

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. Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. One approach popular for requirements analysis is Use Case analysis. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. 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. 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. Scripting and breakpointing is also part of this process. 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. Integrated development environments (IDEs) aim to integrate all such help. 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. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. Following a consistent programming style often helps readability. Many applications use a mix of several languages in their construction and use. Normally the first step in debugging is to attempt to reproduce the problem. 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. 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. 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. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. Integrated development environments (IDEs) aim to integrate all such help. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. Use of a static code analysis tool can help detect some possible problems. Programmable devices have existed for centuries.