

Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. Programming languages are essential for software development. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear. Many applications use a mix of several languages in their construction and use. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. Normally the first step in debugging is to attempt to reproduce the problem. Ideally, the programming language best suited for the task at hand will be selected. 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. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. Ideally, the programming language best suited for the task at hand will be selected. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. Their jobs usually involve: Although programming has been presented in the media as a somewhat mathematical subject, some research shows that good programmers have strong skills in natural human languages, and that learning to code is similar to learning a foreign language. Different programming languages support different styles of programming (called programming paradigms). Debugging is often done with IDEs. Standalone debuggers like GDB are also used, and these often provide less of a visual environment, usually using a command line. 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. Techniques like Code refactoring can enhance readability. Use of a static code analysis tool can help detect some possible problems. Scripting and breakpointing is also part of this process. Various visual programming languages have also been developed with the intent to resolve readability concerns by adopting non-traditional approaches to code structure and display. Following a consistent programming style often helps readability. Programmable devices have existed for centuries.