Normally the first step in debugging is to attempt to reproduce the problem. Scripting and breakpointing is also part of this process. 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. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. Programmable devices have existed for centuries. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). Integrated development environments (IDEs) aim to integrate all such help. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. It is usually easier to code in "high-level" languages than in "low-level" ones. Programming languages are essential for software development. 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. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). Programming languages are essential for software development. The following properties are among the most important: In computer programming, readability refers to the ease with which a human reader can comprehend the purpose, control flow, and operation of source code. One approach popular for requirements analysis is Use Case analysis. 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. Computer programmers are those who write computer software. Various visual programming languages have also been developed with the intent to resolve readability concerns by adopting non-traditional approaches to code structure and display. 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). In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. 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 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.