Normally the first step in debugging is to attempt to reproduce the problem. 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. Computer programmers are those who write computer software. Unreadable code often leads to bugs, inefficiencies, and duplicated code. 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. Whatever the approach to development may be, the final program must satisfy some fundamental properties. 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. It is usually easier to code in "high-level" languages than in "low-level" ones. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. Ideally, the programming language best suited for the task at hand will be selected. Many applications use a mix of several languages in their construction and use. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. Methods of measuring programming language popularity include: counting the number of job advertisements that mention the language, the number of books sold and courses teaching the language (this overestimates the importance of newer languages), and estimates of the number of existing lines of code written in the language (this underestimates the number of users of business languages such as COBOL). 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. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. 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. 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. Use of a static code analysis tool can help detect some possible problems. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. 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. Proficient programming usually requires expertise in several different subjects, including knowledge of the application domain, details of programming languages and generic code libraries, specialized algorithms, and formal logic. 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).