

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. There exist a lot of different approaches for each of those tasks. There are many approaches to the Software development process. Programming languages are essential for software development. 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. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. It is usually easier to code in "high-level" languages than in "low-level" ones. There exist a lot of different approaches for each of those tasks. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. One approach popular for requirements analysis is Use Case analysis. 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. Computer programmers are those who write computer software. 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. Also, specific user environment and usage history can make it difficult to reproduce the problem. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. Ideally, the programming language best suited for the task at hand will be selected. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). 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. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. Programming languages are essential for software development.