Normally the first step in debugging is to attempt to reproduce the problem..  
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.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
FORTRAN, the first widely used high-level language to have a functional implementation, came out in 1957, and many other languages were soon developed—in particular, COBOL aimed at commercial data processing, and Lisp for computer research.  
Also, specific user environment and usage history can make it difficult to reproduce the problem.  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
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.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.  
Languages form an approximate spectrum from "low-level" to "high-level"; "low-level" languages are typically more machine-oriented and faster to execute, whereas "high-level" languages are more abstract and easier to use but execute less quickly.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
However, readability is more than just programming style.  
 Following a consistent programming style often helps readability.  
 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.  
In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.