

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. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. One approach popular for requirements analysis is Use Case analysis. 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. 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. Different programming languages support different styles of programming (called programming paradigms). Also, specific user environment and usage history can make it difficult to reproduce the problem. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. It is very difficult to determine what are the most popular modern programming languages. 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. 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. Unreadable code often leads to bugs, inefficiencies, and duplicated 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, 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. 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. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. 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. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. Programmable devices have existed for centuries. 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. Computer programmers are those who write computer software. 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.