

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. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. Ideally, the programming language best suited for the task at hand will be selected. There exist a lot of different approaches for each of those tasks. 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. There are many approaches to the Software development process. Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation. Readability is important because programmers spend the majority of their time reading, trying to understand, reusing and modifying existing source code, rather than writing new source code. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. Programs were mostly entered using punched cards or paper tape. 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. It affects the aspects of quality above, including portability, usability and most importantly maintainability. In 1206, the Arab engineer Al-Jazari invented a programmable drum machine where a musical mechanical automaton could be made to play different rhythms and drum patterns, via pegs and cams. For example, COBOL is still strong in corporate data centers often on large mainframe computers, Fortran in engineering applications, scripting languages in Web development, and C in embedded software. 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. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. 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. 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. Integrated development environments (IDEs) aim to integrate all such help. Scripting and breakpointing is also part of this process. It affects the aspects of quality above, including portability, usability and most importantly maintainability. 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. 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.