The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA..  
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.  
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.  
 In the 1880s, Herman Hollerith invented the concept of storing data in machine-readable form.  
 It is very difficult to determine what are the most popular modern programming languages.  
 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.  
For example, when a bug in a compiler can make it crash when parsing some large source file, a simplification of the test case that results in only few lines from the original source file can be sufficient to reproduce the same crash.  
 Following a consistent programming style often helps readability.  
Normally the first step in debugging is to attempt to reproduce the problem.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.  
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.  
 These compiled languages allow the programmer to write programs in terms that are syntactically richer, and more capable of abstracting the code, making it easy to target varying machine instruction sets via compilation declarations and heuristics.  
Scripting and breakpointing is also part of this process.  
They are the building blocks for all software, from the simplest applications to the most sophisticated ones.