes the source code from a low-level programming language and converts it into machine code.  
Unreadable code often leads to bugs, inefficiencies, and duplicated code.  
Techniques like Code refactoring can enhance readability.  
To produce machine code, the source code must either be compiled or transpiled.  
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.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
However, while these might be considered part of the programming process, often the term software development is more likely used for this larger overall process – whereas the terms programming, implementation, and coding tend to be focused on the actual writing of code.  
For this purpose, algorithms are classified into orders using so-called Big O notation, which expresses resource use, such as execution time or memory consumption, in terms of the size of an input.  
 In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form.  
Languages form an approximate spectrum from "low-level" to "high-level"; "low-level" languages are typically more machine-oriented and faster to execute, whereas "high-level" languages are more abstract and easier to use but execute less quickly.