However, Charles Babbage had already written his first program for the Analytical Engine in 1837..  
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.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
Many programmers use forms of Agile software development where the various stages of formal software development are more integrated together into short cycles that take a few weeks rather than years.  
By the late 1960s, data storage devices and computer terminals became inexpensive enough that programs could be created by typing directly into the computers.  
Proficient programming usually requires expertise in several different subjects, including knowledge of the application domain, details of programming languages and generic code libraries, specialized algorithms, and formal logic.  
 Whatever the approach to development may be, the final program must satisfy some fundamental properties.  
 Computer programmers are those who write computer software.  
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.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
 Various visual programming languages have also been developed with the intent to resolve readability concerns by adopting non-traditional approaches to code structure and display.  
 Programs were mostly entered using punched cards or paper tape.  
It is usually easier to code in "high-level" languages than in "low-level" ones.  
Ideally, the programming language best suited for the task at hand will be selected.  
Text editors were also developed that allowed changes and corrections to be made much more easily than with punched cards.