

Methods of measuring programming language popularity include: counting the number of job advertisements that mention the language, the number of books sold and courses teaching the language (this overestimates the importance of newer languages), and estimates of the number of existing lines of code written in the language (this underestimates the number of users of business languages such as COBOL). Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Ideally, the programming language best suited for the task at hand will be selected. 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. As early as the 9th century, a programmable music sequencer was invented by the Persian Banu Musa brothers, who described an automated mechanical flute player in the Book of Ingenious Devices. Code-breaking algorithms have also existed for centuries. Many programmers use forms of Agile software development where the various stages of formal software development are more integrated together into short cycles that take a few weeks rather than years. Following a consistent programming style often helps readability. 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. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. Trade-offs from this ideal involve finding enough programmers who know the language to build a team, the availability of compilers for that language, and the efficiency with which programs written in a given language execute. 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. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. Also, specific user environment and usage history can make it difficult to reproduce the problem. Unreadable code often leads to bugs, inefficiencies, and duplicated code. 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. 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. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. 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. Scripting and breakpointing is also part of this process. Programming languages are essential for software development. FORTRAN, the first widely used high-level language to have a functional implementation, came out in 1957, and many other languages were soon developed—in particular, COBOL aimed at commercial data processing, and Lisp for computer research. Scripting and breakpointing is also part of this process. Ideally, the programming language best suited for the task at hand will be selected. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA).