Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users..  
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.  
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.  
 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.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
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.  
Some of these factors include:  
 The presentation aspects of this (such as indents, line breaks, color highlighting, and so on) are often handled by the source code editor, but the content aspects reflect the programmer's talent and skills.  
Unreadable code often leads to bugs, inefficiencies, and duplicated code.  
They are the building blocks for all software, from the simplest applications to the most sophisticated ones.  
 Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.  
 Computer programmers are those who write computer software.  
Integrated development environments (IDEs) aim to integrate all such help.  
For example, when a bug in a compiler can make it crash when parsing some large source file, a simplification of the test case that results in only few lines from the original source file can be sufficient to reproduce the same crash.  
 Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications.