Programming languages are essential for software development..  
 Different programming languages support different styles of programming (called programming paradigms).  
In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.  
For example, COBOL is still strong in corporate data centers often on large mainframe computers, Fortran in engineering applications, scripting languages in Web development, and C in embedded software.  
Use of a static code analysis tool can help detect some possible problems.  
 The first step in most formal software development processes is requirements analysis, followed by testing to determine value modeling, implementation, and failure elimination (debugging).  
 Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA).  
Integrated development environments (IDEs) aim to integrate all such help.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
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.  
Methods of measuring programming language popularity include: counting the number of job advertisements that mention the language, the number of books sold and courses teaching the language (this overestimates the importance of newer languages), and estimates of the number of existing lines of code written in the language (this underestimates the number of users of business languages such as COBOL).  
 Code-breaking algorithms have also existed for centuries.  
 Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications.  
 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.  
It affects the aspects of quality above, including portability, usability and most importantly maintainability.