

Programmable devices have existed for centuries. Programs were mostly entered using punched cards or paper tape. 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. 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. It is very difficult to determine what are the most popular modern programming languages. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. 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. 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. Code-breaking algorithms have also existed for centuries. Ideally, the programming language best suited for the task at hand will be selected. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Provided the functions in a library follow the appropriate run-time conventions (e.g., method of passing arguments), then these functions may be written in any other language. As early as the 9th century, a programmable music sequencer was invented by the Persian Banu Musa brothers, who described an automated mechanical flute player in the Book of Ingenious Devices. 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. 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. Trial-and-error/divide-and-conquer is needed: the programmer will try to remove some parts of the original test case and check if the problem still exists. It is very difficult to determine what are the most popular modern programming languages. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. 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. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.