Ideally, the programming language best suited for the task at hand will be selected.  
There exist a lot of different approaches for each of those tasks.  
In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.  
Unreadable code often leads to bugs, inefficiencies, and duplicated code.  
Ideally, the programming language best suited for the task at hand will be selected.  
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.  
To produce machine code, the source code must either be compiled or transpiled.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
There exist a lot of different approaches for each of those tasks.  
The source code of a program is written in one or more languages that are intelligible to programmers, rather than machine code, which is directly executed by the central processing unit.  
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.  
Integrated development environments (IDEs) aim to integrate all such help.  
Proficient programming thus usually requires expertise in several different subjects, including knowledge of the application domain, specialized algorithms, and formal logic.  
Proficient programming thus usually requires expertise in several different subjects, including knowledge of the application domain, specialized algorithms, and formal logic.  
For this purpose, algorithms are classified into orders using so-called Big O notation, which expresses resource use, such as execution time or memory consumption, in terms of the size of an input.