

In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Use of a static code analysis tool can help detect some possible problems. Trial-and-error/divide-and-conquer is needed: the programmer will try to remove some parts of the original test case and check if the problem still exists. Normally the first step in debugging is to attempt to reproduce the problem. 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. Programming languages are essential for software development. 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. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. There are many approaches to the Software development process. However, readability is more than just programming style. 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. 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. 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, Charles Babbage had already written his first program for the Analytical Engine in 1837. Many applications use a mix of several languages in their construction and use. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. There are many approaches to the Software development process. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. 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. 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. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. Debugging is often done with IDEs. Standalone debuggers like GDB are also used, and these often provide less of a visual environment, usually using a command line.