However, Charles Babbage had already written his first program for the Analytical Engine in 1837..  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation.  
They are the building blocks for all software, from the simplest applications to the most sophisticated ones.  
Ideally, the programming language best suited for the task at hand will be selected.  
FORTRAN, the first widely used high-level language to have a functional implementation, came out in 1957, and many other languages were soon developed—in particular, COBOL aimed at commercial data processing, and Lisp for computer research.  
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.  
 Debugging is often done with IDEs. Standalone debuggers like GDB are also used, and these often provide less of a visual environment, usually using a command line.  
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.  
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.  
 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.  
 High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware.  
However, readability is more than just programming style.  
 New languages are generally designed around the syntax of a prior language with new functionality added, (for example C++ adds object-orientation to C, and Java adds memory management and bytecode to C++, but as a result, loses efficiency and the ability for low-level manipulation).  
 Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.