

GET STARTED DEVELOPING WEB APPS WITH BLAZOR



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AGENDA

- What is Blazor?
- Hosting models
- Components and Logic
- Pros and Cons
- Resources
- Demo!
- Q&A





WHAT IS BLAZOR?

What is Blazor?

- Blazor is an open-source framework for building web applications with C#, HTML, and CSS.
- Composed of reusable web UI components built using C#, HTML, and CSS.
- Share C# code and libraries with the front-end and back-end.
- Two hosting models:
 - Blazor WebAssembly: apps run client-side in the browser.
 - Blazor Server apps are executed on a server from within an ASP.NET Core app.
- You can build Blazor apps by using the latest version of Visual Studio, Visual Studio for Mac, or Visual Studio Code and .NET 5 SDK



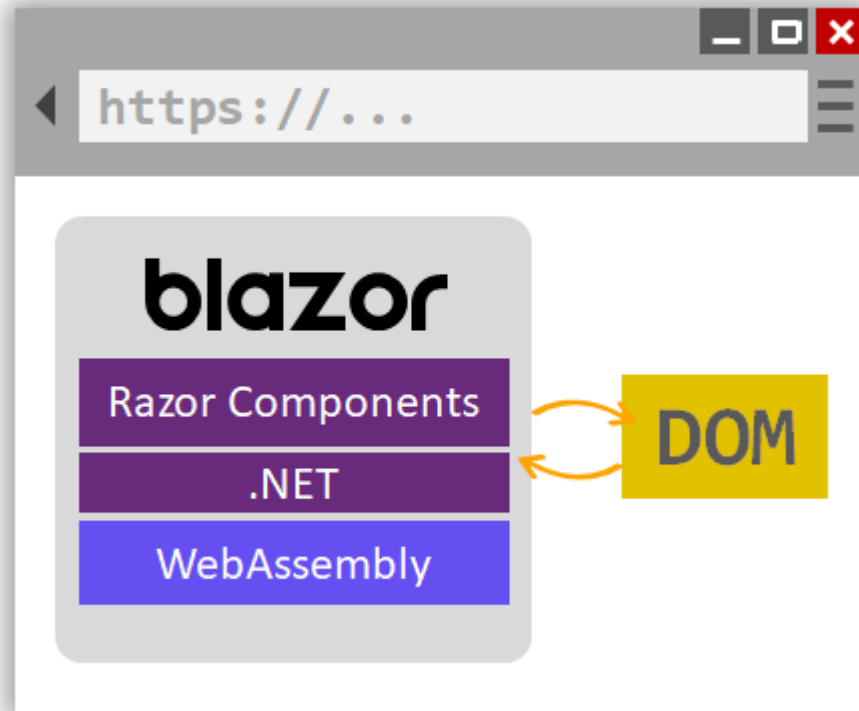
HOSTING MODELS

Blazor has two

Blazor WebAssembly

- [WebAssembly](#) (WASM) is a **low-level assembly-like language** with a compact binary⁺ format. It provides a way to run code written in multiple languages on the web at **near-native speed**. It's designed to work alongside JavaScript, and this is what enables Blazor WASM.
- **Blazor WASM** uses a .NET runtime compiled to WebAssembly to execute the .NET code.
- WASM requires a modern desktop or mobile browser.
 - Microsoft Edge
 - Mozilla Firefox
 - Google Chrome
 - Apple Safari.

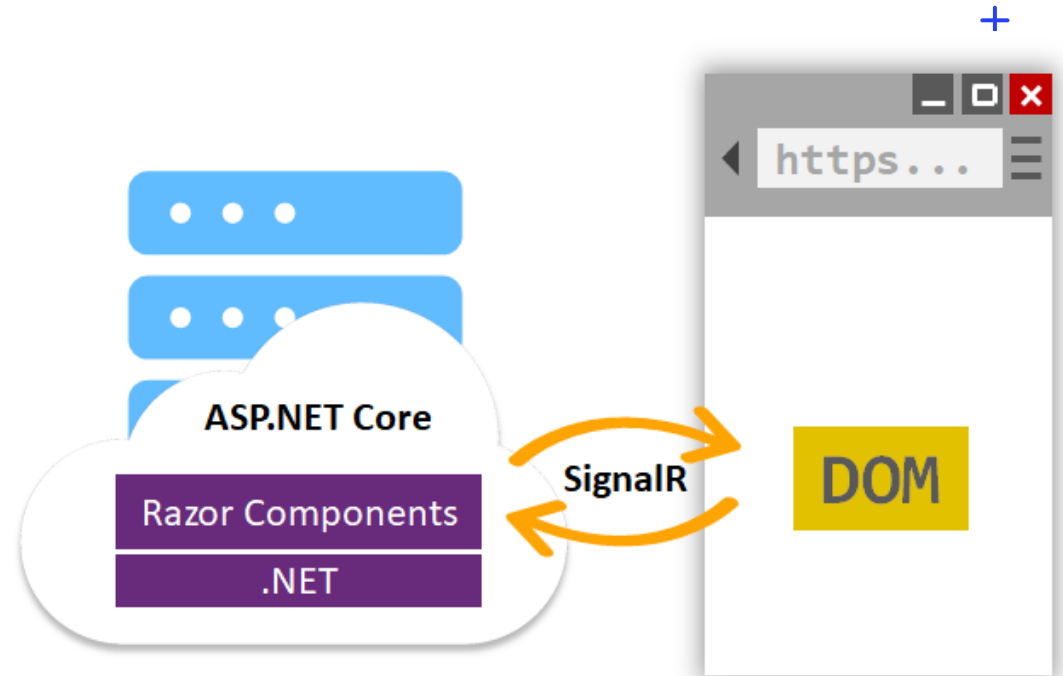
Blazor WebAssembly



- Apps run client-side in the browser on a WebAssembly-based .NET runtime. The app, its dependencies, and the .NET runtime are downloaded to the browser
- You can access all the browser's functionality [via JavaScript interop](#).

Blazor Server

- With Blazor Server, the runtime is hosted in an [ASP.NET](#) core app.
- The server handles executing the C# code, sending UI events from the browser to the server, and applying UI updates to the Razor components.
- A [SignalR](#) connection is used to handle updates to the UI and JavaScript interop calls.



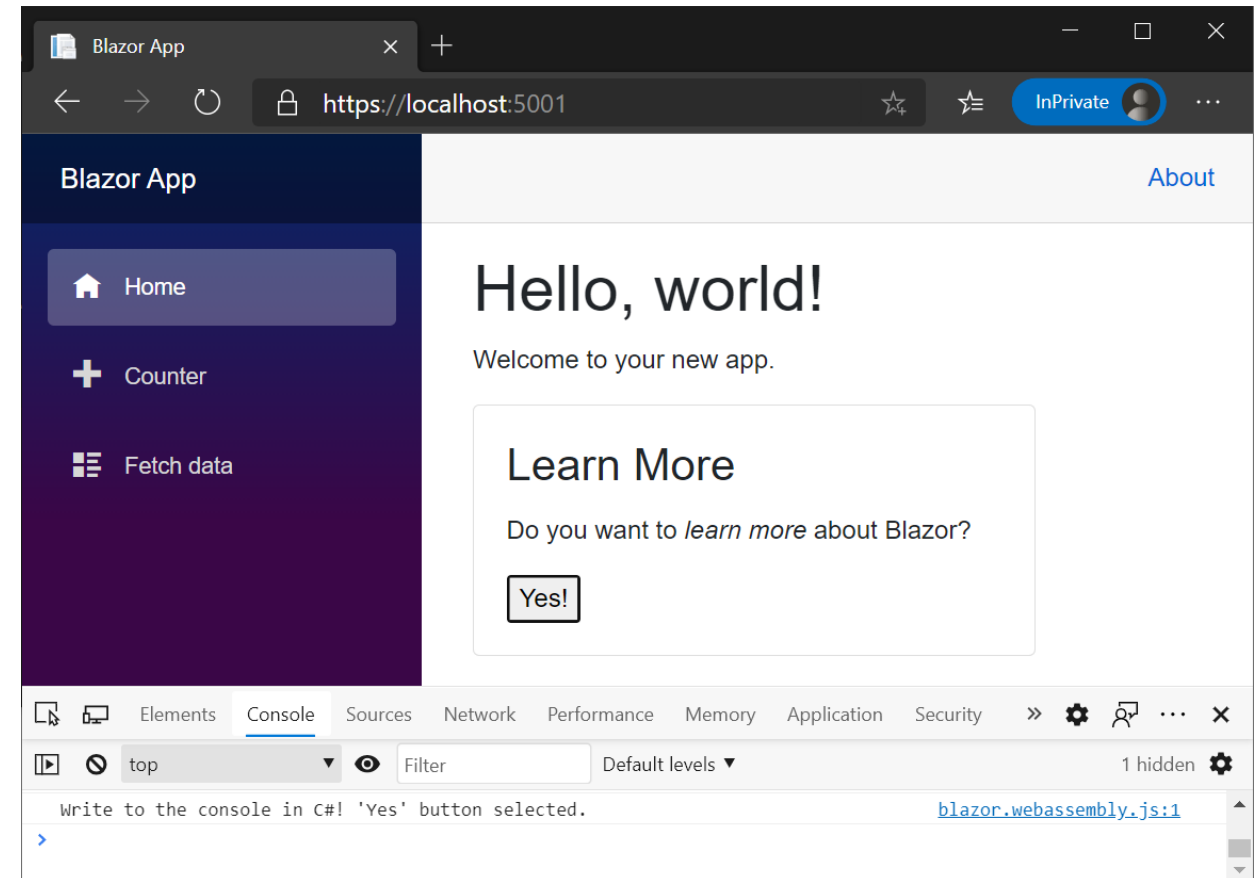


BUILDING BLAZOR APPS

Components and Logic

Blazor Components

- A component is a self-contained portion of user interface (UI) with processing logic
- A Blazor app is made up of Razor components.
- Components are built using Razor, a markup syntax that uses HTML and C#.
- At compile time, each .razor file is built into a .NET class.
- Components can be nested, reused, and shared among projects (Blazor server, MVC, Razor pages).



Adding logic to your apps

- In Blazor you can add C# code in a separate .cs file (code-behind) or inline in your Razor components.
- In your Razor components, use the @ symbol to transition from HTML to C#.
- Example:
 - Code:
 - `@{ var name = "Gwyneth"; }`
 - `<p>@name</p>`
 - Would render to HTML:
 - `<p>Gwyneth</p>`
- The `@code { }` block enables a Razor component to add C# members (fields, properties, and methods).
- Use `@bind` to bind a C# variable to an HTML object. Data is pushed from HTML to .NET when a component is rendered.



PROS AND CONS

It's not all perfect!

Pros and Cons of Blazor WASM

Pros

- Runs inside the client browser, so it can be deployed as static site.
- Can work offline and as a Progressive Web App
- Server load is significantly reduced.

Cons of client-side Blazor

- WASM downloads all required .NET DLL assemblies, making the first-time start-up time slower than server-side and JavaScript apps (Subsequent start-up times are much faster because the DLLs are cached by the browser).
- Like other single page application (SPA) frameworks, not search engine friendly.

Pros and Cons of Blazor Server

Pros

- Search-engine friendly,
- no perceivable start-up time.
- Works on older browsers as there is no requirement for Web Assembly, only HTML and JavaScript.

Cons

- Server costs
- Can't work offline.



RESOURCES

Learn more and get hands-on!





Learn more

- [Blazor homepage](#)
- [Introduction to ASP.NET Core Blazor](#)
- [Host and deploy ASP.NET Core Blazor WebAssembly](#)
- [Project structure for Blazor apps](#)
- [Build progressive web applications with ASP.NET Core Blazor WebAssembly](#)

Get more practice

- [Build a Blazor to-do list](#)
- [Blazor Pizza Store workshop](#)
- [Repo for this demo](#)

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