

There are many approaches to the Software development process. There are many approaches to the Software development process. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. One approach popular for requirements analysis is Use Case analysis. Languages form an approximate spectrum from "low-level" to "high-level"; "low-level" languages are typically more machine-oriented and faster to execute, whereas "high-level" languages are more abstract and easier to use but execute less quickly. It is usually easier to code in "high-level" languages than in "low-level" ones. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. 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. Integrated development environments (IDEs) aim to integrate all such help.

Trial-and-error/divide-and-conquer is needed: the programmer will try to remove some parts of the original test case and check if the problem still exists. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. Auxiliary tasks accompanying and related to programming include analyzing requirements, testing, debugging (investigating and fixing problems), implementation of build systems, and management of derived artifacts, such as programs' machine code. There exist a lot of different approaches for each of those tasks. Use of a static code analysis tool can help detect some possible problems. Code-breaking algorithms have also existed for centuries. For example, COBOL is still strong in corporate data centers often on large mainframe computers, Fortran in engineering applications, scripting languages in Web development, and C in embedded software. Different programming languages support different styles of programming (called programming paradigms). The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. 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. 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. 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. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. 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. Programming languages are essential for software development.