

Following a consistent programming style often helps readability. 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. Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. For example, COBOL is still strong in corporate data centers often on large mainframe computers, Fortran in engineering applications, scripting languages in Web development, and C in embedded software. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. 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. Readability is important because programmers spend the majority of their time reading, trying to understand, reusing and modifying existing source code, rather than writing new source code. Various visual programming languages have also been developed with the intent to resolve readability concerns by adopting non-traditional approaches to code structure and display. 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. 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. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. One approach popular for requirements analysis is Use Case analysis. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. Whatever the approach to development may be, the final program must satisfy some fundamental properties. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. One approach popular for requirements analysis is Use Case analysis. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). It is usually easier to code in "high-level" languages than in "low-level" ones. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. Different programming languages support different styles of programming (called programming paradigms). High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. It affects the aspects of quality above, including portability, usability and most importantly maintainability.