Also, specific user environment and usage history can make it difficult to reproduce the problem..  
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.  
 In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
 Computer programmers are those who write computer software.  
 Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
  
 It is very difficult to determine what are the most popular modern programming languages.  
Trade-offs from this ideal involve finding enough programmers who know the language to build a team, the availability of compilers for that language, and the efficiency with which programs written in a given language execute.  
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.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.