However, because an assembly language is little more than a different notation for a machine language, two machines with different instruction sets also have different assembly languages..  
  
 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.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
 Machine code was the language of early programs, written in the instruction set of the particular machine, often in binary notation.  
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.  
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.  
This can be a non-trivial task, for example as with parallel processes or some unusual software bugs.  
Programmers typically use high-level programming languages that are more easily intelligible to humans than machine code, which is directly executed by the central processing unit.  
Scripting and breakpointing is also part of this process.  
 Programs were mostly entered using punched cards or paper tape.  
Expert programmers are familiar with a variety of well-established algorithms and their respective complexities and use this knowledge to choose algorithms that are best suited to the circumstances.  
 Different programming languages support different styles of programming (called programming paradigms).  
 The academic field and the engineering practice of computer programming are both largely concerned with discovering and implementing the most efficient algorithms for a given class of problems.  
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.