

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

1. Java

Java is an object-oriented programming language developed in 1995 by Sun Microsystems. In less than 20 years, Java has become among the most popular programming languages in the world (ranked no.2 as per TIOBE Programming Community Index, no.1 on JobsTractor). Java is platform independent, which means that programs made for Mac OS X can be run on Windows and Linux, and vice versa. This feature is one of the reasons why Java is the go-to language for most enterprise applications.

2. C Language

C is one of the oldest programming languages used today. It was originally developed in 1972 by Dennis Ritchie at Bell Labs. C is the “grandfather” of many programming languages, including Java, C#, C++, Perl and JavaScript.

C is powerful, stable, and easily available on virtually all platforms. The primary interpretation of many popular languages like Python and PHP are written in C language. This is the reason why C is one of the first languages taught to students, as it can make learning other languages far easier.

3. C++

C++ was originally created in 1983 to address the shortcomings of the C language. It is an intermediate-level language with object-oriented programming features. C++ powers some of the most popular desktop applications in the world, including the entire suite of Adobe software (Adobe Photoshop, Illustrator, etc.), Mozilla Firefox, Google Chromium, and Winamp. Demand for C++ programmers is perpetually high, with 29,225 vacancies according to Indeed.

4. C#

C# (pronounced “C-Sharp”) was developed by Microsoft in 2000 as a fundamental part of its .NET framework. C# is an object-oriented, multi-paradigm programming language that combines the best of C and C++. Learning C# is a must for any programmer who wants to develop for Microsoft platforms (including Windows).

5. Objective-C

Objective-C was developed in 1983 by Tom Love and Brad Cox at Apple to address the objected-oriented deficiencies of C language. Objective C is the primary language used in Apple OS X and iOS operating systems. The surge in popularity of Macs and Apple "i" devices (including iPad and iPhone) has created a huge demand for Objective-C programmers. A working knowledge of Objective-C will help you develop apps for iOS, which paves the way for thousands of jobs in startups as well as big tech companies (17,702 jobs, as per Indeed). As an Objective-C programmer, you can also freelance and create apps for iOS on your own.

6. PHP

PHP (Hypertext Processor) is a server-side scripting language that powers more than 244m websites online, including the popular publishing platforms WordPress, Joomla, and Drupal. Created in 1995, PHP is one of the younger languages on this list.

PHP is relatively easy to learn and can be readily embedded within HTML pages, which has made it the go-to general purpose programming language online. The high demand for web application developers has led to a huge surfeit in PHP jobs. Mastering PHP is often the first step to becoming a full-fledged web developer.

7. Python

Python was created in 1991 by Guido van Rossum. This high-level programming language emphasizes readability and simplicity and is a great language for beginners to start their programming journey. Python has enjoyed a resurgence in popularity in the last few years and now powers some of the most popular websites in the world, like Instagram.com, Pinterest.com, and Rdio.com through its associated web framework, Django. Google has invested especially heavily in Python development in the last decade or so, which has further added to the language's popularity (in fact, Python founder van Rossum was a Google employee from 2005 to 2012).

8. Ruby

Ruby was developed in 1995 by Yukihiro Matsumoto by combining elements from Perl, Lisp, and Eiffel. It is an object-oriented, dynamic language that emphasizes simplicity and automation. Ruby powers the Ruby on Rails framework, which is used on popular websites like Yammer, Scribd, Github, Groupon, and Shopify. Many students new to programming also find Ruby comparatively easy to learn because of its simple syntax and English-like readability.

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

C# is a programming language, .NET is a blanket term that tends to cover both the .NET Framework (an application framework library) and the Common Language Runtime which is the runtime in which .NET assemblies are run.

Microsoft's implementation of C# is heavily integrated with the .NET Framework so it is understandable that the two concepts would be confused. However it is important to understand that they are two very different things.