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..  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.  
 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.  
They are the building blocks for all software, from the simplest applications to the most sophisticated ones.  
There are many approaches to the Software development process.  
 Code-breaking algorithms have also existed for centuries.  
 Computer programmers are those who write computer software.  
There exist a lot of different approaches for each of those tasks.  
 Programs were mostly entered using punched cards or paper tape.  
It involves designing and implementing algorithms, step-by-step specifications of procedures, by writing code in one or more programming languages.  
It affects the aspects of quality above, including portability, usability and most importantly maintainability.  
Normally the first step in debugging is to attempt to reproduce the problem.  
  
The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'.  
For this purpose, algorithms are classified into orders using so-called Big O notation, which expresses resource use, such as execution time or memory consumption, in terms of the size of an input.