Compiling takes the source code from a low-level programming language and converts it into machine code.  
Normally the first step in debugging is to attempt to reproduce the problem.  
Many applications use a mix of several languages in their construction and use.  
Use of a static code analysis tool can help detect some possible problems.  
Transpiling on the other hand, takes the source-code from a high-level programming language and converts it into bytecode.  
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.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
However, while these might be considered part of the programming process, often the term software development is more likely used for this larger overall process – whereas the terms programming, implementation, and coding tend to be focused on the actual writing of code.  
Ideally, the programming language best suited for the task at hand will be selected.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
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.  
 Different programming languages support different styles of programming (called programming paradigms).  
FORTRAN, the first widely used high-level language to have a functional implementation, came out in 1957, and many other languages were soon developed—in particular, COBOL aimed at commercial data processing, and Lisp for computer research.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
It is usually easier to code in "high-level" languages than in "low-level" ones.