

It is very difficult to determine what are the most popular modern programming languages. 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. 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. Programs were mostly entered using punched cards or paper tape. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. 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). 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. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. Whatever the approach to development may be, the final program must satisfy some fundamental properties. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. It affects the aspects of quality above, including portability, usability and most importantly maintainability. Programmable devices have existed for centuries. Assembly languages were soon developed that let the programmer specify instruction in a text format (e.g., ADD X, TOTAL), with abbreviations for each operation code and meaningful names for specifying addresses. 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. Different programming languages support different styles of programming (called programming paradigms). 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. These compiled languages allow the programmer to write programs in terms that are syntactically richer, and more capable of abstracting the code, making it easy to target varying machine instruction sets via compilation declarations and heuristics. Also, specific user environment and usage history can make it difficult to reproduce the problem. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation. In 1206, the Arab engineer Al-Jazari invented a programmable drum machine where a musical mechanical automaton could be made to play different rhythms and drum patterns, via pegs and cams. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'.