Transpiling on the other hand, takes the source-code from a high-level programming language and converts it into bytecode.  
Also, specific user environment and usage history can make it difficult to reproduce the problem.  
Compiling takes the source code from a low-level programming language and converts it into machine code.  
However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory.  
In 1206, the Arab engineer Al-Jazari invented a programmable drum machine where a musical mechanical automaton could be made to play different rhythms and drum patterns, via pegs and cams.  
 Programs were mostly entered using punched cards or paper tape.  
 Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications.  
 The first computer program is generally dated to 1843, when mathematician Ada Lovelace published an algorithm to calculate a sequence of Bernoulli numbers, intended to be carried out by Charles Babbage's Analytical Engine.  
 The academic field and the engineering practice of computer programming are both largely concerned with discovering and implementing the most efficient algorithms for a given class of problems.  
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.  
Programming languages are essential for software development.  
One approach popular for requirements analysis is Use Case analysis.  
 Code-breaking algorithms have also existed for centuries.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
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).