

Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. Programming languages are essential for software development. It affects the aspects of quality above, including portability, usability and most importantly maintainability. Following a consistent programming style often helps readability. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. 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. Scripting and breakpointing is also part of this process. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). 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. 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. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. 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. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. However, readability is more than just programming style. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. For example, when a bug in a compiler can make it crash when parsing some large source file, a simplification of the test case that results in only few lines from the original source file can be sufficient to reproduce the same crash. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. There are many approaches to the Software development process. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. Scripting and breakpointing is also part of this process. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'.