Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. 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. Later a control panel (plug board) added to his 1906 Type I Tabulator allowed it to be programmed for different jobs, and by the late 1940s, unit record equipment such as the IBM 602 and IBM 604, were programmed by control panels in a similar way, as were the first electronic computers. 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. 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. Integrated development environments (IDEs) aim to integrate all such help. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). 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. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. Integrated development environments (IDEs) aim to integrate all such help. Techniques like Code refactoring can enhance readability. 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. Programming languages are essential for software development. Following a consistent programming style often helps readability. Programs were mostly entered using punched cards or paper tape. They are the building blocks for all software, from the simplest applications to the most sophisticated 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. 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. Programmable devices have existed for centuries. It affects the aspects of quality above, including portability, usability and most importantly maintainability. Also, specific user environment and usage history can make it difficult to reproduce the problem. Integrated development environments (IDEs) aim to integrate all such help. It affects the aspects of quality above, including portability, usability and most importantly maintainability.