A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
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.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
Some of these factors include:  
 The presentation aspects of this (such as indents, line breaks, color highlighting, and so on) are often handled by the source code editor, but the content aspects reflect the programmer's talent and skills.  
Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability.  
Integrated development environments (IDEs) aim to integrate all such help.  
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.  
When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear.  
Integrated development environments (IDEs) aim to integrate all such help.  
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.  
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.  
 High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware.  
 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.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.