Proficient programming thus usually requires expertise in several different subjects, including knowledge of the application domain, specialized algorithms, and formal logic.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
Relatedly, software engineering combines engineering techniques and principles with software development.  
Some languages are more prone to some kinds of faults because their specification does not require compilers to perform as much checking as other languages.  
Use of a static code analysis tool can help detect some possible problems.  
Proficient programming thus usually requires expertise in several different subjects, including knowledge of the application domain, specialized algorithms, and formal logic.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.  
It affects the aspects of quality above, including portability, usability and most importantly maintainability.  
Integrated development environments (IDEs) aim to integrate all such help.  
Scripting and breakpointing is also part of this process.  
Integrated development environments (IDEs) aim to integrate all such help.  
 Debugging is often done with IDEs. Standalone debuggers like GDB are also used, and these often provide less of a visual environment, usually using a command line.  
 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.  
It is usually easier to code in "high-level" languages than in "low-level" ones.