

10. Provide a short list with information about the most popular programming languages. How do they differ from C#?

C: Used for systems programming - operating systems, device drivers, etc. Also very popular in game development as well as in the Linux community. Extremely fast run time performance.

C++: Combines the low level power of C with several layers of abstraction. You can do imperative, functional, declarative and OO style programming.

Java: "C++ without the guns, knives, and clubs," according to James Gosling, who invented it. Ubiquitous in the enterprise computing world.

C#: Used within Microsoft's .NET framework. Widely used for enterprise applications, web applications and a good deal of open source stuff.

Objective-C: primarily popular because of iOS. Related to C/C++ but with some very different syntax mixed in. Very narrow applicability although iOS is a pretty big reason to learn it.

Ruby: Great for writing web applications using Rails, hugely popular framework. Fast moving language, not really useful for developing GUI applications. Very popular and "cool" especially in the startup community.

Python: Used for web development thanks to Django. Also a lot of scientific computing due to good numeric and bioinformatics libraries. Python is also the language suggested to people new to programming to learn first. Quite popular at Google. Also more common for GUI development compared to Ruby.

Perl: Used to be big for developing Web applications. Also used extensively for scripting systems administration tasks - text parsing, regular expressions, DNS, web stuff. Used by the biggest names in the industry. Very active support from the community.

JavaScript: The most common client-side programming language used to make web pages dynamic. Formerly used exclusively for client-side functionality that runs in users' web browsers, but now also used as a server-side language in some cases (using Node.js).

11. Describe the difference between C# and .NET Framework.

C# is one of the **programming languages** designed for the Common Language Infrastructure (CLI). Besides C# other CLI languages are Visual Basic .NET, F# and Managed C++.

With some notable exceptions, most CLI languages compile entirely to an intermediate language that can be executed using an implementation of CLI. Microsoft's implementation of the CLI standard is the Common Language Runtime (CLR) which is part of the **.NET Framework**. Other implementations are Mono and Portable.NET. The .NET Framework includes a large class library and provides language interoperability across several programming languages.