

Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. The following properties are among the most important: In computer programming, readability refers to the ease with which a human reader can comprehend the purpose, control flow, and operation of source code. 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. 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. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. Expert programmers are familiar with a variety of well-established algorithms and their respective complexities and use this knowledge to choose algorithms that are best suited to the circumstances. Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. Code-breaking algorithms have also existed for centuries. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). However, readability is more than just programming style. Later a control panel (plug board) added to his 1906 Type I Tabulator allowed it to be programmed for different jobs, and by the late 1940s, unit record equipment such as the IBM 602 and IBM 604, were programmed by control panels in a similar way, as were the first electronic computers. Programs were mostly entered using punched cards or paper tape. Whatever the approach to development may be, the final program must satisfy some fundamental properties. 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. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. There exist a lot of different approaches for each of those tasks. 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. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). 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*.