

As early as the 9th century, a programmable music sequencer was invented by the Persian Banu Musa brothers, who described an automated mechanical flute player in the Book of Ingenious Devices. However, readability is more than just programming style. It is usually easier to code in "high-level" languages than in "low-level" ones. 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. Programs were mostly entered using punched cards or paper tape. Their jobs usually involve: Although programming has been presented in the media as a somewhat mathematical subject, some research shows that good programmers have strong skills in natural human languages, and that learning to code is similar to learning a foreign language. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. 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. 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. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. Many applications use a mix of several languages in their construction and use. Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. New languages are generally designed around the syntax of a prior language with new functionality added, (for example C++ adds object-orientation to C, and Java adds memory management and bytecode to C++, but as a result, loses efficiency and the ability for low-level manipulation). After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. There exist a lot of different approaches for each of those tasks. Programmable devices have existed for centuries. Whatever the approach to development may be, the final program must satisfy some fundamental properties. Their jobs usually involve: Although programming has been presented in the media as a somewhat mathematical subject, some research shows that good programmers have strong skills in natural human languages, and that learning to code is similar to learning a foreign language. There exist a lot of different approaches for each of those tasks. 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. 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. 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.