

High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. 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. 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 academic field and the engineering practice of computer programming are both largely concerned with discovering and implementing the most efficient algorithms for a given class of problems. Allen Downey, in his book *How To Think Like A Computer Scientist*, writes: Many computer languages provide a mechanism to call functions provided by shared libraries. Programs were mostly entered using punched cards or paper tape. Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. Ideally, the programming language best suited for the task at hand will be selected. Many applications use a mix of several languages in their construction and use. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. There exist a lot of different approaches for each of those tasks. In 1206, the Arab engineer Al-Jazari invented a programmable drum machine where a musical mechanical automaton could be made to play different rhythms and drum patterns, via pegs and cams. 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. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. 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. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory. 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. 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. However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. 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. However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory. Programs were mostly entered using punched cards or paper tape.