

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. The following properties are among the most important: In computer programming, readability refers to the ease with which a human reader can comprehend the purpose, control flow, and operation of source code. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. Whatever the approach to development may be, the final program must satisfy some fundamental properties. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. Programming languages are essential for software development. 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. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. Ideally, the programming language best suited for the task at hand will be selected. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. FORTRAN, the first widely used high-level language to have a functional implementation, came out in 1957, and many other languages were soon developed—in particular, COBOL aimed at commercial data processing, and Lisp for computer research. There are many approaches to the Software development process. Scripting and breakpointing is also part of this process. 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. It affects the aspects of quality above, including portability, usability and most importantly maintainability. Different programming languages support different styles of programming (called programming paradigms). Some languages are more prone to some kinds of faults because their specification does not require compilers to perform as much checking as other languages. 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. 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. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). 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. Different programming languages support different styles of programming (called programming paradigms). It is very difficult to determine what are the most popular modern programming languages. 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.