In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.  
In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.  
The purpose of programming is to find a sequence of instructions that will automate the performance of a task (which can be as complex as an operating system) on a computer, often for solving a given problem.  
Use of a static code analysis tool can help detect some possible problems.  
There are many approaches to the Software development process.  
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.  
Compiling takes the source code from a low-level programming language and converts it into machine code.  
Integrated development environments (IDEs) aim to integrate all such help.  
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.  
Integrated development environments (IDEs) aim to integrate all such help.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
Integrated development environments (IDEs) aim to integrate all such help.  
 Debugging is often done with IDEs. Standalone debuggers like GDB are also used, and these often provide less of a visual environment, usually using a command line.  
By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers.  
However, because an assembly language is little more than a different notation for a machine language, two machines with different instruction sets also have different assembly languages.