One approach popular for requirements analysis is Use Case analysis..  
Trial-and-error/divide-and-conquer is needed: the programmer will try to remove some parts of the original test case and check if the problem still exists.  
They are the building blocks for all software, from the simplest applications to the most sophisticated ones.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
 A similar technique used for database design is Entity-Relationship Modeling (ER Modeling).  
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.  
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.  
Ideally, the programming language best suited for the task at hand will be selected.  
There are many approaches to the Software development process.  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
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.  
 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.  
Techniques like Code refactoring can enhance readability.  
It affects the aspects of quality above, including portability, usability and most importantly maintainability.  
 Allen Downey, in his book How To Think Like A Computer Scientist, writes:  
 Many computer languages provide a mechanism to call functions provided by shared libraries.