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.  
To produce machine code, the source code must either be compiled or transpiled.  
Assembly languages were soon developed that let the programmer specify instruction in a text format (e.g., ADD X, TOTAL), with abbreviations for each operation code and meaningful names for specifying addresses.  
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.  
Many applications use a mix of several languages in their construction and use.  
Techniques like Code refactoring can enhance readability.  
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.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
Transpiling on the other hand, takes the source-code from a high-level programming language and converts it into bytecode.  
 Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.  
Transpiling on the other hand, takes the source-code from a high-level programming language and converts it into bytecode.  
  
 Computer programming is the process of performing particular computations (or more generally, accomplishing specific computing results), usually by designing and building executable computer programs.  
Some of these factors include:  
 The presentation aspects of this (such as indents, line breaks, color highlighting, and so on) are often handled by the source code editor, but the content aspects reflect the programmer's talent and skills.  
When debugging the problem in a GUI, the programmer can try to skip some user interaction from the original problem description and check if remaining actions are sufficient for bugs to appear.  
Programming involves tasks such as analysis, generating algorithms, profiling algorithms' accuracy and resource consumption, and the implementation of algorithms (usually in a particular programming language, commonly referred to as coding).