By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. Assembly languages were soon developed that let the programmer specify instruction in a text format (e.g., ADD X, TOTAL), with abbreviations for each operation code and meaningful names for specifying addresses. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. 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. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. Integrated development environments (IDEs) aim to integrate all such help. 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. 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. Different programming languages support different styles of programming (called programming paradigms). Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. Ideally, the programming language best suited for the task at hand will be selected. Languages form an approximate spectrum from "low-level" to "high-level"; "low-level" languages are typically more machine-oriented and faster to execute, whereas "high-level" languages are more abstract and easier to use but execute less quickly. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. Integrated development environments (IDEs) aim to integrate all such help. 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. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. 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. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Techniques like Code refactoring can enhance readability.