

Code-breaking algorithms have also existed for centuries. However, readability is more than just programming style. He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm. In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. Use of a static code analysis tool can help detect some possible problems. Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA). It affects the aspects of quality above, including portability, usability and most importantly maintainability. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. It is usually easier to code in "high-level" languages than in "low-level" ones. Scripting and breakpointing is also part of this process. 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. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. Techniques like Code refactoring can enhance readability. 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. In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages. 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. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. Scripting and breakpointing is also part of this process. 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. Scripting and breakpointing is also part of this process. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. It is usually easier to code in "high-level" languages than in "low-level" ones. There are many approaches to the Software development process.