

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. 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. 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. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. Techniques like Code refactoring can enhance readability. It is usually easier to code in "high-level" languages than in "low-level" ones. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. Following a consistent programming style often helps readability. There exist a lot of different approaches for each of those tasks. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. 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. Programmable devices have existed for centuries. 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. 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. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. There are many approaches to the Software development process. 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). In 1206, the Arab engineer Al-Jazari invented a programmable drum machine where a musical mechanical automaton could be made to play different rhythms and drum patterns, via pegs and cams. 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. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. 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. It is very difficult to determine what are the most popular modern programming languages.