Whatever the approach to development may be, the final program must satisfy some fundamental properties..  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
However, Charles Babbage had already written his first program for the Analytical Engine in 1837.  
They are the building blocks for all software, from the simplest applications to the most sophisticated ones.  
Later a control panel (plug board) added to his 1906 Type I Tabulator allowed it to be programmed for different jobs, and by the late 1940s, unit record equipment such as the IBM 602 and IBM 604, were programmed by control panels in a similar way, as were the first electronic computers.  
 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).  
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.  
Normally the first step in debugging is to attempt to reproduce the problem.  
  
The first compiler related tool, the A-0 System, was developed in 1952 by Grace Hopper, who also coined the term 'compiler'.  
However, with the concept of the stored-program computer introduced in 1949, both programs and data were stored and manipulated in the same way in computer memory.  
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.  
 Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.  
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.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
Their jobs usually involve:  
 Although programming has been presented in the media as a somewhat mathematical subject, some research shows that good programmers have strong skills in natural human languages, and that learning to code is similar to learning a foreign language.