

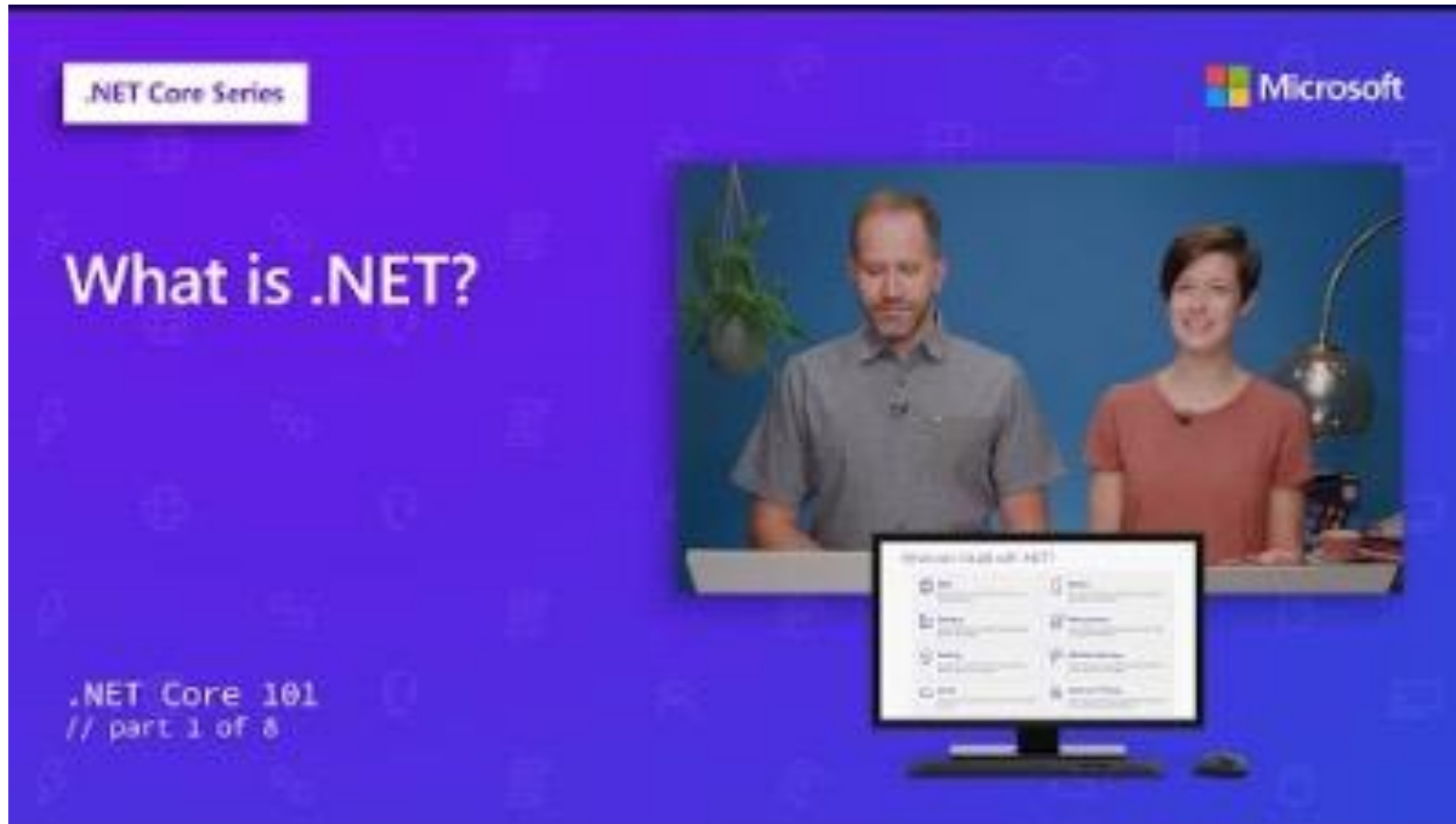
What is .NET?

.NET is an open-source developer platform made up of tools, programming languages, and libraries for building different types of applications.

Platforms:

- **.NET** is a cross-platform implementation for running websites, services, and console apps on Windows, Linux, and macOS. .NET is open source on GitHub. .NET was previously called .NET Core.
- **.NET Framework** is the original implementation of .NET. It supports running websites, services, desktop apps, and more on Windows.
- **Xamarin/Mono** is a .NET implementation for running apps on all the major mobile operating systems, including iOS and Android.
- **.NET Standard** is the shared set of libraries for the above

What is .NET? (Video)

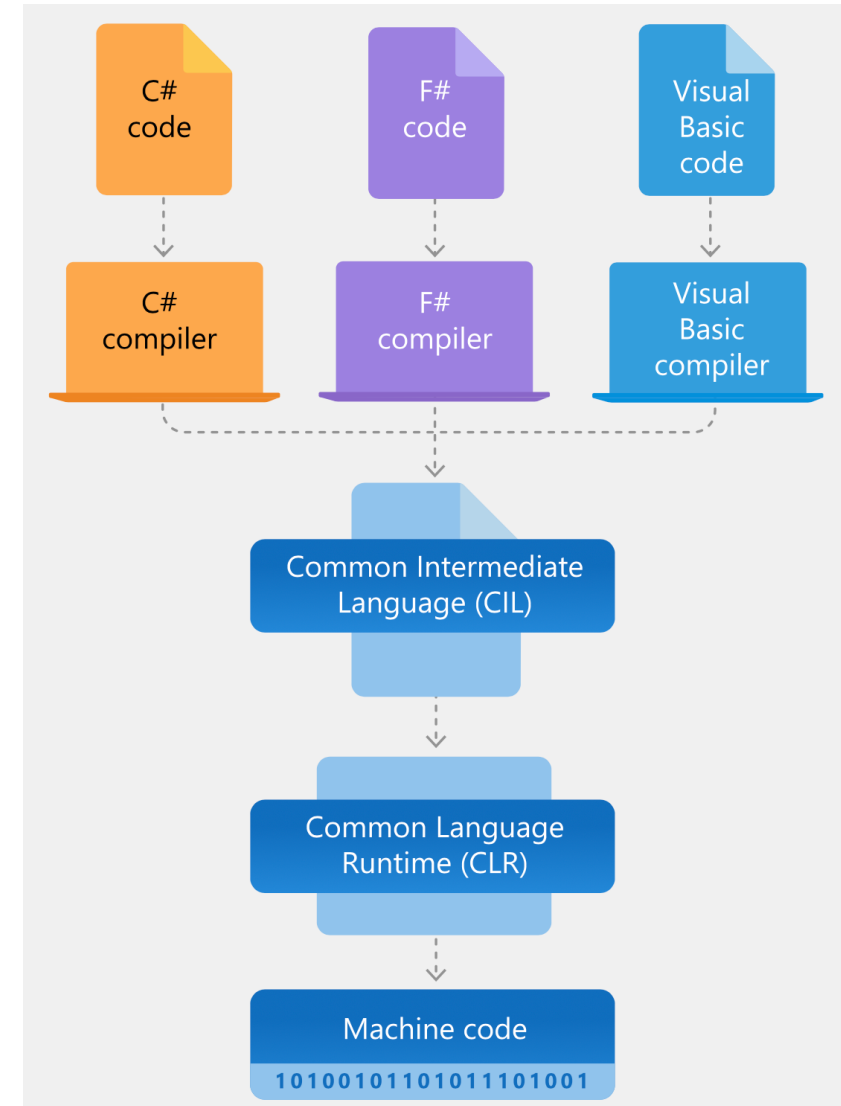


What is .NET Framework?

The two major components of .NET Framework are the Common Language Runtime and the .NET Framework Class Library.

- .NET applications are written in the C#, F#, or Visual Basic programming language. Code is compiled into a language-agnostic Common Intermediate Language (CIL). Compiled code is stored in assemblies—files with a .dll or .exe file extension.
- The Common Language Runtime (CLR) is the execution engine that handles running applications. It provides services like thread management, garbage collection, type-safety, exception handling, and more.
- The Class Library provides a set of APIs and types for common functionality. It provides types for strings, dates, numbers, etc. The Class Library includes APIs for reading and writing files, connecting to databases, drawing, and more.
- When an app runs, the CLR takes the assembly and uses a just-in-time compiler (JIT) to turn it into machine code that can execute on the specific architecture of the computer it is running on.

Source: <https://dotnet.microsoft.com/en-us/learn/dotnet/what-is-dotnet-framework>

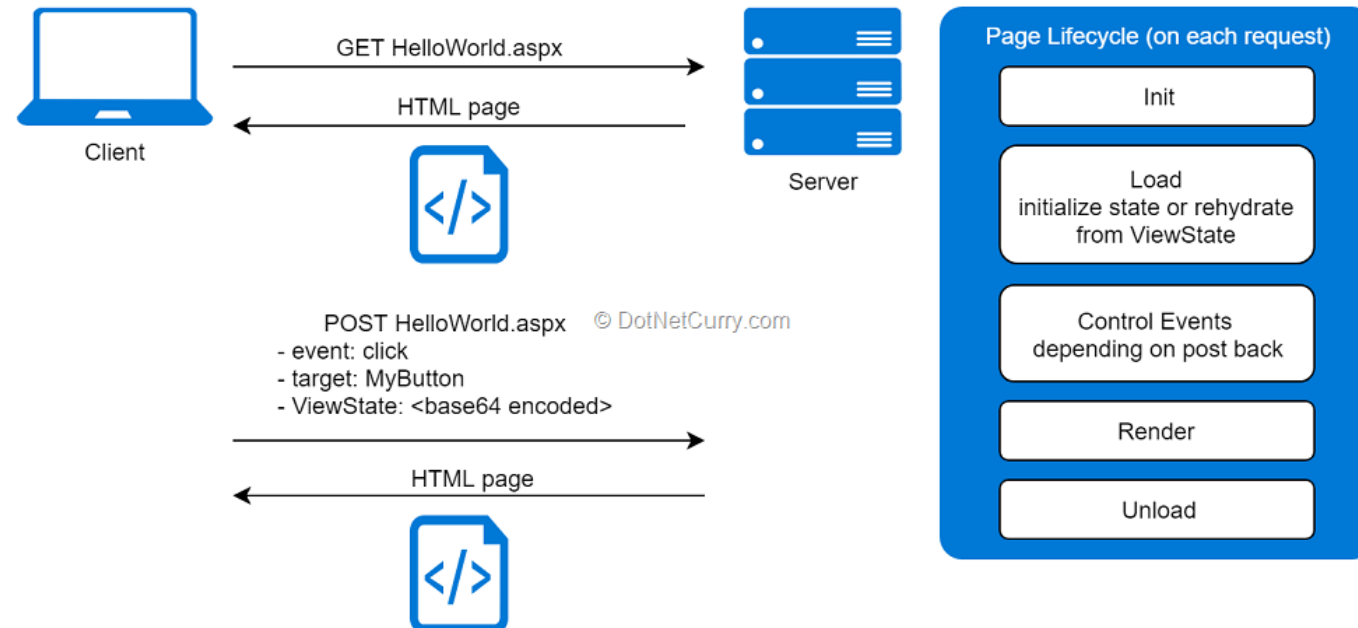


What is ASP.NET Core?

- ASP.NET is a popular web-development framework for building web apps on the .NET platform.
- ASP.NET Core is the open-source version of ASP.NET, that runs on macOS, Linux, and Windows.
- ASP.NET Core was first released in 2016 and is a re-design of earlier Windows-only versions of ASP.NET.

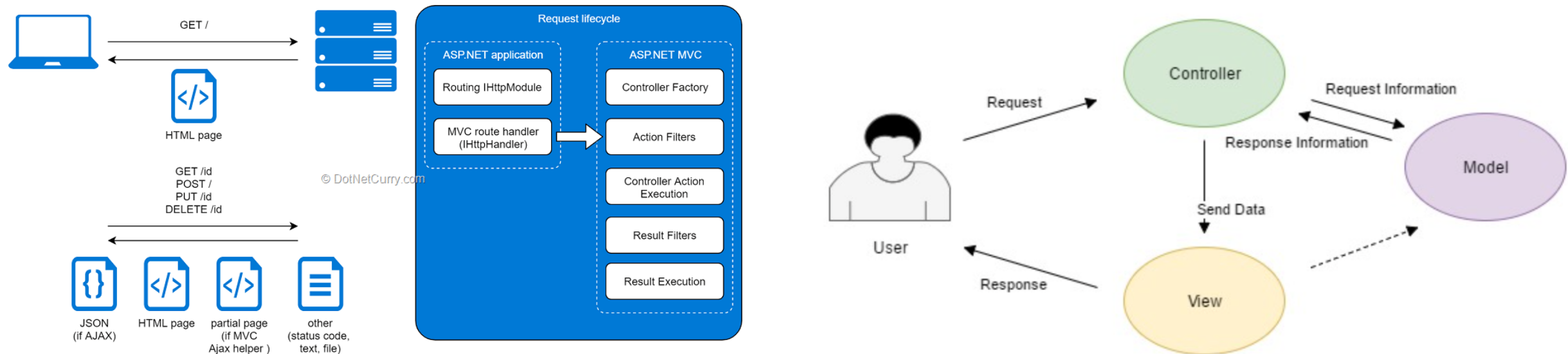
A Brief History of ASP.NET Core (1/3)

- Web Forms (2002 – 2008)
 - Each page in the application is created as a Web Form and associated with an .aspx URL.
 - The page is loaded through a GET request and sent to the browser.
 - Controls within the page such as buttons would cause a POST to the same URL, which is handled by the same Web Forms page.



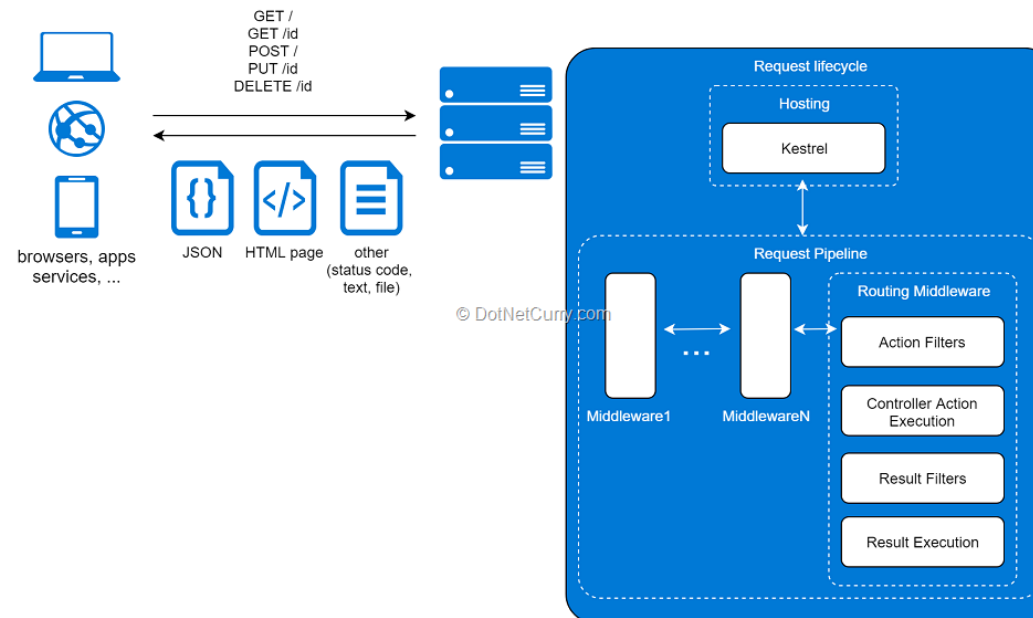
A Brief History of ASP.NET Core (2/3)

- ASP.NET MVC (2008 – 2014)
 - A HTTP request would now be served by a specific Action method of a Controller class.
 - The URL was matched to the controller and action through a new routing module that allowed convention-based routes with the default /controller/action.
 - The action method would then perform the necessary logic needed to serve the request and return an Action Result, where rendering a View was only one of the results.
 - Views would be ASPX templates located in a different folder from the controller.



A Brief History of ASP.NET Core (3/3)

- ASP.NET Core (2014 – today)
 - Creating a web application in ASP.NET Core felt very similar to creating an MVC/Web API application.
 - Common functionality like Authentication is implemented as a middleware, and developers can easily create and register their own middleware.
 - This way a pipeline gets defined, in which a request flows through the different middleware until it reaches the routing middleware that delegates to the controller action.



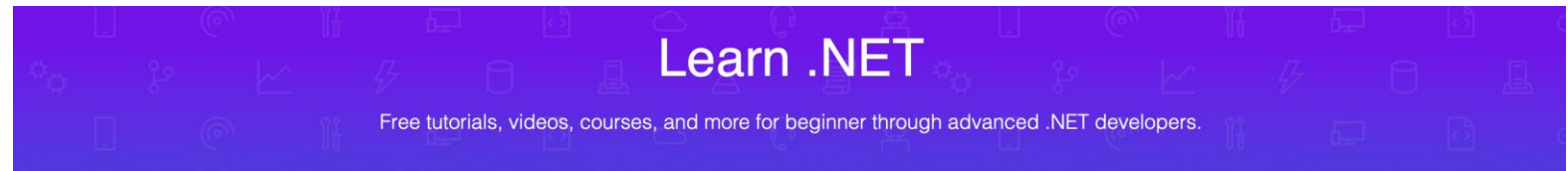
What is ASP.NET Core? (Video)



What is C#? (Video)











- [Console](#)
- [In-Browser Tutorial](#)
- [Web](#)



Get started tutorials

New to .NET and don't know where to start? You can try .NET in your browser, at the console on your machine, or by building the app of your choice.

 Console Build a simple text-based application that runs in the console/terminal.	 C# In-browser Tutorial Learn C# in your browser, without installing anything on your computer.	 Web Create a web app with ASP.NET Core and Blazor that runs on macOS, Windows, Linux, and Docker.	 Mobile Build an app that dials numbers on iOS, Android, and Windows devices.
 Windows Develop a simple app using WPF that adds names to a list box.	 Machine Learning Build a machine learning model to classify iris flowers.	 Game Development Create a 3D spinning cube with Unity.	 Internet of Things Read environmental sensors and activate relays using the .NET IoT Libraries.