

However, because an assembly language is little more than a different notation for a machine language, two machines with different instruction sets also have different assembly languages. 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. It is usually easier to code in "high-level" languages than in "low-level" ones. 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. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. 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. Scripting and breakpointing is also part of this process. However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory. 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. There exist a lot of different approaches for each of those tasks. This can be a non-trivial task, for example as with parallel processes or some unusual software bugs. 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. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers. 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. Techniques like Code refactoring can enhance readability. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users. Whatever the approach to development may be, the final program must satisfy some fundamental properties. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory. Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications. Their jobs usually involve: Although programming has been presented in the media as a somewhat mathematical subject, some research shows that good programmers have strong skills in natural human languages, and that learning to code is similar to learning a foreign language.