Some languages are very popular for particular kinds of applications, while some languages are regularly used to write many different kinds of applications..  
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.  
Many factors, having little or nothing to do with the ability of the computer to efficiently compile and execute the code, contribute to readability.  
For example, COBOL is still strong in corporate data centers often on large mainframe computers, Fortran in engineering applications, scripting languages in Web development, and C in embedded software.  
 Code-breaking algorithms have also existed for centuries.  
A study found that a few simple readability transformations made code shorter and drastically reduced the time to understand it.  
Scripting and breakpointing is also part of this process.  
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.  
 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.  
In the 9th century, the Arab mathematician Al-Kindi described a cryptographic algorithm for deciphering encrypted code, in A Manuscript on Deciphering Cryptographic Messages.  
Trade-offs from this ideal involve finding enough programmers who know the language to build a team, the availability of compilers for that language, and the efficiency with which programs written in a given language execute.  
Also, specific user environment and usage history can make it difficult to reproduce the problem.  
The Unified Modeling Language (UML) is a notation used for both the OOAD and MDA.  
There exist a lot of different approaches for each of those tasks.  
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.