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, when a bug in a compiler can make it crash when parsing some large source file, a simplification of the test case that results in only few lines from the original source file can be sufficient to reproduce the same crash.  
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.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
There exist a lot of different approaches for each of those tasks.  
Relatedly, software engineering combines engineering techniques and principles with software development.  
Programming languages are essential for software development.  
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.  
Their jobs usually involve:  
 Although programming has been presented in the media as a somewhat mathematical subject, some research shows that good programmers have strong skills in natural human languages, and that learning to code is similar to learning a foreign language.  
In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.  
 Different programming languages support different styles of programming (called programming paradigms).  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
It is usually easier to code in "high-level" languages than in "low-level" ones.  
 Tasks accompanying and related to programming include testing, debugging, source code maintenance, implementation of build systems, and management of derived artifacts, such as the machine code of computer programs.