As early as the 9th century, a programmable music sequencer was invented by the Persian Banu Musa brothers, who described an automated mechanical flute player in the Book of Ingenious Devices..  
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.  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
 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.  
Assembly languages were soon developed that let the programmer specify instruction in a text format (e.g., ADD X, TOTAL), with abbreviations for each operation code and meaningful names for specifying addresses.  
 Code-breaking algorithms have also existed for centuries.  
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.  
Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process.  
 A similar technique used for database design is Entity-Relationship Modeling (ER Modeling).  
 These compiled languages allow the programmer to write programs in terms that are syntactically richer, and more capable of abstracting the code, making it easy to target varying machine instruction sets via compilation declarations and heuristics.  
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.  
 Following a consistent programming style often helps readability.  
 Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications.  
 Programs were mostly entered using punched cards or paper tape.  
 Whatever the approach to development may be, the final program must satisfy some fundamental properties.