Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users..  
 Computer programmers are those who write computer software.  
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.  
In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.  
 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).  
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.  
Provided the functions in a library follow the appropriate run-time conventions (e.g., method of passing arguments), then these functions may be written in any other language.  
As early as the 9th century, a programmable music sequencer was invented by the Persian Banu Musa brothers, who described an automated mechanical flute player in the Book of Ingenious Devices.  
 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.  
 A similar technique used for database design is Entity-Relationship Modeling (ER Modeling).  
 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.  
 Different programming languages support different styles of programming (called programming paradigms).  
Many applications use a mix of several languages in their construction and use.  
 Whatever the approach to development may be, the final program must satisfy some fundamental properties.  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.