

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 choice of language used is subject to many considerations, such as company policy, suitability to task, availability of third-party packages, or individual preference. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. While these are sometimes considered programming, often the term software development is used for this larger overall process – with the terms programming, implementation, and coding reserved for the writing and editing of code per se. 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. Many programmers use forms of Agile software development where the various stages of formal software development are more integrated together into short cycles that take a few weeks rather than years. There exist a lot of different approaches for each of those tasks. There are many approaches to the Software development process. 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. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. Debugging is often done with IDEs. Standalone debuggers like GDB are also used, and these often provide less of a visual environment, usually using a command line. Programmable devices have existed for centuries. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. 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. These compiled languages allow the programmer to write programs in terms that are syntactically richer, and more capable of abstracting the code, making it easy to target varying machine instruction sets via compilation declarations and heuristics. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. Programs were mostly entered using punched cards or paper tape. It affects the aspects of quality above, including portability, usability and most importantly maintainability. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. 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. Many applications use a mix of several languages in their construction and use. 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. Techniques like Code refactoring can enhance readability.