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..  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
 Following a consistent programming style often helps readability.  
Normally the first step in debugging is to attempt to reproduce the problem.  
Programming languages are essential for software development.  
It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages.  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
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.  
Use of a static code analysis tool can help detect some possible problems.  
Trial-and-error/divide-and-conquer is needed: the programmer will try to remove some parts of the original test case and check if the problem still exists.  
  
  
The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'.  
By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers.  
 Code-breaking algorithms have also existed for centuries.  
There are many approaches to the Software development process.