

Unreadable code often leads to bugs, inefficiencies, and duplicated code. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. 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. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Proficient programming usually requires expertise in several different subjects, including knowledge of the application domain, details of programming languages and generic code libraries, specialized algorithms, and formal logic.

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. Techniques like Code refactoring can enhance readability. Code-breaking algorithms have also existed for centuries. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). Unreadable code often leads to bugs, inefficiencies, and duplicated code. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. 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. Code-breaking algorithms have also existed for centuries.

Unreadable code often leads to bugs, inefficiencies, and duplicated code. Use of a static code analysis tool can help detect some possible problems. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. 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.