

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. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Programmable devices have existed for centuries. However, Charles Babbage had already written his first program for the Analytical Engine in 1837. Programmable devices have existed for centuries. It affects the aspects of quality above, including portability, usability and most importantly maintainability. 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. Different programming languages support different styles of programming (called programming paradigms). Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. 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. Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards. Normally the first step in debugging is to attempt to reproduce the problem. 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. 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. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Computer programmers are those who write computer software. Programs were mostly entered using punched cards or paper tape. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. 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. Integrated development environments (IDEs) aim to integrate all such help. 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.