

Programmable devices have existed for centuries. Proficient programming usually requires expertise in several different subjects, including knowledge of the application domain, details of programming languages and generic code libraries, specialized algorithms, and formal logic. One approach popular for requirements analysis is Use Case analysis. Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. 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. Programming languages are essential for software development. There are many approaches to the Software development process. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. 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. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. The academic field and the engineering practice of computer programming are both largely concerned with discovering and implementing the most efficient algorithms for a given class of problems. Many applications use a mix of several languages in their construction and use. 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. Computer programmers are those who write computer software. However, readability is more than just programming style. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. 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. Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. 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. Integrated development environments (IDEs) aim to integrate all such help. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.