

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. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. Allen Downey, in his book *How To Think Like A Computer Scientist*, writes: Many computer languages provide a mechanism to call functions provided by shared libraries. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Also, specific user environment and usage history can make it difficult to reproduce the problem. Whatever the approach to development may be, the final program must satisfy some fundamental properties. 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). A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation. One approach popular for requirements analysis is Use Case analysis. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. Programmers typically use high-level programming languages that are more easily intelligible to humans than machine code, which is directly executed by the central processing unit. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. 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. One approach popular for requirements analysis is Use Case analysis. There exist a lot of different approaches for each of those tasks. 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. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. One approach popular for requirements analysis is Use Case analysis. Programs were mostly entered using punched cards or paper tape. The first computer program is generally dated to 1843, when mathematician Ada Lovelace published an algorithm to calculate a sequence of Bernoulli numbers, intended to be carried out by Charles Babbage's Analytical Engine. 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.