

Following a consistent programming style often helps readability. Ideally, the programming language best suited for the task at hand will be selected. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. Auxiliary tasks accompanying and related to programming include analyzing requirements, testing, debugging (investigating and fixing problems), implementation of build systems, and management of derived artifacts, such as programs' machine code. Auxiliary tasks accompanying and related to programming include analyzing requirements, testing, debugging (investigating and fixing problems), implementation of build systems, and management of derived artifacts, such as programs' machine code. It is very difficult to determine what are the most popular modern programming languages. 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. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. It is usually easier to code in "high-level" languages than in "low-level" ones. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. 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. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. 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). There exist a lot of different approaches for each of those tasks. However, readability is more than just programming style. Unreadable code often leads to bugs, inefficiencies, and duplicated code. Later a control panel (plug board) added to his 1906 Type I Tabulator allowed it to be programmed for different jobs, and by the late 1940s, unit record equipment such as the IBM 602 and IBM 604, were programmed by control panels in a similar way, as were the first electronic computers. 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. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. It is usually easier to code in "high-level" languages than in "low-level" ones. However, readability is more than just programming style. Computer programmers are those who write computer software. It affects the aspects of quality above, including portability, usability and most importantly maintainability. 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.