

However, readability is more than just programming style. There exist a lot of different approaches for each of those tasks. Whatever the approach to development may be, the final program must satisfy some fundamental properties. While these are sometimes considered programming, often the term software development is used for this larger overall process – with the terms programming, implementation, and coding reserved for the writing and editing of code per se. There exist a lot of different approaches for each of those tasks. 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. Many applications use a mix of several languages in their construction and use. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. It affects the aspects of quality above, including portability, usability and most importantly maintainability. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation. 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. These compiled languages allow the programmer to write programs in terms that are syntactically richer, and more capable of abstracting the code, making it easy to target varying machine instruction sets via compilation declarations and heuristics. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. Techniques like Code refactoring can enhance readability. 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. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. Programs were mostly entered using punched cards or paper tape. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. While these are sometimes considered programming, often the term software development is used for this larger overall process – with the terms programming, implementation, and coding reserved for the writing and editing of code per se. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. 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. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling).