Relatedly, software engineering combines engineering techniques and principles with software development.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
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The purpose of programming is to find a sequence of instructions that will automate the performance of a task (which can be as complex as an operating system) on a computer, often for solving a given problem.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
This is interpreted into machine code.  
Use of a static code analysis tool can help detect some possible problems.  
Programming languages are essential for software development.  
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.  
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Transpiling on the other hand, takes the source-code from a high-level programming language and converts it into bytecode.