

Telerik Academy

Introduction to programming

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

1. C/C++ - The languages that C# is mostly based on. Neither C nor C++ fully implements the OOP. There is no garbage collector so the programmer must take care of disposing of the memory that is no longer needed.
C however allows you to use pointers (not only in an unsafe block of code) and more precise use of system resources. It directly translates for the specific operating system and processor hence no need for something like .NET or JVM. The downside of this that it doesn't offer portability neither does it offer such a level of security (a program can access all the resources of the computer and there is nothing that can monitor its activity and stop it in case of suspicious activity).
2. Java – A C based language that implements the OOP model. Similar to the .NET's Common Language Runtime (CLR) there is a Java Virtual Machine (JVM) that executes the translated bytecode. Java however doesn't support pointers, delegates and does not implement the object oriented model to its fullest (in .NET even the primitive types are derive from System.Object). Java doesn't have unsigned variables.
Java can run on most of the operating systems while C# can run only if there is .NET framework installed (or in some cases Mono)
3. PHP – A widely used language for developing web applications. It is an open source scripting language. The programmer does not have to declare data types when using variables.
4. Visual Basic – Like C# it is a .NET language. VB has XML literals and IsNumeric() method that evaluates whether a string can be cast into a numeric value. When declaring variables the type is written last and it uses "=" both for assigning and comparing. It does not however allow blocks of unsafe code and partial classes.
5. Python – A popular language, that allows functional and OO programming like C++. End of statement is not terminated with ";" and Python uses whitespace to delimit program blocks, following the off-side rule. It also has properties=
6. JavaScript – a weakly-typed object oriented scripting language. It is widely used in web development, mobile apps and in some desktop applications (Windows 8 apps can be build with just html, css and JavaScript).

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

The .NET is a framework that provides large library and a software environment, known as the Common Language Runtime. The .NET languages are translated into Common Intermediate Language and then executed by the CRL. The framework provides garbage collector, memory manager and exception handling.

The C# is a programming language, designed with .NET in mind and it uses all the features that the framework provides.