

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. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. 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. One approach popular for requirements analysis is Use Case analysis. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. The choice of language used is subject to many considerations, such as company policy, suitability to task, availability of third-party packages, or individual preference. There exist a lot of different approaches for each of those tasks. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. Programs were mostly entered using punched cards or paper tape. It is usually easier to code in "high-level" languages than in "low-level" ones. Techniques like Code refactoring can enhance readability. The first computer program is generally dated to 1843, when mathematician Ada Lovelace published an algorithm to calculate a sequence of Bernoulli numbers, intended to be carried out by Charles Babbage's Analytical Engine. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. Later a control panel (plug board) added to his 1906 Type I Tabulator allowed it to be programmed for different jobs, and by the late 1940s, unit record equipment such as the IBM 602 and IBM 604, were programmed by control panels in a similar way, as were the first electronic computers. The choice of language used is subject to many considerations, such as company policy, suitability to task, availability of third-party packages, or individual preference. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. 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. 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. Expert programmers are familiar with a variety of well-established algorithms and their respective complexities and use this knowledge to choose algorithms that are best suited to the circumstances. 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. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. 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. It is very difficult to determine what are the most popular modern programming languages. 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.