

Some languages are more prone to some kinds of faults because their specification does not require compilers to perform as much checking as other languages. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. 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. Ideally, the programming language best suited for the task at hand will be selected. Programs were mostly entered using punched cards or paper tape. It affects the aspects of quality above, including portability, usability and most importantly maintainability. 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. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. Following a consistent programming style often helps readability. 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. 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. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. 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. 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 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 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. Some languages are more prone to some kinds of faults because their specification does not require compilers to perform as much checking as other languages. Use of a static code analysis tool can help detect some possible problems. Ideally, the programming language best suited for the task at hand will be selected. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. 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. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling).