Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation..  
It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages.  
 Whatever the approach to development may be, the final program must satisfy some fundamental properties.  
Also, specific user environment and usage history can make it difficult to reproduce the problem.  
Trade-offs from this ideal involve finding enough programmers who know the language to build a team, the availability of compilers for that language, and the efficiency with which programs written in a given language execute.  
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.  
The choice of language used is subject to many considerations, such as company policy, suitability to task, availability of third-party packages, or individual preference.  
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.  
Integrated development environments (IDEs) aim to integrate all such help.  
 The academic field and the engineering practice of computer programming are both largely concerned with discovering and implementing the most efficient algorithms for a given class of problems.  
Programming languages are essential for software development.  
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.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process.  
Many programmers use forms of Agile software development where the various stages of formal software development are more integrated together into short cycles that take a few weeks rather than years.