ASP.NET

A brief discussion of the .NET Framework, ASP.NET and web controls.

.NET Framework

1. The .NET Framework is a technology for building internet applications, windows applications and services. The .NET framework is these two components together:

   a. FCL (Framework Class Library) – This is the API

      https://docs.microsoft.com/en-us/dotnet/api/?view=netframework-4.7.1

      - The FCL is equivalent to the Java API except that namespaces are used instead of packages. Several useful namespaces:

        System namespace
        https://docs.microsoft.com/en-us/dotnet/api/system?view=netframework-4.7.1
        System.Collections.Generic namespace
        https://docs.microsoft.com/en-us/dotnet/api/system.collections.generic?view=netframework-4.7.1
        System.Web.UI.WebControls
        https://docs.microsoft.com/en-us/dotnet/api/system.web.ui.webcontrols?view=netframework-4.7.1

      - Classes in the FCL are organized into namespaces which are similar to Java packages. A namespace is simply a grouping of classes, a hierarchy of the defined types.

      - An assembly is a partially compiled code library used for deployment (an .exe or .dll file). An assembly can contain one or more namespaces. The classes in the FCL are organized by namespace but made available in assemblies. For instance, the *System.Data* namespace is stored in the file *System.Data.dll*. The most common namespaces are imported automatically. If you need a class from a namespace that is not automatically loaded you simply include it with the *using namespace* statement before any code.

      - (Optional) Classes in the FCL can have: Constructors, Properties, Methods, and Events and other members. There are more than: 12,000 classes and 200,000 methods (both public).

        http://codebetter.com/patricksmacchia/2008/03/18/number-of-types-in-the-net-framework/

   b. CLR (Common Language Runtime) – The virtual machine where .NET code is executed.

      https://docs.microsoft.com/en-us/dotnet/standard/clr
      https://en.wikipedia.org/wiki/Common_Language_Runtime

2. You can program in any number of .NET languages however they all compile down to MSIL (Microsoft Intermediate Language) which executes on the CLR (Common Language Runtime). A list of .NET languages:

   http://en.wikipedia.org/wiki/Category:.NET_programming_languages

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3. The ASP.NET framework is the set of namespaces (and associated classes) that are used to build internet applications and services.

4. The ASP.NET framework is open source: http://www.asp.net/open-source