

Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. Code-breaking algorithms have also existed for centuries. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. Ideally, the programming language best suited for the task at hand will be selected. However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory. However, readability is more than just programming style. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. There exist a lot of different approaches for each of those tasks. Use of a static code analysis tool can help detect some possible problems. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. 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. Integrated development environments (IDEs) aim to integrate all such help. 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. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. Also, specific user environment and usage history can make it difficult to reproduce the problem. It is usually easier to code in "high-level" languages than in "low-level" ones. 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. Normally the first step in debugging is to attempt to reproduce the problem. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. Different programming languages support different styles of programming (called programming paradigms). 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. 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. Many applications use a mix of several languages in their construction and use. Computer programmers are those who write computer software.