They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Normally the first step in debugging is to attempt to reproduce the problem. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). Programmers typically use high-level programming languages that are more easily intelligible to humans than machine code, which is directly executed by the central processing unit. Debugging is often done with IDEs. Standalone debuggers like GDB are also used, and these often provide less of a visual environment, usually using a command line. One approach popular for requirements analysis is Use Case analysis. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. 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. 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. Whatever the approach to development may be, the final program must satisfy some fundamental properties. 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. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. Whatever the approach to development may be, the final program must satisfy some fundamental properties. Scripting and breakpointing is also part of this process. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. Whatever the approach to development may be, the final program must satisfy some fundamental properties. Some of these factors include: The presentation aspects of this (such as indents, line breaks, color highlighting, and so on) are often handled by the source code editor, but the content aspects reflect the programmer's talent and skills. The first computer program is generally dated to 1843, when mathematician Ada Lovelace published an algorithm to calculate a sequence of Bernoulli numbers, intended to be carried out by Charles Babbage's Analytical Engine. Scripting and breakpointing is also part of this process. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). Following a consistent programming style often helps readability. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.