

A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. There exist a lot of different approaches for each of those tasks. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. 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. Computer programmers are those who write computer software. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. There are many approaches to the Software development process. 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. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. Techniques like Code refactoring can enhance readability. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. Unreadable code often leads to bugs, inefficiencies, and duplicated code. 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. 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. New languages are generally designed around the syntax of a prior language with new functionality added, (for example C++ adds object-orientation to C, and Java adds memory management and bytecode to C++, but as a result, loses efficiency and the ability for low-level manipulation). Ideally, the programming language best suited for the task at hand will be selected. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process.