

High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. 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, 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. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. 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. 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. 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. Expert programmers are familiar with a variety of well-established algorithms and their respective complexities and use this knowledge to choose algorithms that are best suited to the circumstances. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. 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. One approach popular for requirements analysis is Use Case analysis. 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. 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. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Some of these factors include: The presentation aspects of this (such as indents, line breaks, color highlighting, and so on) are often handled by the source code editor, but the content aspects reflect the programmer's talent and skills. 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. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. Unreadable code often leads to bugs, inefficiencies, and duplicated code. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. One approach popular for requirements analysis is Use Case analysis. Integrated development environments (IDEs) aim to integrate all such help. Programs were mostly entered using punched cards or paper tape. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. However, Charles Babbage had already written his first program for the Analytical Engine in 1837.