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..  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
However, readability is more than just programming style.  
  
The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'.  
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.  
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.  
Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation.  
Many programmers use forms of Agile software development where the various stages of formal software development are more integrated together into short cycles that take a few weeks rather than years.  
Their jobs usually involve:  
 Although programming has been presented in the media as a somewhat mathematical subject, some research shows that good programmers have strong skills in natural human languages, and that learning to code is similar to learning a foreign language.  
Programmers typically use high-level programming languages that are more easily intelligible to humans than machine code, which is directly executed by the central processing unit.  
They are the building blocks for all software, from the simplest applications to the most sophisticated ones.  
 Whatever the approach to development may be, the final program must satisfy some fundamental properties.  
 A similar technique used for database design is Entity-Relationship Modeling (ER Modeling).  
It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages.