Readability is important because programmers spend the majority of their time reading, trying to understand, reusing and modifying existing source code, rather than writing new source code..  
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.  
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.  
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.  
In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.  
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.  
 Auxiliary tasks accompanying and related to programming include analyzing requirements, testing, debugging (investigating and fixing problems), implementation of build systems, and management of derived artifacts, such as programs' machine code.  
Many applications use a mix of several languages in their construction and use.  
Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
  
The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'.  
Ideally, the programming language best suited for the task at hand will be selected.