Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. Normally the first step in debugging is to attempt to reproduce the problem. Whatever the approach to development may be, the final program must satisfy some fundamental properties. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. Some of these factors include: The presentation aspects of this (such as indents, line breaks, color highlighting, and so on) are often handled by the source code editor, but the content aspects reflect the programmer's talent and skills. 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. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. Some of these factors include: The presentation aspects of this (such as indents, line breaks, color highlighting, and so on) are often handled by the source code editor, but the content aspects reflect the programmer's talent and skills. There are many approaches to the Software development process. Whatever the approach to development may be, the final program must satisfy some fundamental properties. Also, specific user environment and usage history can make it difficult to reproduce the problem. 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. Code-breaking algorithms have also existed for centuries. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. Auxiliary tasks accompanying and related to programming include analyzing requirements, testing, debugging (investigating and fixing problems), implementation of build systems, and management of derived artifacts, such as programs' machine 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. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. Ideally, the programming language best suited for the task at hand will be selected. 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. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.