Unreadable code often leads to bugs, inefficiencies, and duplicated code. Programming languages are essential for software development. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. 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. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. 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. 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. When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. As early as the 9th century, a programmable music sequencer was invented by the Persian Banu Musa brothers, who described an automated mechanical flute player in the Book of Ingenious Devices. 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. 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. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. One approach popular for requirements analysis is Use Case analysis. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. Allen Downey, in his book How To Think Like A Computer Scientist, writes: Many computer languages provide a mechanism to call functions provided by shared libraries. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. 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. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. 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. There exist a lot of different approaches for each of those tasks. However, Charles Babbage had already written his first program for the Analytical Engine in 1837.