Compiling takes the source code from a low-level programming language and converts it into machine code.  
Transpiling on the other hand, takes the source-code from a high-level programming language and converts it into bytecode.  
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.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
Proficient programming thus usually requires expertise in several different subjects, including knowledge of the application domain, specialized algorithms, and formal logic.  
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).  
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.  
Techniques like Code refactoring can enhance readability.  
Scripting and breakpointing is also part of this process.  
Programming languages are essential for software development.  
  
However, because an assembly language is little more than a different notation for a machine language, two machines with different instruction sets also have different assembly languages.  
Relatedly, software engineering combines engineering techniques and principles with software development.  
Many applications use a mix of several languages in their construction and use.  
Integrated development environments (IDEs) aim to integrate all such help.