

Following a consistent programming style often helps readability. 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. While these are sometimes considered programming, often the term software development is used for this larger overall process – with the terms programming, implementation, and coding reserved for the writing and editing of code per se. There exist a lot of different approaches for each of those tasks. 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.

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. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. Also, specific user environment and usage history can make it difficult to reproduce the problem. The choice of language used is subject to many considerations, such as company policy, suitability to task, availability of third-party packages, or individual preference. 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. 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. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). 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. 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. Techniques like Code refactoring can enhance readability. 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. Scripting and breakpointing is also part of this process. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. Unreadable code often leads to bugs, inefficiencies, and duplicated code. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. Readability is important because programmers spend the majority of their time reading, trying to understand, reusing and modifying existing source code, rather than writing new source code.