

This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. Ideally, the programming language best suited for the task at hand will be selected. 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. 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. 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. Computer programmers are those who write computer software. Use of a static code analysis tool can help detect some possible problems. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). 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. Use of a static code analysis tool can help detect some possible problems. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. However, readability is more than just programming style. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. 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. Readability is important because programmers spend the majority of their time reading, trying to understand, reusing and modifying existing source code, rather than writing new source code. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). For example, when a bug in a compiler can make it crash when parsing some large source file, a simplification of the test case that results in only few lines from the original source file can be sufficient to reproduce the same crash. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability.