Many programmers use forms of Agile software development where the various stages of formal software development are more integrated together into short cycles that take a few weeks rather than years. Techniques like Code refactoring can enhance readability. 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. 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. 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 academic field and the engineering practice of computer programming are both largely concerned with discovering and implementing the most efficient algorithms for a given class of problems. However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory. 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. Their jobs usually involve: Although programming has been presented in the media as a somewhat mathematical subject, some research shows that good programmers have strong skills in natural human languages, and that learning to code is similar to learning a foreign language. 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. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. 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. Their jobs usually involve: Although programming has been presented in the media as a somewhat mathematical subject, some research shows that good programmers have strong skills in natural human languages, and that learning to code is similar to learning a foreign language. Programmable devices have existed for centuries. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. 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. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. Integrated development environments (IDEs) aim to integrate all such help. 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. Techniques like Code refactoring can enhance readability. Many applications use a mix of several languages in their construction and use.