They are the building blocks for all software, from the simplest applications to the most sophisticated ones..  
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.  
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.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.  
It is usually easier to code in "high-level" languages than in "low-level" ones.  
Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation.  
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, readability is more than just programming style.  
Integrated development environments (IDEs) aim to integrate all such help.  
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.  
Unreadable code often leads to bugs, inefficiencies, and duplicated code.  
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.  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
 Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.