

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. Readability is important because programmers spend the majority of their time reading, trying to understand, reusing and modifying existing source code, rather than writing new source code. Use of a static code analysis tool can help detect some possible problems. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. Readability is important because programmers spend the majority of their time reading, trying to understand, reusing and modifying existing source code, rather than writing new source code. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Following a consistent programming style often helps readability. Computer programmers are those who write computer software. It is very difficult to determine what are the most popular modern programming languages. It is usually easier to code in "high-level" languages than in "low-level" ones. Following a consistent programming style often helps readability. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. 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. 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. 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. 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. 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. Unreadable code often leads to bugs, inefficiencies, and duplicated code. Use of a static code analysis tool can help detect some possible problems. Ideally, the programming language best suited for the task at hand will be selected. Different programming languages support different styles of programming (called programming paradigms). Techniques like Code refactoring can enhance readability. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. 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.