

Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. 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. Whatever the approach to development may be, the final program must satisfy some fundamental properties. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. 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. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. Techniques like Code refactoring can enhance readability. 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. 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. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware. 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. It is very difficult to determine what are the most popular modern programming languages. There are many approaches to the Software development process. 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 more prone to some kinds of faults because their specification does not require compilers to perform as much checking as other languages. 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. There are many approaches to the Software development process. It is usually easier to code in "high-level" languages than in "low-level" ones. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Programmable devices have existed for centuries.