

Unreadable code often leads to bugs, inefficiencies, and duplicated code. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). In 1206, the Arab engineer Al-Jazari invented a programmable drum machine where a musical mechanical automaton could be made to play different rhythms and drum patterns, via pegs and cams. One approach popular for requirements analysis is Use Case analysis. 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. 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. Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA. Trial-and-error/divide-and-conquer is needed: the programmer will try to remove some parts of the original test case and check if the problem still exists. It is usually easier to code in "high-level" languages than in "low-level" ones. Code-breaking algorithms have also existed for centuries. 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. Scripting and breakpointing is also part of this process. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Some languages are more prone to some kinds of faults because their specification does not require compilers to perform as much checking as other languages. Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation. 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. However, readability is more than just programming style. The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'. Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process. One approach popular for requirements analysis is Use Case analysis.