To produce machine code, the source code must either be compiled or transpiled.  
In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.  
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.  
Assembly languages were soon developed that let the programmer specify instruction in a text format (e.g., ADD X, TOTAL), with abbreviations for each operation code and meaningful names for specifying addresses.  
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.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
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.  
Provided the functions in a library follow the appropriate run-time conventions (e.g., method of passing arguments), then these functions may be written in any other language.  
Programming languages are essential for software development.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.  
Programming languages are essential for software development.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.  
 Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications.  
There exist a lot of different approaches for each of those tasks.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.