

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. Whatever the approach to development may be, the final program must satisfy some fundamental properties. There are many approaches to the Software development process. Techniques like Code refactoring can enhance readability. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. 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. 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 Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. 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. 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*. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in *A Manuscript on Deciphering Cryptographic Messages*. 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. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. Techniques like Code refactoring can enhance readability. 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. While these are sometimes considered programming, often the term software development is used for this larger overall process – with the terms programming, implementation, and coding reserved for the writing and editing of code per se. Integrated development environments (IDEs) aim to integrate all such help. Unreadable code often leads to bugs, inefficiencies, and duplicated code. 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. Whatever the approach to development may be, the final program must satisfy some fundamental properties. Programs were mostly entered using punched cards or paper tape. One approach popular for requirements analysis is Use Case analysis. 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.