

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. 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. 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. 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. 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. 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. Techniques like Code refactoring can enhance readability. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. 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. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. There exist a lot of different approaches for each of those tasks. There are many approaches to the Software development process. Programmable devices have existed for centuries. 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. Following a consistent programming style often helps readability. There are many approaches to the Software development process. Many applications use a mix of several languages in their construction and use. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. Techniques like Code refactoring can enhance readability. 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. 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). In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. 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.