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).  
Trade-offs from this ideal involve finding enough programmers who know the language to build a team, the availability of compilers for that language, and the efficiency with which programs written in a given language execute.  
To produce machine code, the source code must either be compiled or transpiled.  
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.  
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.  
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.  
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.  
 Programmable devices have existed for centuries.  
One approach popular for requirements analysis is Use Case analysis.  
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.  
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.  
Many applications use a mix of several languages in their construction and use.  
Unreadable code often leads to bugs, inefficiencies, and duplicated code.  
There are many approaches to the Software development process.  
Also, those involved with software development may at times engage in reverse engineering, which is the practice of seeking to understand an existing program so as to re-implement its function in some way.