

The following properties are among the most important: In computer programming, readability refers to the ease with which a human reader can comprehend the purpose, control flow, and operation of source code. Techniques like Code refactoring can enhance readability. After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug. 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. 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. 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. There are many approaches to the Software development process. The following properties are among the most important: In computer programming, readability refers to the ease with which a human reader can comprehend the purpose, control flow, and operation of source code. 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. A similar technique used for database design is Entity-Relationship Modeling (ER Modeling). A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it. 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. Following a consistent programming style often helps readability. Unreadable code often leads to bugs, inefficiencies, and duplicated code. 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. Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment. Different programming languages support different styles of programming (called programming paradigms). 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. Ideally, the programming language best suited for the task at hand will be selected. Use of a static code analysis tool can help detect some possible problems. Integrated development environments (IDEs) aim to integrate all such help. Following a consistent programming style often helps readability. Whatever the approach to development may be, the final program must satisfy some fundamental properties. It affects the aspects of quality above, including portability, usability and most importantly maintainability. Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.