

There exist a lot of different approaches for each of those tasks. 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. There exist a lot of different approaches for each of those tasks. Whatever the approach to development may be, the final program must satisfy some fundamental properties. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. 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. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). Many applications use a mix of several languages in their construction and use. For this purpose, algorithms are classified into orders using so-called Big O notation, which expresses resource use, such as execution time or memory consumption, in terms of the size of an input. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. 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. 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. Many applications use a mix of several languages in their construction and use. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Also, specific user environment and usage history can make it difficult to reproduce the problem. 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. Different programming languages support different styles of programming (called programming paradigms). In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. Code-breaking algorithms have also existed for centuries. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Techniques like Code refactoring can enhance readability. 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. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. 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. Also, specific user environment and usage history can make it difficult to reproduce the problem.