He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
Compiling takes the source code from a low-level programming language and converts it into machine code.  
Compilers harnessed the power of computers to make programming easier by allowing programmers to specify calculations by entering a formula using infix notation.  
Transpiling on the other hand, takes the source-code from a high-level programming language and converts it into bytecode.  
Relatedly, software engineering combines engineering techniques and principles with software development.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
There are many approaches to the Software development process.  
Methods of measuring programming language popularity include: counting the number of job advertisements that mention the language, the number of books sold and courses teaching the language (this overestimates the importance of newer languages), and estimates of the number of existing lines of code written in the language (this underestimates the number of users of business languages such as COBOL).  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
Languages form an approximate spectrum from "low-level" to "high-level"; "low-level" languages are typically more machine-oriented and faster to execute, whereas "high-level" languages are more abstract and easier to use but execute less quickly.  
Scripting and breakpointing is also part of this process.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.  
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.  
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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.