Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks..  
 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.  
As early as the 9th century, a programmable music sequencer was invented by the Persian Banu Musa brothers, who described an automated mechanical flute player in the Book of Ingenious Devices.  
While these are sometimes considered programming, often the term software development is used for this larger overall process – with the terms programming, implementation, and coding reserved for the writing and editing of code per se.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
 Debugging is a very important task in the software development process since having defects in a program can have significant consequences for its users.  
There exist a lot of different approaches for each of those tasks.  
In 1801, the Jacquard loom could produce entirely different weaves by changing the "program" – a series of pasteboard cards with holes punched in them.  
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.  
Techniques like Code refactoring can enhance readability.  
Provided the functions in a library follow the appropriate run-time conventions (e.g., method of passing arguments), then these functions may be written in any other language.  
Sometimes software development is known as software engineering, especially when it employs formal methods or follows an engineering design process.  
Integrated development environments (IDEs) aim to integrate all such help.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.