He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm..  
 The academic field and the engineering practice of computer programming are both largely concerned with discovering and implementing the most efficient algorithms for a given class of problems.  
 In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form.  
 Computer programmers are those who write computer software.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.  
 Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.  
However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory.  
There exist a lot of different approaches for each of those tasks.  
 Different programming languages support different styles of programming (called programming paradigms).  
Expert programmers are familiar with a variety of well-established algorithms and their respective complexities and use this knowledge to choose algorithms that are best suited to the circumstances.  
It affects the aspects of quality above, including portability, usability and most importantly maintainability.  
 New languages are generally designed around the syntax of a prior language with new functionality added, (for example C++ adds object-orientation to C, and Java adds memory management and bytecode to C++, but as a result, loses efficiency and the ability for low-level manipulation).  
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.  
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.