

It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. Also, specific user environment and usage history can make it difficult to reproduce the problem. Programmers typically use high-level programming languages that are more easily intelligible to humans than machine code, which is directly executed by the central processing unit. 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. Following a consistent programming style often helps readability. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. Programmable devices have existed for centuries. Many applications use a mix of several languages in their construction and use. 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. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. Programming languages are essential for software development. However, readability is more than just programming style. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. For example, when a bug in a compiler can make it crash when parsing some large source file, a simplification of the test case that results in only few lines from the original source file can be sufficient to reproduce the same crash. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. Some of these factors include: The presentation aspects of this (such as indents, line breaks, color highlighting, and so on) are often handled by the source code editor, but the content aspects reflect the programmer's talent and skills. 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. Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation. Many applications use a mix of several languages in their construction and use. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. Whatever the approach to development may be, the final program must satisfy some fundamental properties.