

Use of a static code analysis tool can help detect some possible problems. 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). Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. 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. 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. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). However, Charles Babbage had already written his first program for the Analytical Engine in 1837. 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. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). Programming languages are essential for software development. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. 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. 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. 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. 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. However, because an assembly language is little more than a different notation for a machine language, two machines with different instruction sets also have different assembly languages. Languages form an approximate spectrum from "low-level" to "high-level"; "low-level" languages are typically more machine-oriented and faster to execute, whereas "high-level" languages are more abstract and easier to use but execute less quickly. 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). 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. 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. 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. Following a consistent programming style often helps readability. Code-breaking algorithms have also existed for centuries. Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging).