

Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). Scripting and breakpointing is also part of this process. 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. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. Also, specific user environment and usage history can make it difficult to reproduce the problem. 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. 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. 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. There exist a lot of different approaches for each of those tasks. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. Use of a static code analysis tool can help detect some possible problems. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. Normally the first step in debugging is to attempt to reproduce the problem. Computer programmers are those who write computer software. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). 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. Integrated development environments (IDEs) aim to integrate all such help. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. FORTRAN, the first widely used high-level language to have a functional implementation, came out in 1957, and many other languages were soon developed—in particular, COBOL aimed at commercial data processing, and Lisp for computer research. For this purpose, algorithms are classified into orders using so-called Big O notation, which expresses resource use, such as execution time or memory consumption, in terms of the size of an input. 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. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. There are many approaches to the Software development process. Different programming languages support different styles of programming (called programming paradigms).