Assembly languages were soon developed that let the programmer specify instruction in a text format (e.g., ADD X, TOTAL), with abbreviations for each operation code and meaningful names for specifying addresses.  
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Proficient programming thus usually requires expertise in several different subjects, including knowledge of the application domain, specialized algorithms, and formal logic.  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
 After the bug is reproduced, the input of the program may need to be simplified to make it easier to debug.  
Normally the first step in debugging is to attempt to reproduce the problem.  
 Readability is important because programmers spend the majority of their time reading, trying to understand, reusing and modifying existing source code, rather than writing new source code.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
 Popular modeling techniques include Object-Oriented Analysis and Design (OOAD) and Model-Driven Architecture (MDA).  
 A similar technique used for database design is Entity-Relationship Modeling (ER Modeling).  
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