Unreadable code often leads to bugs, inefficiencies, and duplicated code..  
Trade-offs from this ideal involve finding enough programmers who know the language to build a team, the availability of compilers for that language, and the efficiency with which programs written in a given language execute.  
Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process.  
By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers.  
Scripting and breakpointing is also part of this process.  
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.  
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.  
  
One approach popular for requirements analysis is Use Case analysis.  
Proficient programming usually requires expertise in several different subjects, including knowledge of the application domain, details of programming languages and generic code libraries, specialized algorithms, and formal logic.  
In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
 Whatever the approach to development may be, the final program must satisfy some fundamental properties.  
Programmers typically use high-level programming languages that are more easily intelligible to humans than machine code, which is directly executed by the central processing unit.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.