The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. It is usually easier to code in "high-level" languages than in "low-level" ones. 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. Normally the first step in debugging is to attempt to reproduce the problem. Scripting and breakpointing is also part of this process. Unreadable code often leads to bugs, inefficiencies, and duplicated code. 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. 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. 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. 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. 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. Auxiliary tasks accompanying and related to programming include analyzing requirements, testing, debugging (investigating and fixing problems), implementation of build systems, and management of derived artifacts, such as programs' machine code. 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. Allen Downey, in his book How To Think Like A Computer Scientist, writes: Many computer languages provide a mechanism to call functions provided by shared libraries. Code-breaking algorithms have also existed for centuries. Programmable devices have existed for centuries. 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. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. 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. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. 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.