

Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). Trade-offs from this ideal involve finding enough programmers who know the language to build a team, the availability of compilers for that language, and the efficiency with which programs written in a given language execute. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. Whatever the approach to development may be, the final program must satisfy some fundamental properties. There are many approaches to the Software development process. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. Different programming languages support different styles of programming (called programming paradigms). It affects the aspects of quality above, including portability, usability and most importantly maintainability. 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. 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. It is usually easier to code in "high-level" languages than in "low-level" ones. Scripting and breakpointing is also part of this process. 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. Different programming languages support different styles of programming (called programming paradigms). Code-breaking algorithms have also existed for centuries. There exist a lot of different approaches for each of those tasks. Various visual programming languages have also been developed with the intent to resolve readability concerns by adopting non-traditional approaches to code structure and display. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. 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. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. There are many approaches to the Software development process. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). FORTRAN, the first widely used high-level language to have a functional implementation, came out in 1957, and many other languages were soon developed—in particular, COBOL aimed at commercial data processing, and Lisp for computer research.