In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them..  
 The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging).  
 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.  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.  
 It is very difficult to determine what are the most popular modern programming languages.  
 In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form.  
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.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
 High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware.  
 Following a consistent programming style often helps readability.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
 Computer programmers are those who write computer software.