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..  
Integrated development environments (IDEs) aim to integrate all such help.  
 Whatever the approach to development may be, the final program must satisfy some fundamental properties.  
He gave the first description of cryptanalysis by frequency analysis, the earliest code-breaking algorithm.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
 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.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.  
For example, COBOL is still strong in corporate data centers often on large mainframe computers, Fortran in engineering applications, scripting languages in Web development, and C in embedded software.  
The choice of language used is subject to many considerations, such as company policy, suitability to task, availability of third-party packages, or individual preference.  
By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers.  
Techniques like Code refactoring can enhance readability.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
Normally the first step in debugging is to attempt to reproduce the problem.  
 New languages are generally designed around the syntax of a prior language with new functionality added, (for example C++ adds object-orientation to C, and Java adds memory management and bytecode to C++, but as a result, loses efficiency and the ability for low-level manipulation).  
 Different programming languages support different styles of programming (called programming paradigms).