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. Programmable devices have existed for centuries. In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form. New languages are generally designed around the syntax of a prior language with new functionality added, (for example C++ adds object-orientation to C, and Java adds memory management and bytecode to C++, but as a result, loses efficiency and the ability for low-level manipulation). Unreadable code often leads to bugs, inefficiencies, and duplicated code. Normally the first step in debugging is to attempt to reproduce the problem. It affects the aspects of quality above, including portability, usability and most importantly maintainability. Code-breaking algorithms have also existed for centuries. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. 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. The first computer program is generally dated to 1843, when mathematician Ada Lovelace published an algorithm to calculate a sequence of Bernoulli numbers, intended to be carried out by Charles Babbage's Analytical Engine. One approach popular for requirements analysis is Use Case analysis. It is usually easier to code in "high-level" languages than in "low-level" ones. They are the building blocks for all software, from the simplest applications to the most sophisticated ones. Unreadable code often leads to bugs, inefficiencies, and duplicated code. It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages. 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. Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages. The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging). Programmable devices have existed for centuries. 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. 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. Code-breaking algorithms have also existed for centuries. 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.