In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.  
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.  
For example, COBOL is still strong in corporate data centers often on large mainframe computers, Fortran in engineering applications, scripting languages in Web development, and C in embedded software.  
Many programmers use forms of Agile software development where the various stages of formal software development are more integrated together into short cycles that take a few weeks rather than years.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
Also, specific user environment and usage history can make it difficult to reproduce the problem.  
Normally the first step in debugging is to attempt to reproduce the problem.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
It is usually easier to code in "high-level" languages than in "low-level" ones.  
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.  
Transpiling on the other hand, takes the source-code from a high-level programming language and converts it into bytecode.  
It is usually easier to code in "high-level" languages than in "low-level" ones.  
In 1206, the Arab engineer Al-Jazari invented a programmable drum machine where a musical mechanical automaton could be made to play different rhythms and drum patterns, via pegs and cams.  
There are many approaches to the Software development process.  
 Whatever the approach to development may be, the final program must satisfy some fundamental properties.