

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. Programs were mostly entered using punched cards or paper tape. Many applications use a mix of several languages in their construction and use. Programs were mostly entered using punched cards or paper tape. Expert programmers are familiar with a variety of well-established algorithms and their respective complexities and use this knowledge to choose algorithms that are best suited to the circumstances. 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. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). 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. Unreadable code often leads to bugs, inefficiencies, and duplicated code. Programs were mostly entered using punched cards or paper tape. Unreadable code often leads to bugs, inefficiencies, and duplicated code. 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. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. Computer programmers are those who write computer software. A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. Ideally, the programming language best suited for the task at hand will be selected. Programmers typically use high-level programming languages that are more easily intelligible to humans than machine code, which is directly executed by the central processing unit. Proficient programming usually requires expertise in several different subjects, including knowledge of the application domain, details of programming languages and generic code libraries, specialized algorithms, and formal logic. 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. 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.