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. There are many approaches to the Software development process. However, readability is more than just programming style. Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. 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. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. 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. Trade-offs from this ideal involve finding enough programmers who know the language to build a team, the availability of compilers for that language, and the efficiency with which programs written in a given language execute. 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. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. 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. 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. 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. Use of a static code analysis tool can help detect some possible problems. It is very difficult to determine what are the most popular modern programming languages. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. 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. New languages are generally designed around the syntax of a prior language with new functionality added, (for example C++ adds object-orientation to C, and Java adds memory management and bytecode to C++, but as a result, loses efficiency and the ability for low-level manipulation). 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. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). There exist a lot of different approaches for each of those tasks. 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.