**[Interview Questions ASP.NET Core](http://www.aspdotnet-suresh.com/2010/05/interview-questions-in-aspnetcnetsql.html)**

**Que:AddTransient, AddScoped and AddSingleton Services Differences**

* Transient objects are always different; a new instance is provided to every controller and every service.
* Scoped objects are the same within a request, but different across different requests
* Singleton objects are the same for every object and every request (regardless of whether an instance is provided in ConfigureServices)

<https://stackoverflow.com/questions/38138100/addtransient-addscoped-and-addsingleton-services-differences>

**Transient**

* since they are created every time they will use **more memory** & Resources and can have the **negative** impact on performance
* use this for the **lightweight** service with little or **no state**.

**Scoped**

* better option when you want to maintain state within a request.

**Singleton**

* memory leaks in these services will build up over time.
* also memory efficient as they are created once reused everywhere.

**1. What are some characteristics of .NET Core?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

* Flexible deployment: Can be included in your app or installed side-by-side user- or machine-wide.
* Cross-platform: Runs on Windows, macOS and Linux; can be ported to other OSes. The supported Operating Systems (OS), CPUs and application scenarios will grow over time, provided by Microsoft, other companies, and individuals.
* Command-line tools: All product scenarios can be exercised at the command-line.
* Compatible: .NET Core is compatible with .NET Framework, Xamarin and Mono, via the .NET Standard Library.
* Open source: The .NET Core platform is open source, using MIT and Apache 2 licenses. Documentation is licensed under CC-BY. .NET Core is a .NET Foundation project.
* Supported by Microsoft: .NET Core is supported by Microsoft, per .NET Core Support

**2. What is CTS?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

The Common Type System (CTS) standardizes the data types of all programming languages using .NET under the umbrella of .NET to a common data type for easy and smooth communication among these .NET languages. CTS is designed as a singly rooted object hierarchy with System.Object as the base type from which all other types are derived. CTS supports two different kinds of types: - Value Types: Contain the values that need to be stored directly on the stack or allocated inline in a structure. They can be built-in (standard primitive types), user-defined (defined in source code) or enumerations (sets of enumerated values that are represented by labels but stored as a numeric type). - Reference Types: Store a reference to the value‘s memory address and are allocated on the heap. Reference types can be any of the pointer types, interface types or self-describing types (arrays and class types such as user-defined classes, boxed value types and delegates).

**3. What is Zero Garbage Collectors?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Zero Garbage Collectors is the simplest possible implementation that in fact does almost nothing. It only allows you to allocate objects because this is obviously required by the Execution Engine. Created objects are never automatically deleted and theoretically, no longer needed memory is never reclaimed.

**4. Explain a simple GC implementation?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

It is an excellent basis for the development of your own Garbage Collection mechanism. It provides the necessary functionality to make runtime work properly and you can build on top of that.

It may be interesting for special use cases like very short living applications or such that almost no allocate memory (you can come up with those concepts as No-alloc or Zero-alloc programming). In such a case providing GC overhead is unnecessary and it may be wise to get rid of it. It is like making huge GC.TryStartNoGCRegion overall your application.

**5. When does Garbage collection occur?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Garbage collection occurs when one of the following conditions is true.

* The system has low physical memory.
* The memory that is used by allocated objects on the managed heap surpasses an acceptable threshold. This threshold is continuously adjusted as the process runs.
* The GC.Collect method is called and in almost all cases, you do not have to call this method, because the garbage collector runs continuously. This method is primarily used for unique situations and testing.

**6. What is CoreFx?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

CoreFx is the reimplementation of the class libraries for .NET Core.

**7. What is unit testing?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Unit testing is a development process for the software that has the smallest testable parts of an application, which are called units. They are individually and independently scrutinized for any proper operation. Unit testing is can either be automated or done manually as well.

**8. What are Empty migrations?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Sometimes it's useful to add a migration without making any model changes. In this case, adding a new migration creates code files with empty classes. You can customize this migration to perform operations that don't directly relate to the EF Core model. Some things you might want to manage this way are: - Full-Text Search - Functions - Stored procedures - Triggers - Views

**9. Differences Between .net Core and .net Framework?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

The differences between the two can be summarized in these three points:

**NuGet-based**: .NET Core is distributed as a set of NuGet packages that allow app-local deployments. In contrast, the .NET-Framework is always installed in a system-wide location. This difference doesn’t matter so much for class libraries, but it matters for applications as those are expected to deploy the closure of their dependencies. But we expect this model to change how quickly class library authors can take advantage of new functionality. Since the applications can simply deploy a new version (as opposed to having to wait until a given .NET Framework version is widely adopted), there is less of a penalty for component authors to take advantage of the latest features.

**Well layered**: .NET Core was specifically designed to be layered. The goal was to create a .NET stack that can accommodate a wide variety of capabilities and system constraints without forcing customers to recompile their binaries and/or produce new assets. This means that we had to remove certain APIs because they tied lower-level components to higher-level components. In those cases, we provide alternatives, often in the form of extension methods.

**Free of problematic tech**: .NET Core doesn’t include certain technologies we decided to discontinue because we found them to be problematic, for instance, AppDomain and sandboxing. If the scenario still makes sense for .NET Core, our plan is to have replacements. For example, AssemblyLoadContext replaces AppDomains for loading and isolating assemblies.

**10. What are complex and supporting methods?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

* The System.Numerics.Complex type represents a complex number, i.e., a number with a real number part and an imaginary number part
* It supports a standard set of arithmetic, comparison, equality, explicit conversion, and implicit conversion operators, as well as mathematical, algebraic, and trigonometric methods.

**11. What is FCL?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Framework Class Libraries (FCL)- The Framework class library (FCL) is a comprehensive collection of reusable types including classes, interfaces and data types included in the .NET-Framework to provide access to system functionality.

**12. What is IGCToCLR interface?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

This interface passed as an argument to the function InitializeGarbageCollector is used to communicate with the runtime. It contains quite a lot of available methods and listing them all here is pointless.

**13. What is Modularity?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Modularity leads to performance benefits and your application can run faster, especially ASP.NET Core application.

**14. Defines the types and methods of a class library?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

* A class the library defines the types and methods that can be called from any application.
* A class the library developed using .NET Core supports the .NET Standard Library, which allows your library to be called by any .NET platform that supports that a version of the .NET Standard Library.
* When you finish your class library, you can decide whether you want to distribute it as a third-party component, or whether you want to include it as a component that is bundled with one or more applications.

**15. What are the Fundamental Libraries?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Fundamental Libraries − A set of framework libraries, which provide primitive data types, app composition types and fundamental utilities.

**16. What are Generate SQL scripts in .Net core?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

When debugging your migrations or deploying them to a production database, it's useful to generate a SQL script. The script can then be further reviewed for accuracy and tuned to fit the needs of a production database. The script can also be used in conjunction with a deployment technology.

**17. Explain the difference between Task and Thread in .NET**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Thread represents an actual OS-level thread, with its own stack and kernel resources. Thread allows the highest degree of control; you can Abort() or Suspend() or Resume() a thread, you can observe its state, and you can set thread-level properties like the stack size, apartment state, or culture. ThreadPool is a wrapper around a pool of threads maintained by the CLR.

The Task class from the Task Parallel Library offers the best of both worlds. Like the ThreadPool, a task does not create its own OS thread. Instead, tasks are executed by a TaskScheduler; the default scheduler simply runs on the ThreadPool. Unlike the ThreadPool, Task also allows you to find out when it finishes, and (via the generic Task) to return a result.

**18. When should we use .NET Core and .NET Standard Class Library project types?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Use a .NET Standard library when you want to increase the number of apps that will be compatible with your library, and you are okay with a decrease in the .NET API surface area your library can access.

Use a .NET Core library when you want to increase the .NET API surface area your library can access, and you are okay with allowing only .NET Core apps to be compatible with your library.

**19. What are the advantages that you could speak about Web API?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Content Negotiation, routing, and model bindings are some of the top picks that one could say when it comes to the advantages of Web API.

**20. What is meant by Web API routing?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

It is a pattern matching routine that is similar to what is found in MVC architecture. Route Tables contain all the routes that have been registered.

**21. Briefly explain exception filters.**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Exceptions that are thrown but are not handled will lead to the execution of exception filters. IExceptionFilter interface is implemented by the exception filters.

**22. Explain the difference between a class and an object.**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

In short, a class is the definition of an object, and an object is instance of a class.

We can look at the class as a template of the object: it describes all the properties, methods, states and behaviors that the implementing object will have. As mentioned, an object is an instance of a class, and a class does not become an object until it is instantiated. There can be more instances of objects based on the one class, each with different properties.

**23. Explain LINQ.**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

LINQ is an acronym for Language Integrated Query, and was introduced with Visual Studio 2008. LINQ is a set of features that extends query capabilities to the .NET language syntax by adding sets of new standard query operators that allow data manipulation, regardless of the data source. Supported data sources are: .NET Framework collections, SQL Server databases, ADO.NET Datasets, XML documents, and any collection of objects that support IEnumerable or the generic IEnumerable interface, in both C# and Visual Basic. In short, LINQ bridges the gap between the world of objects and the world of data

**24. Explain the difference between the Stack and the Heap.**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

The short answer would be: in the Stack are stored value types (types inherited from System.ValueType), and in the Heap are stored reference types (types inherited from System.Object).

We can say the Stack is responsible for keeping track of what is actually executing and where each executing thread is (each thread has its own Stack). The Heap, on the other hand, is responsible for keeping track of the data, or more precise objects.

**25. What is a delegate in .NET?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

A delegate in .NET is similar to a function pointer in C or C++. Using a delegate allows the programmer to encapsulate a reference to a method inside a delegate object. The delegate object can then be passed to code which can call the referenced method, without having to know at compile time which method will be invoked. In addition, we could use delegate to create custom event within a class.

**26. Define encapsulation.**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Encapsulation is a function that includes various methods and data within a project. This is done so that the object of the program could perform its functions smoothly and without any errors.

**27. Is there a difference between ‘debug’ and ‘trace’?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Yes. The Trace class can be used for debugging and releasing certain builds, while Debug is used solemnly for – you’ve guessed it – debugging.

This can be classified as one of the trick .NET interview questions, for it is quite easy to get forget about Trace’s additional function.

**28. What’s inheritance?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Although this isn’t necessarily one of the primary .NET interview questions, it is still often asked because of how it relates to .NET.

Inheritance happens when one smaller class takes on the features and parameters of another, bigger class. This bigger class is then seen as a “parent class” to the smaller one.

This is also one of the better .NET framework interview questions to expand upon. .NET supports only single inheritance. What this means is that the smaller, child class can only benefit (inherit) from one parent class.

**29. Define caching.**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Caching is a process when you keep your most often used files and data in a separate memory. This separate location – a cache – is where you can access all of your designated files. Caching saves developers a lot of time and increases their memory management.

**30. What is a ‘.dll’ file?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

DLL files are those which need to be hidden out of plain sight. The term directly abbreviates to “Dynamic Link Library”. These libraries are vast, containing a huge amount of files and commands. DLLs can also be shared among other programs and apps. A small piece in .NET interview questions but can make a huge difference.

**31. Can you specify access modifiers in an interface?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Assuming that the question relates to the item access modifiers – no, no you can’t. Why? Simply because the interface is always public.

**32. What are advantages of Garbage Collection?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

Garbage Collection provides the following benefits: - You don’t need to free the memory manually while developing your application. - It also allocates objects on the managed heap efficiently. - When objects are no longer used then it will reclaim those objects by clearing their memory, and keeps the memory available for future allocations. - Managed objects automatically get clean content to start with, so their constructors do not have to initialize every data field. - It also provides memory safety by making sure that an object cannot use the content of another object.

**33. What is UWP App in .Net core?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

UWP apps will be able to use libraries you have created in .net core as long as you target the .netstandard1.6 (or higher) framework moniker. UWP is only for the Windows ecosystem.

**34. What is MSBuild and how it works with .NET Core?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

MSBuild is the build platform for Microsoft and Visual Studio. In the UWP application if you open the project folder, then you will see both project.json and \*.csproj files. But if you open our previous .NET Core Console app, then you will see project.json and \*.xproj files.

**35. How does MEF work?**[**↑**](https://www.adaface.com/blog/dot-net-core-interview-questions/#questionsindex)

It allows application developers to discover and use extensions with no configuration required. MEF is an integral part of the .NET Framework 4 and is available wherever the .NET-Framework is used that improves the flexibility, maintainability, and testability of large applications

https://www.chubbydeveloper.com/top-20-asp-net-core-interview-questions/

## What functionalities are supported by ASP.NET Core?

* Built-in support for dependency injection
* Built-in support for an extensible logging framework
* Contains Kestrel – a cross-platform web server that allows web applications to execute without the need for IIS, Apache or Nginx.
* Functionality to use multiple hosts
* Supports modularity – the developer must include the module that is required by the application.
* Makes use of an app JSON file to store settings instead of a web.config
* Contains a startup class to initiate and run services (Instead of global. asax)
* Has extensive support for asynchronous programming

## What is ASP.NET Core Middleware?

ASP.NET Core Middleware is a group of small modules that are incorporated into an HTTP request pipeline. Middleware is used to implement several tasks when handling requests. Such examples include authentication, session state retrieval and persistence, logging and much more. It gives you control on the order of when the requests should be executed, unlike ASP.NET Core HTTP modules

Middleware is configured by code rather than web.config in ASP.NET. It is found inside your Startup.cs file:

public void Configure(IApplicationBuilder app, IWebHostEnvironment env)

{

if (env.IsDevelopment())

app.UseDeveloperExceptionPage();

app.UseHttpsRedirection();

app.UseExceptionHandler();

app.UseRouting();

app.UseAuthorization();

app.UseEndpoints(endpoints =>

{

endpoints.MapControllers();

});

app.UseStaticFiles();

}

The configure method as seen above is used to create a request pipeline via middlewares. The method applies the following functionality:

* Adds error pages and error handlers
* Adds HTTPS Redirection
* Adds support for static files
* Makes use of ASP.NET Identity authentication
* Adds routing and endpoint using map controllers

## What is the difference between ASP.NET and ASP.NET Core?

ASP.NET Core is a total rewrite of ASP.NET. It is an open-source cross-platform that allows you to build web applications in Windows, Mac and Linux. It is also capable of working with both .NET Core and .NET Framework.

Here are the main differences:

* Project configuration – ASP.NET Core does not make use of web.config. Instead, appsettings.json or other custom configuration files are used. A new folder named wwwroot is also added to the project structure. This is the container for all static files which are sent to the browser such as CSS, HTML, JavaScript and image files.
* Not dependent on IIS – It is not IIS dependent like ASP.NET and allows you to host on IIS, Docker, Nginx, Kestral and Apache.  
  Installation – since its cross-platform, frameworks are prepackaged and compiled via NuGet.
* Microservices – Microservices were simplified in .NET Core. Programmers can develop custom microservices and combine them to build powerful systems seamlessly.

## What is Kestral?

Kestrel is a web server build for ASP.NET core which is cross-platform

* It is based on libuv – a cross-platform asynchronous I/O library
* It is the default web server for all ASP.NET Core templates.
* It is fast and secure and can even be used without a reverse proxy server. However, it is still recommended to use with IIS, Nginx or Apache.

## What are Razor Pages in ASP.NET Core?

As of ASP.NET Core 2.1, Razor pages were introduced. It follows a page-development model like in ASP.NET web forms.  
Razor pages start with a @page directive. This means that it handles requests directly without the need to go through the controller.

Here is an example of the page and model directive in the CSHTML file and its associated page model class (CSHTML.CS)

@page

@model AboutModel

<div>

The current time is @Model.CurrentTime.ToShortTimeString()

</div>

--About.cshtml.cs---

using System;

using Microsoft.AspNetCore.Mvc.RazorPages;

public *class* AboutModelModel : PageModel

{

public DateTime CurrentTime = DateTime.UtcNow;

}

When comparing with the classic Home Controller example in ASP.NET MVC, the equivalent of razor pages would be Index (Home), About, Contact and Error pages all in the root directory.  
For example in each page, you will find the HTML page (cshtml) and its page model class page (cshtml.cs). This is in contrast with MVC approach where controllers, view models and view models all had different locations in entirely different folders.

## Can ASP.NET Core work with .NET Framework?

Yes. ASP.NET Core can work with .NET framework using the .NET standard library.

## What’s the difference between .NET Core .NET Framework and .NET Standard?

.NET Standard is a specification for implementing the Base Class Library (BCL). BCL contains classes such as exception handling, XML, collections, I/O and networking. WPF, WCF and ASP.NET do not form part of BCL and so are not included in .NET Standard library.

* NET Core is a managed framework that builds desktop and web applications in cross-platform.
* .NET Framework is a framework that builds desktop and web applications in Windows only. It is highly dependent on the architecture.
* Both “.NET Core” and “.NET Framework” include .NET Standard for BCL in their managed framework.

## What is routing in ASP.NET Core?

In ASP.NET Core, routing is the process of mapping incoming requests to the route handler. The route can have arguments inside the URL which are then used to process the call. Routing works by finding the route handler based on the URL given. There are two types of routing in ASP.NET Core.

Attribute – used in REST APIs  
Conventional – used with controllers and views in MVC architecture

endpoints.MapControllerRoute( name: "default", pattern: "{controller=Home}/{action=Index}/{id?}");

Above is an example to map both conventionally routed controllers and attribute controllers.

## How do you enable a session in ASP.NET Core?

The package Microsoft.AspNetCore.Session provides the middleware for the session. To make use of this session in an ASP.NET Core application, you need to include this package in its csproj file. The Session middleware must then be added in the Startup file in the ASP.NET Core request pipeline.

public *class* Startup

{

public void ConfigureServices(IServiceCollection services)

{

...

services.AddSession();

services.AddMvc();

}

public void Configure(IApplicationBuilder app, IHostingEnvironment env)

{

...

app.UseSession();

}

}

## Advantages of ASP.NET Core over ASP.NET

Here are a number of reasons why ASP.NET Core is better than ASP.NET:

1. It is cross platform (Windows/Linux/Mac/Android/iOS)
2. There exists no dependencies in the framework installation because the packages that are required are directly integrated with application
3. It handle a higher number of requests than ASP.NET
4. ASP.NET Core offers numerous deployment options.

## What is WebListener?

WebListener is a web server in ASP.NET Core that runs only on Windows host machines. It is an alternative to Kestrel and is built on HttpSys kernel-mode driver. Also, is used for direct connection to the internet without the need of an IIS as a reverse proxy server. It is not compatible with IIS.

## What is IWebHostEnvironment interface used for?

**IWebHostEnvironment** is an interface for .NET Core. It is used to get information on the web hosting environment an application is executing in. It needs to be injected as a dependency on the controller. The interface has two properties:

* **WebRootPath** – Path of the WWW folder
* **ContentRootPath** – Path of the root folder which includes all the application files.

## What are the Service lifetimes?

Service lifetimes define the conditions in which a new service instance will be instantiated. Here are the three types of service lifetimes defines by the .NET Core DI framework:

Transient – Instance is created every time they are requested.  
Scoped – Per every web request or any unit of work. We call this a scope.  
Singleton – Created only for the first request. If the singleton instance is specified at registration time, the instance will be available to all consumers of the registration type.

//Transient

services.AddTransient<ILifeServiceExample, LifeServiceExample>();

//Scoped

services.AddScoped<ILifeServiceExample, LifeServiceExample>();

//Singleton

services.AddSingleton<ILifeServiceExample, LifeServiceExample();

## What is wwwroot folder in ASP.NET Core?

By default. the wwwroot is the root folder that contains the static files such as HTML, CSS and Javascript.

The files can be stored here and accessed with a relative path to the root. Only these files inside the wwwroot can be served over HTTP Requests. All other files are filtered out and cannot be served by default.

The files can be accessed in this format:

http://domain:<port>/html/app.html

To set this up you need to add a middleware for serving static files in the Configure method of your Startup.cs.

## What is the difference between UseIIS & UseIISIntegration?

Before ASP.NET Core 2.2, ASP.NET Core was hosted outside of the IIS process. This meant that we had two processes for ASP.NET core application:

w3wp.exe – the IIS Process  
dotnet.exe – the ASP.NET Core process. This is where Kestrel web server was started.

IIS and Kestrel communicated between these two mentioned processes. In this case, you need to use UseIISIntegration.

However, in later versions, ASP.NET Core introduced in-process hosting. ASP.NET Core no longer ran separately but runs inside IIS w3wp.exe process. This removes the need for the Kestrel web server. For this case, you would need to specify UseIIS.

What is Dependency Injection and how is it implemented in ASP.NET Core?

A dependency is any object that is required from another object. Here is an example of a dependency:

public *class* DependencyClass

{

public DependencyClass() { }

public Task SayHello(string name)

{

Console.WriteLine($"Hello to you, {name}"); return Task.FromResult(0);

}

}

Now, an instance can be created from DependencyClass to get access to ‘SayHello’ method. DependencyClass now becomes a dependency of the AboutModel. See example below:

public *class* AboutModel : PageModel

{

DependencyClass \_dependencyClass = new DependencyClass();

public async Task IntroduceAsync()

{

await \_dependencyClass.SayHello("AboutModel.IntroduceAsync created this message");

}

}

This creates a problem because code dependencies (as above example) are problematic and it is recommended not to use where possible. Reasons for this are the following:

In order to replace DependencyClass with a different implementation, the class itself must be modified.  
If DependencyClass has dependencies, they must be set up by the class. With large projects containing multiple classes depending on DependencyClass, this will be cumbersome.  
It will be hard to unit test. DependencyClass cannot be mocked or stubbed in this case.

This is where Dependency injection comes in. This is how it addresses these problems in ASP.NET Core:

Interface or base class as an abstraction for the dependency implementation (IDependencyClass)

The dependency must be registered as a service inside a service container. ASP.NET Core contains a built-in service container, IServiceProvider. Services are registered in the app’s Startup configure method.

The service is then injected into the constructor in the class it’s used in. The framework takes care of instantiating the dependent and disposing of it.

The above technique is called Inversion of Control (IoC) between classes and their dependencies. For more information and samples how to do this, see here.

## What are technologies discontinued in .NET Core?

he following technologies have been discontinued in .NET Core:

* **Reflection** – Has been converted into a lightweight version. An extension method called GetTypeInfo exposes information that you normally retrieve from Type object. However, it is not as detailed as the original.
* **AppDomain** – AppDomains isolate apps from each other. They require runtime support and are costly. Creating more app domains is unsupported and there aren’t any plans to add this in the future. Microsoft recommends using separate processes or containers as an alternative.
* **Remoting** – .NET Remoting created several issues in its architectural design. Since it’s used for cross-AppDomain, which is no longer supported, it was decided to not support it either. It also cost them a lot due to runtime support.
* **Security Transparency** – Due to security reasons, Security transparency is no longer supported. It used to separate sandbox code from security-critical code in a declarative method. Microsoft recommends you use security boundaries provided by the operating system itself. Such examples include virtualization, contained or user accounts.

## What does Configure Services method do in the startup class?

ConfigureServices method takes care of registering services which are consumed across the application using Dependency Injection (DI) or Application Services.

public void ConfigureServices(IServiceCollection services)

{

services.AddEntityFramework()

.AddSqlServer()

.AddDbContext<MusicContext>()

.AddControllersWithViews().AddRazorPages();

}

## What is a Self-hosted Web Application?

SP.NET Core is fully decoupled from the web server environment hosting the application. It still supports IIS and IIS Express but by default, it uses self-hosting scenarios by using Kestrel and WebListener HTTP Servers.

Here is a sample of how to configure a web application that is self-host:

public *class* Program

{

public static void Main(string[] args)

{

var config = new ConfigurationBuilder()

.AddCommandLine(args)

.AddEnvironmentVariables(prefix: "ASPNETCORE\_").Build();

var host = new WebHostBuilder()

.UseConfiguration(config)

.UseKestrel()

.UseContentRoot(Directory.GetCurrentDirectory())

.UseStartup<Startup>().Build();

host.Run();

}

}

## What is a .NET Generic Host?

As of ASP.NET Core 3, they exported ASP.NET code to run on a .NET Generic Host instead of the previously used WebHost. .NET Generic Host is a non-web version of the WebHost that runs on ASP.NET Core. It is an abstraction layer for both Web and non-web functionality.

They decoupled HTTP pipeline from the Web Host API to enable a wider collection of host environments. For example, non-HTTP workloads that used to be in Web Host API were background tasks, messaging, dependency injection (DI), logging and more. Now they have been separated completely using the Generic host. With this abstraction, developers are able to use these mechanisms for console applications, systemmds, windows services, and web applications.

How to configure Logging in ASP.NET Core

ASP.NET Core supports a logging API that works with multiple built-in and third-party logging providers. To set up logging in ASP. NET Core you need to apply the following;

public static IHostBuilder CreateHostBuilder(string[] args)

{

Host.CreateDefaultBuilder(args).ConfigureLogging(logging =>

{

logging.ClearProviders();

logging.AddConsole();

logging.AddDebug();

logging.AddTraceSource("Information");

}).ConfigureWebHostDefaults(webBuilder =>

{

webBuilder.UseStartup<Startup>();

});

}

In the above example, the ConfigureLogging() method takes action to delegate Action<ILoggingBuilder> to configure logging providers. To add custom logging providers, start off by removing all default providers. To do this call ClearProviders(). In our example, we add the Trace Souce and Debug providers instead. We also add the Console logging provider to add logs to console too.

## What is the difference between Pages and Views ?

Pages is a new page framework that was introduced in .NET core 2.0. Pages is an evolution of the old WebFroms and provides an easier way to generate pages as opposed to asp.net MVC.

The Razor Page is very similar in concept to the standard Model View Controller framework. In main difference is that the Model and the controller are included inside the page. Razor Pages provide a simpler development approach when compared to the standard MVC framework.