

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. Scripting and breakpointing is also part of this process. Computer programmers are those who write computer software. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. 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. There are many approaches to the Software development process. 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. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. Following a consistent programming style often helps readability. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. Use of a static code analysis tool can help detect some possible problems. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. Programming languages are essential for software development. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Whatever the approach to development may be, the final program must satisfy some fundamental properties. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. There are many approaches to the Software development process. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. 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. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. For this purpose, algorithms are classified into orders using so-called Big O notation, which expresses resource use, such as execution time or memory consumption, in terms of the size of an input. Scripting and breakpointing is also part of this process.