

Whatever the approach to development may be, the final program must satisfy some fundamental properties. 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. 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. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. 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. 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. Following a consistent programming style often helps readability. 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. 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. Many applications use a mix of several languages in their construction and use. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. 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. 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. Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design 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. However, readability is more than just programming style. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. Integrated development environments (IDEs) aim to integrate all such help. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). Use of a static code analysis tool can help detect some possible problems. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process.