Tabya Conf 2024

Intelligenza Artificiale e Sviluppo di applicazioni moderne

Build web apps with Blazor and .NET 8

.NET IN PILLOLE
il podcast

Andrea Dottor

Microsoft MVP

I nostri sponsor

MESA.

OVERNET.

ellycode

WHAT DO YOU NEED?

brandplane

MAKES YOUR CONTENT FLY

software house NET

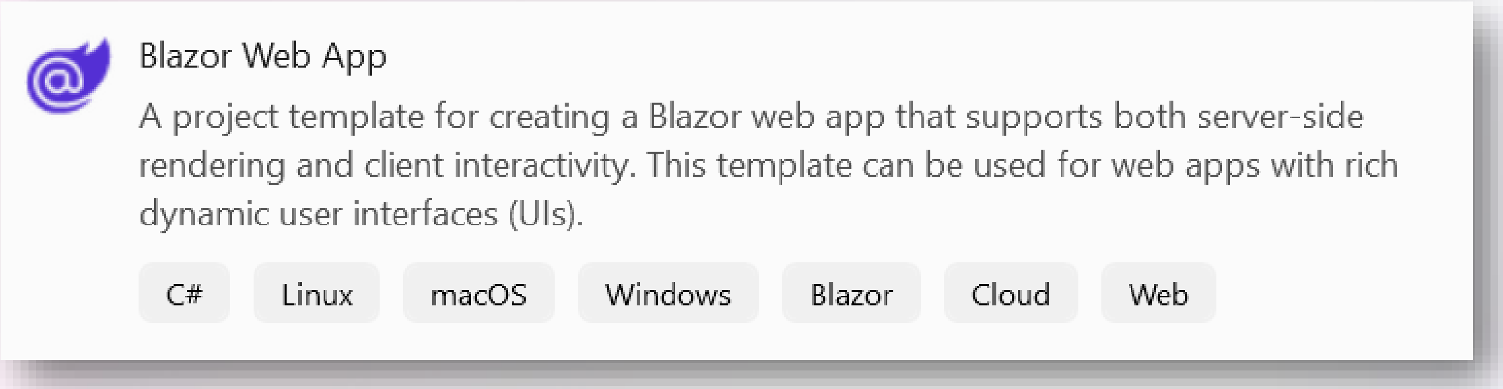
Blazor: Full Stack Web UI framework!

"Blazor is a full-stack web UI framework and is recommended for most web UI scenarios."

Source: https://learn.microsoft.com/en-us/aspnet/core/tutorials/choose-web-ui

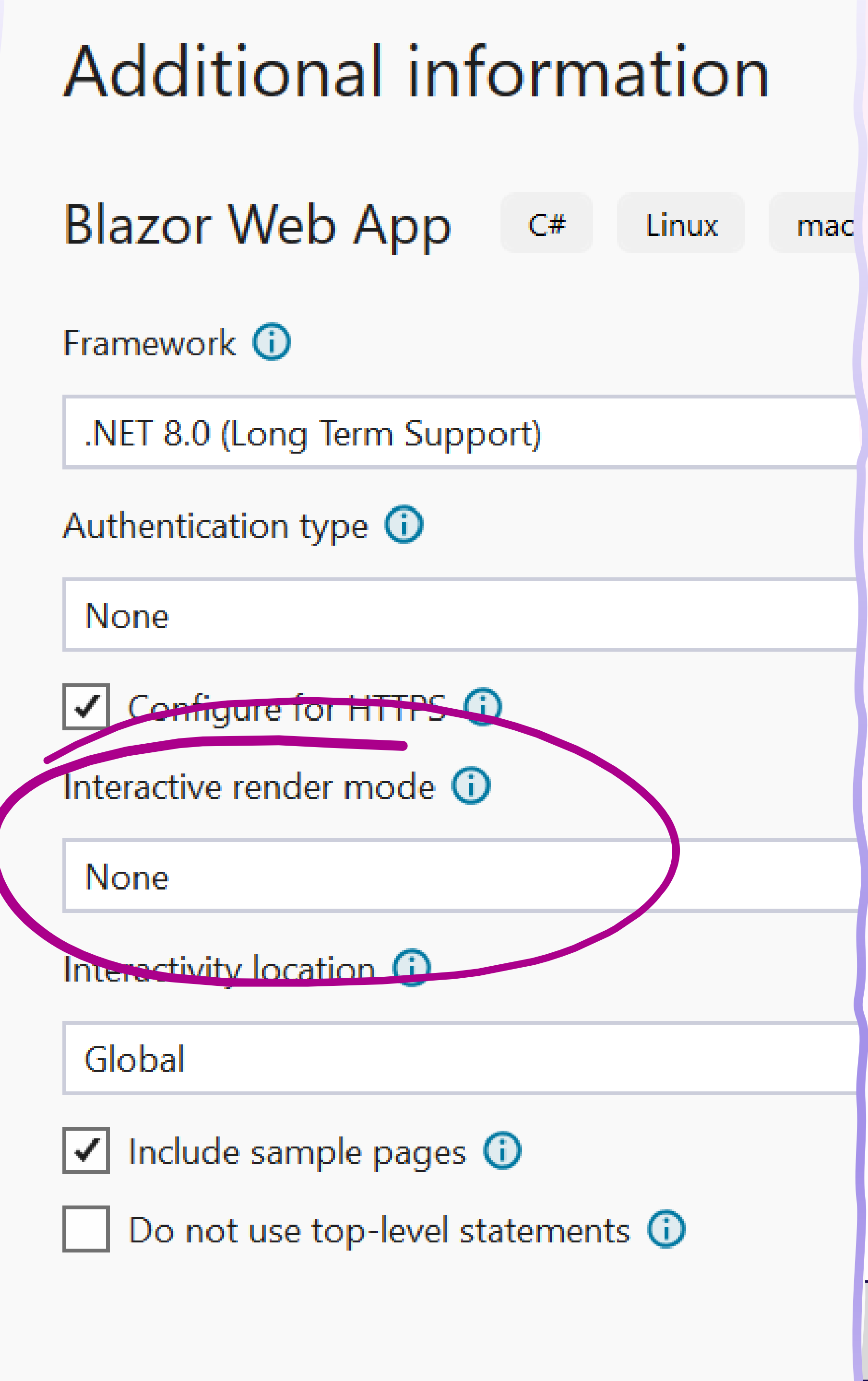
MESA. OVERNET. ellycode WHAT DO YOU NEED? brandplane MAKES YOUR CONTENT FLY software house HET

New project template: **Blazor Web App**



Blazor Web App

A project template for creating a Blazor web app that supports both server-side rendering and client interactivity. This template can be used for web apps with rich dynamic user interfaces (UIs).



Additional information

Blazor Web App

Framework: .NET 8.0 (Long Term Support)

Authentication type: None

☑ Configure for HTTPS

Interactive render mode: None

Interactivity location: Global

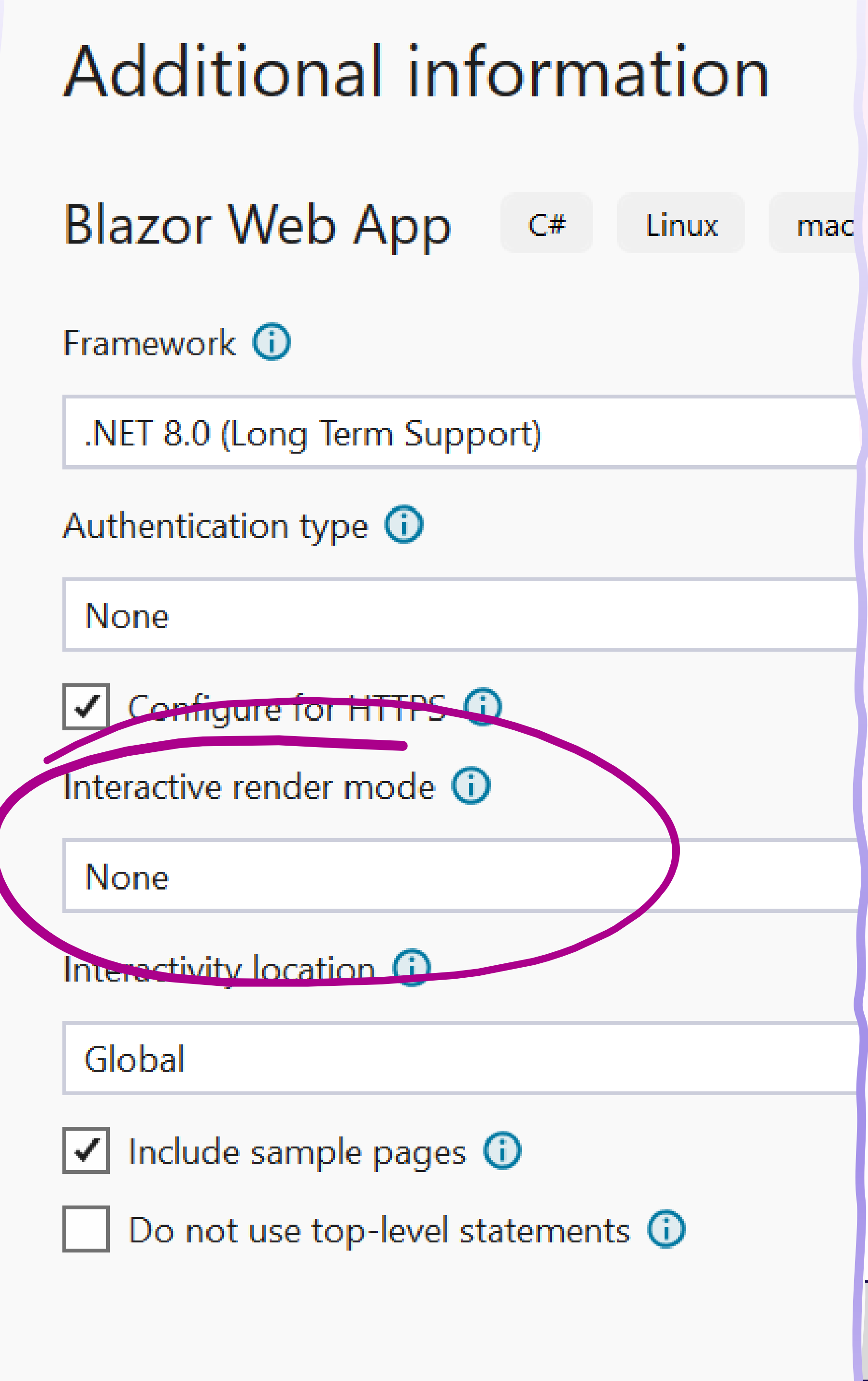
☑ Include sample pages

□ Do not use top-level statements

Server-side Rendering (SSR)

Blazor is operating like MVC or Razor Pages.

- 🚀 SEO friendly
- 🚀 Same technology for both client and server



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Blazor Web App

Framework

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Authentication type

None

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Interactivity location

Global

☑ Include sample pages

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Server-side Rendering (SSR)

Blazor is operating like MVC or Razor Pages.

🚀 SEO friendl

🚀 Same techn rver

Sicuri che "*Same technology for both client and server*" sia una cosa (sempre) positiva?

Streaming Rendering

The component initially renders placeholder content ("Loading…") without waiting for the asynchronous delay to complete.

↓

Asynchronous operation are executed

↓

The updated content is streamed to the response and patched into the DOM

Streaming Rendering

🚀 Use a single request/response for the initial and updated content.

🚀 Improve the user experience for components that perform long-running asynchronous tasks to fully render.

⚠️ Streaming rendering must be explicitly enabled because streamed updates may cause content on the page to shift.

Streaming Rendering

🚀 Use a single request/response for the initial and updated content.

🚀 Improve the user experience for co
long-running asynchronous tasks to fu

⚠️ Streaming rendering must be expl
streamed updates may cause content

Soluzione ottima come UX, ma come la mettiamo a riguardo del SEO?!

Enhanced navigation

Blazor intercepts the request navigation and performs a fetch request instead, rather than a full-page load.
Blazor patches the response content into the page's DOM.

🚀 SPA like experience

Enhanced form handling

Blazor intercepts the form submit and performs a fetch request instead, without fully reloading the page.

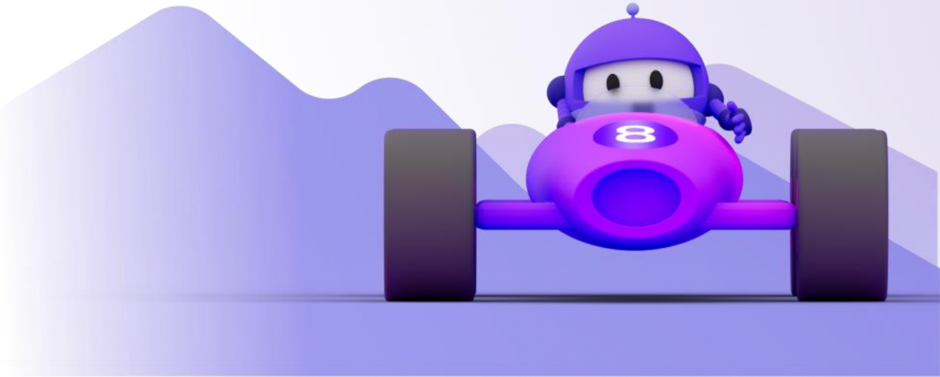
To enable enhanced form handling, add the Enhance parameter to EditForm forms or the data-enhance attribute to HTML forms (<form>)

🚀 SPA like experience

DEMO

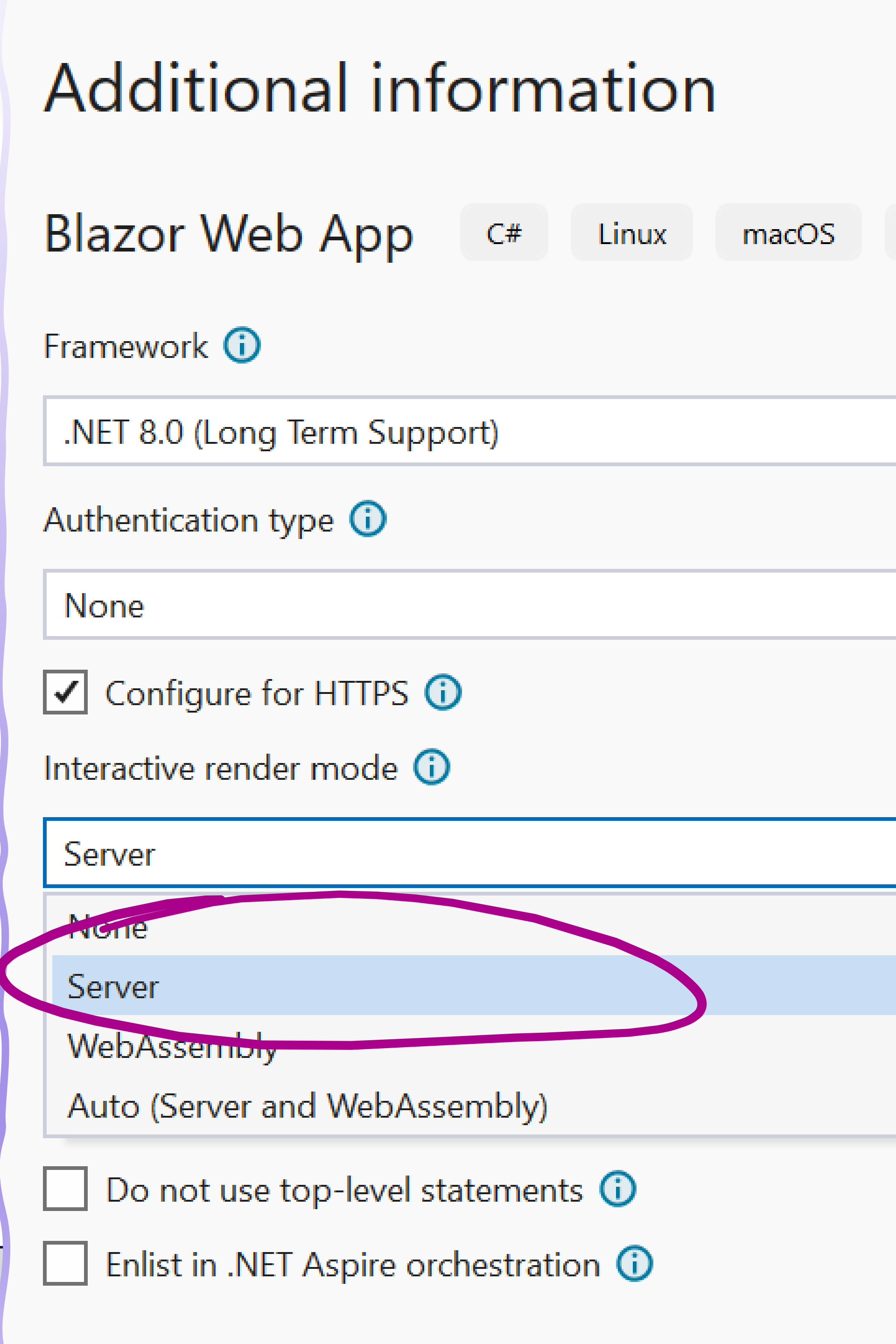
- Server-side Rendering (SSR)
- Streaming Rendering

Interactive render modes



Interactive render modes

- InteractiveServer



Additional information

Blazor Web App

Framework: .NET 8.0 (Long Term Support)

Authentication type: None

☑ Configure for HTTPS

Interactive render mode: Server

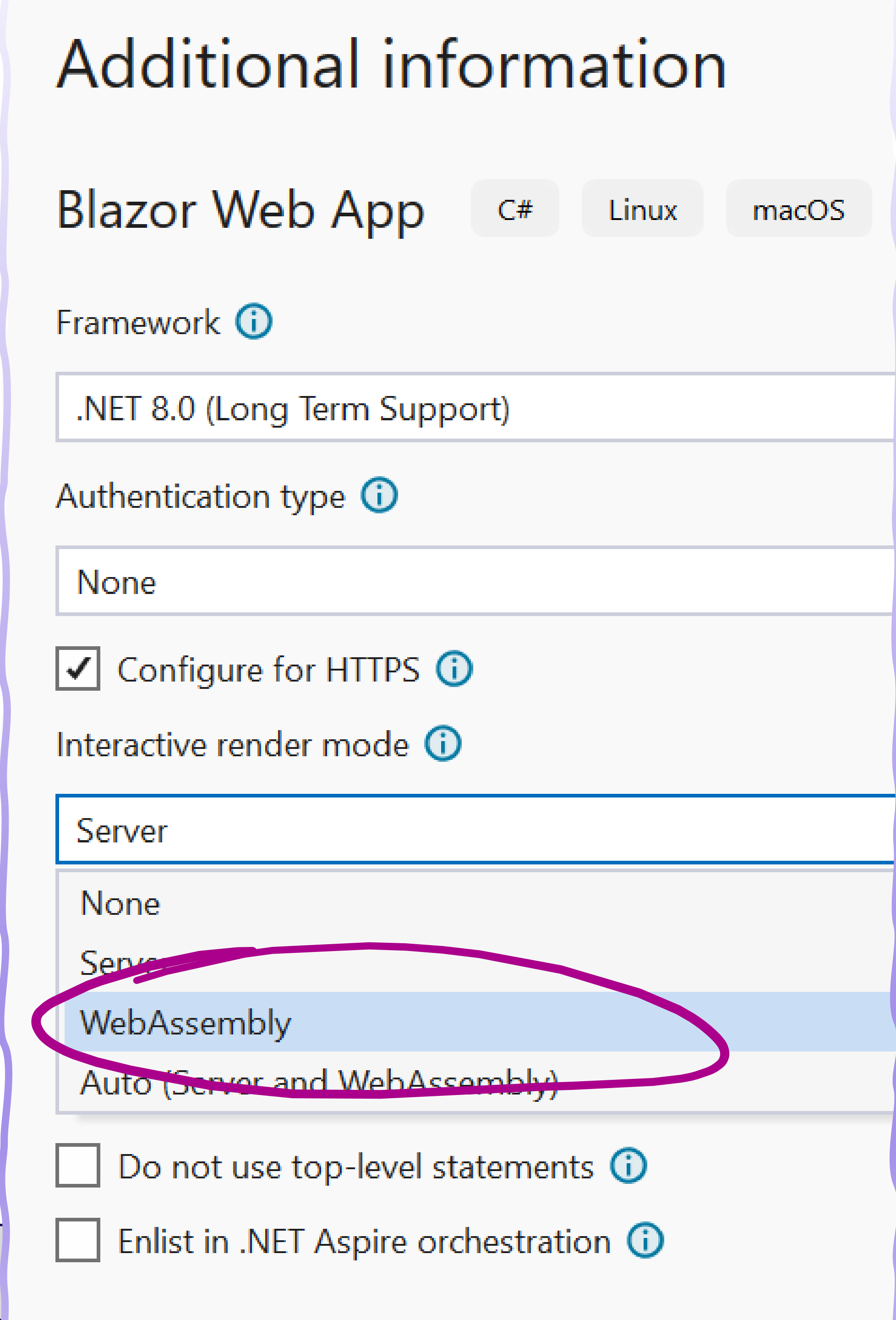
- None
- [✓ Server]
- WebAssembly
- Auto (Server and WebAssembly)

□ Do not use top-level statements

□ Enlist in .NET Aspire orchestration

Interactive render modes

- InteractiveServer
- InteractiveWebAssembly



Additional information

Blazor Web App C# Linux macOS

Framework ⓘ

.NET 8.0 (Long Term Support)

Authentication type ⓘ

None

☑ Configure for HTTPS ⓘ

Interactive render mode ⓘ

Server

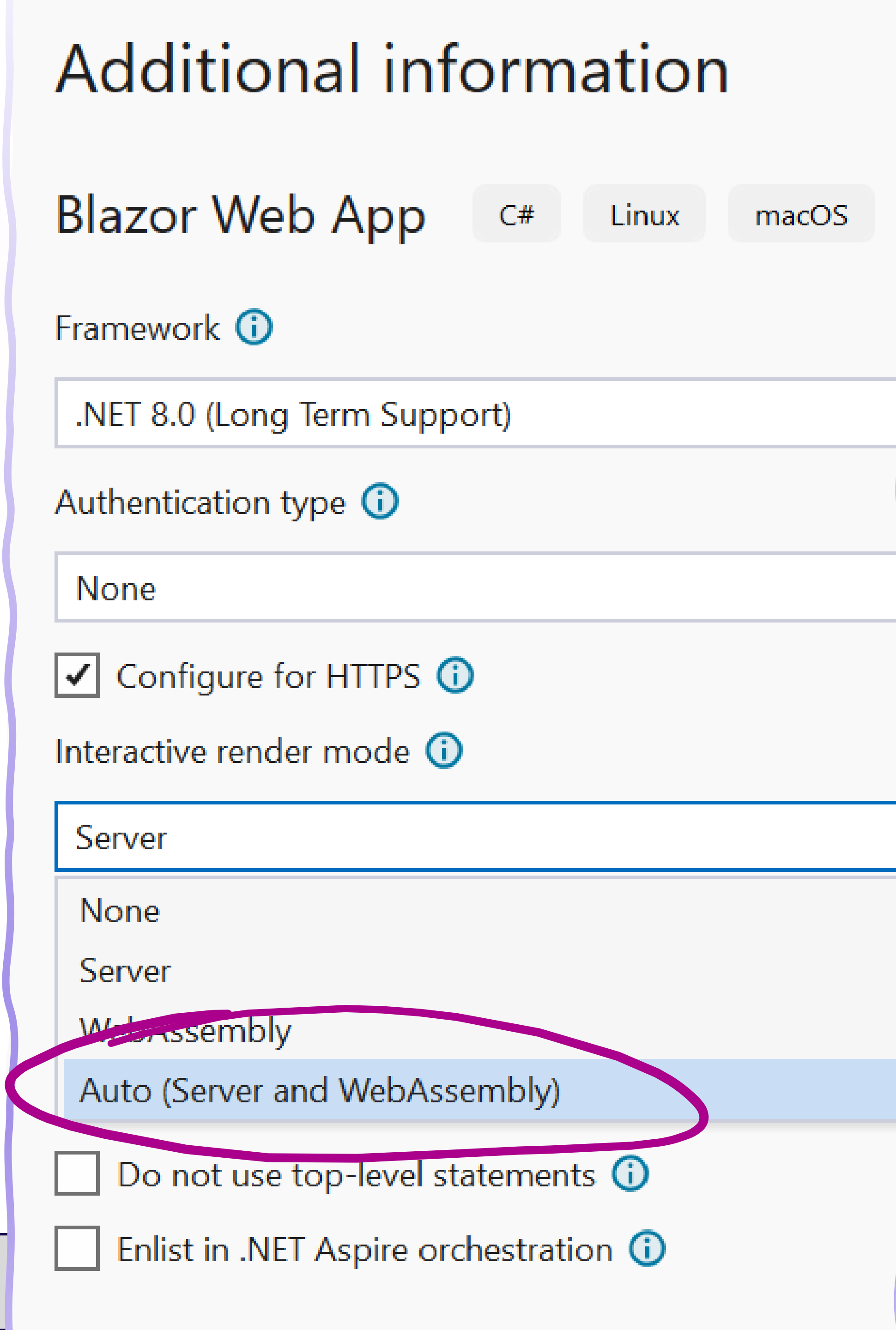
- None
- Server
- WebAssembly
- Auto (Server and WebAssembly)

□ Do not use top-level statements ⓘ

□ Enlist in .NET Aspire orchestration ⓘ

Interactive render modes

- InteractiveServer
- InteractiveWebAssembly
- InteractiveAuto



Additional information

Blazor Web App | C# | Linux | macOS

Framework ⓘ

.NET 8.0 (Long Term Support)

Authentication type ⓘ

None

☑ Configure for HTTPS ⓘ

Interactive render mode ⓘ

Server

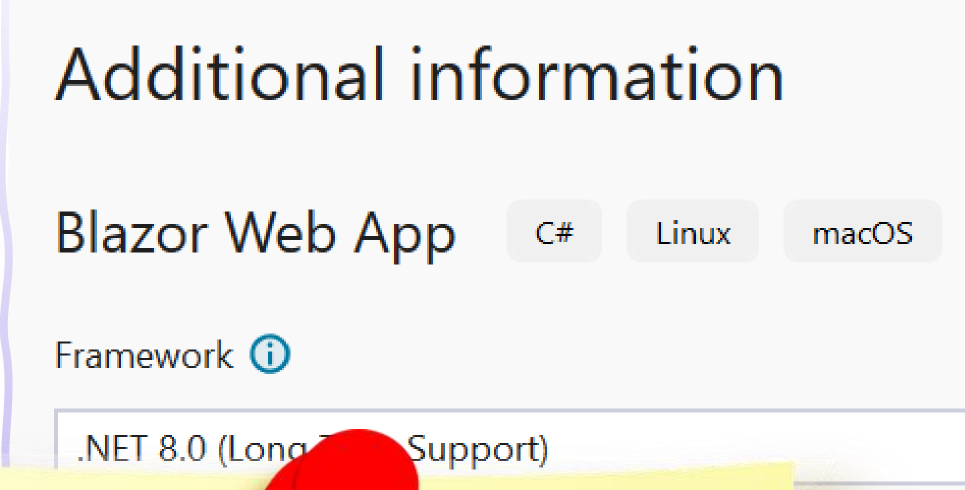
- None
- Server
- WebAssembly
- [✓ Auto (Server and WebAssembly)]

□ Do not use top-level statements ⓘ

□ Enlist in .NET Aspire orchestration ⓘ

Interactive render modes

- InteractiveServer
- InteractiveWebAssembly
- InteractiveAuto



Additional information

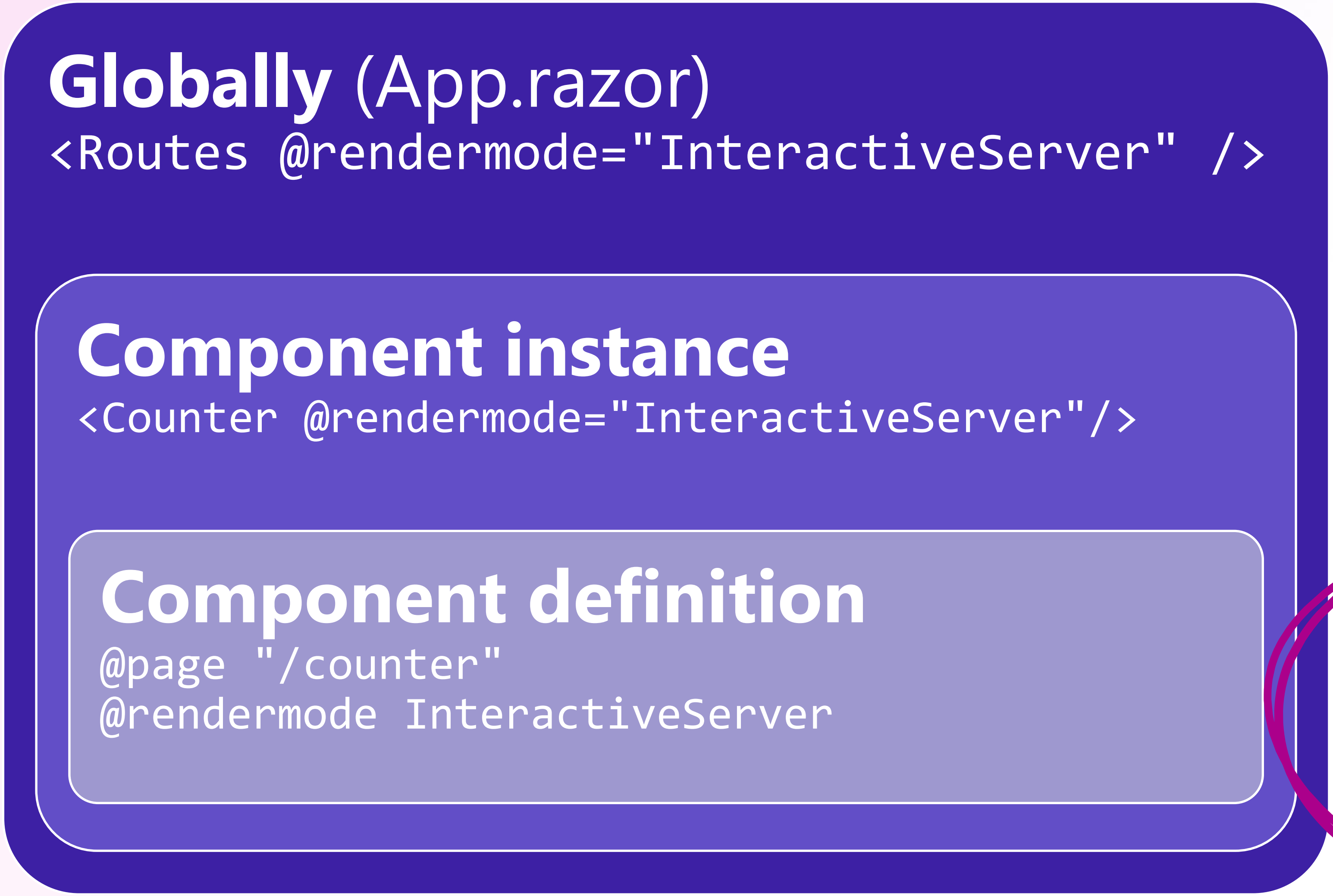
Blazor Web App

Framework

.NET 8.0 (Long [illegible] Support)

L'utente non attende il tempo di download di WebAssembly per poter interagire con la pagina. Ma lo sviluppatore deve supportare entrambe le modalità.

Interactivity location



Globally (App.razor)

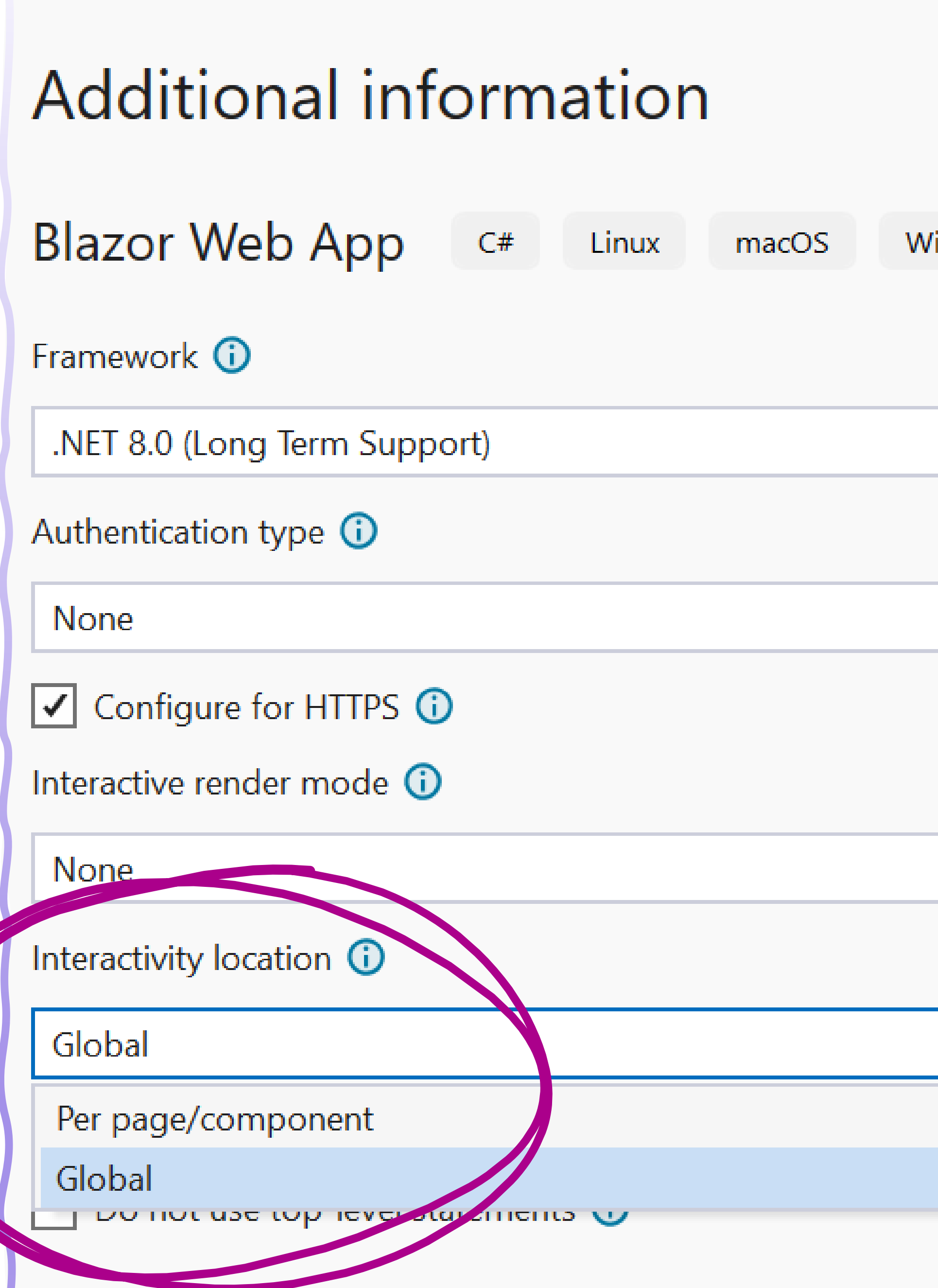
```
<Routes @rendermode="InteractiveServer" />
```

Component instance

```
<Counter @rendermode="InteractiveServer"/>
```

Component definition

```
@page "/counter"
@rendermode InteractiveServer
```



Additional information

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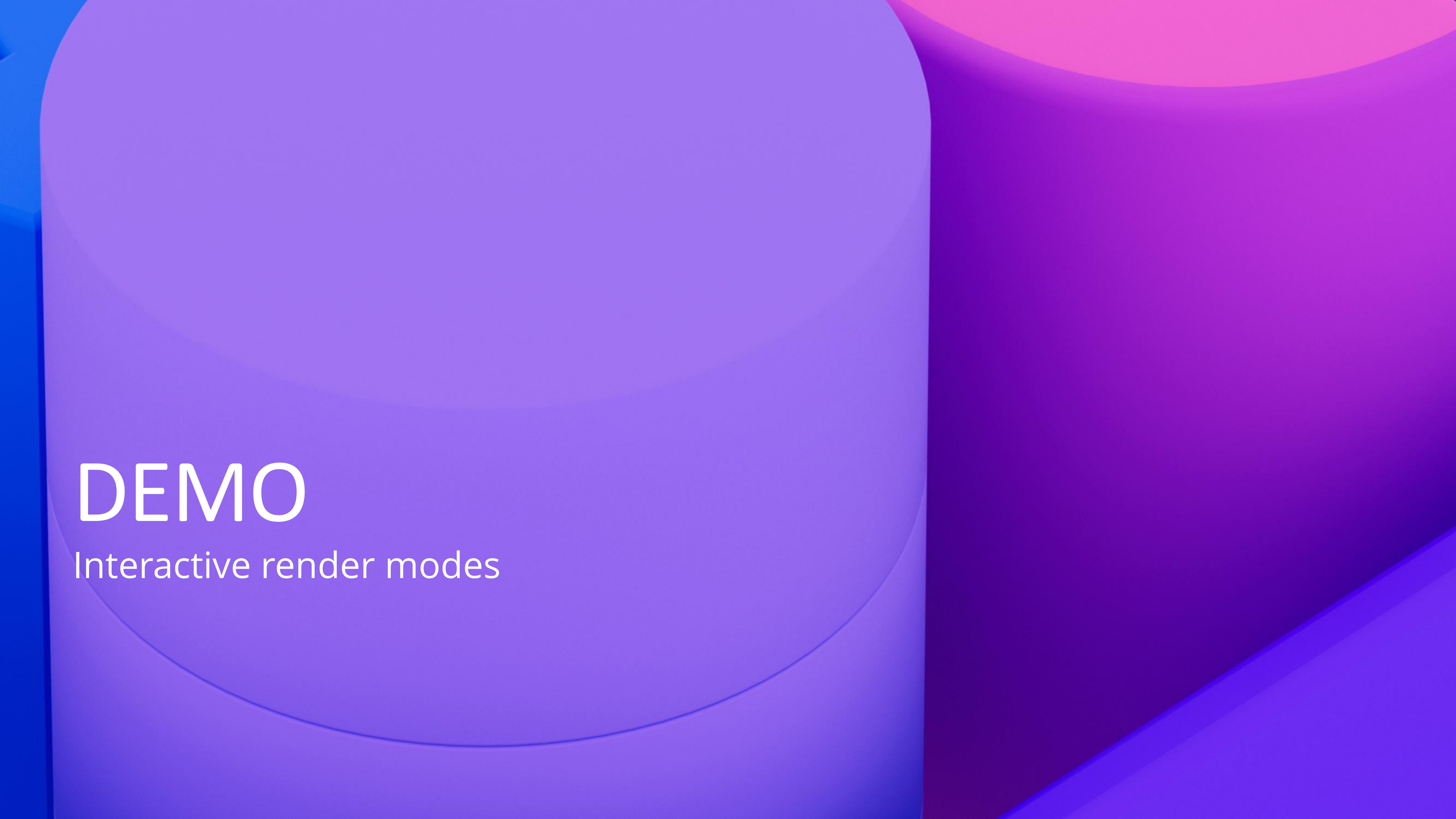
Interactivity location: Global

☐ Do not use top-level statements

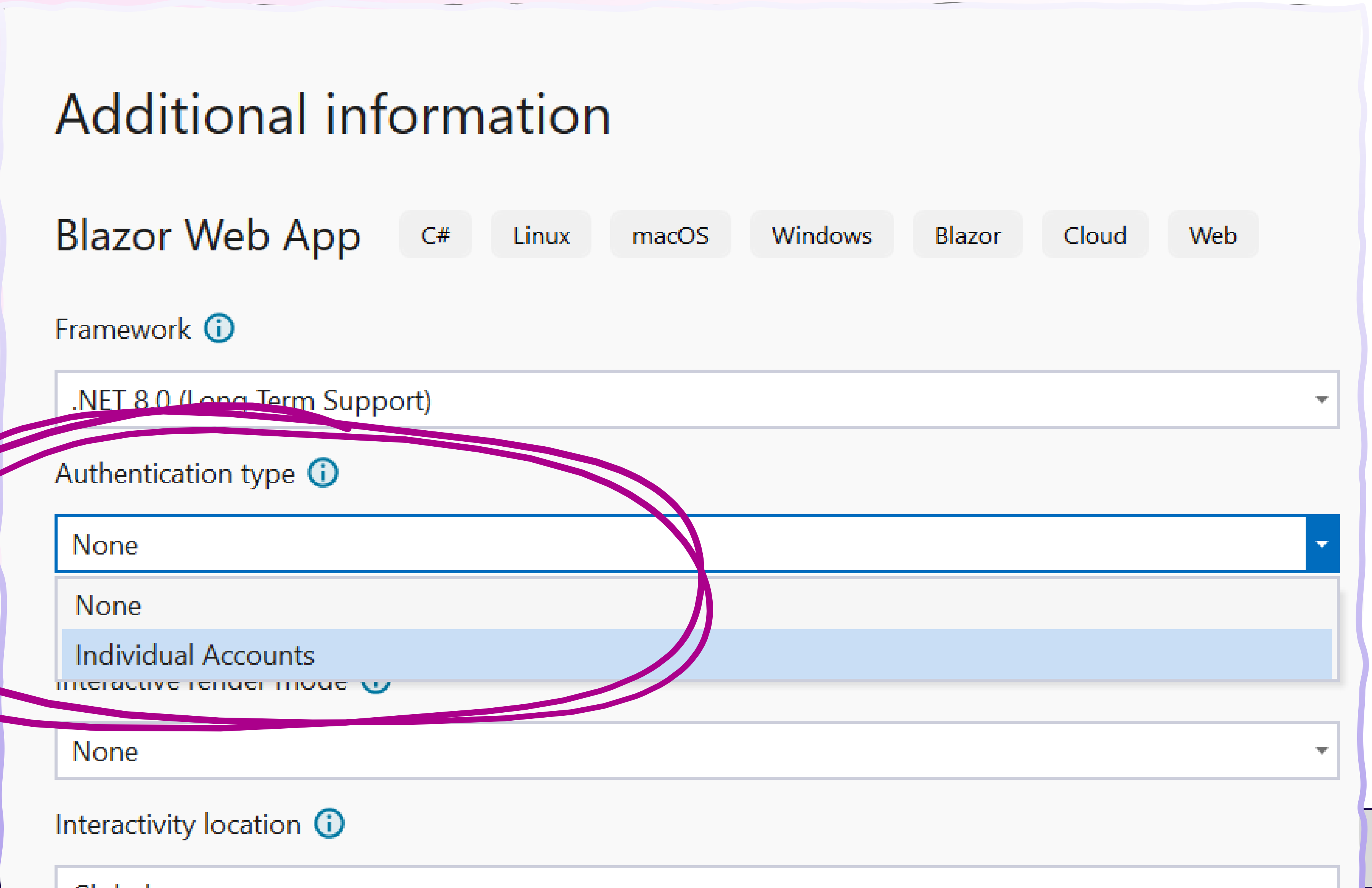


DEMO

Interactive render modes

Blazor Identity UI

Blazor Identity UI



Additional information

Blazor Web App

Framework: .NET 8.0 (Long Term Support)

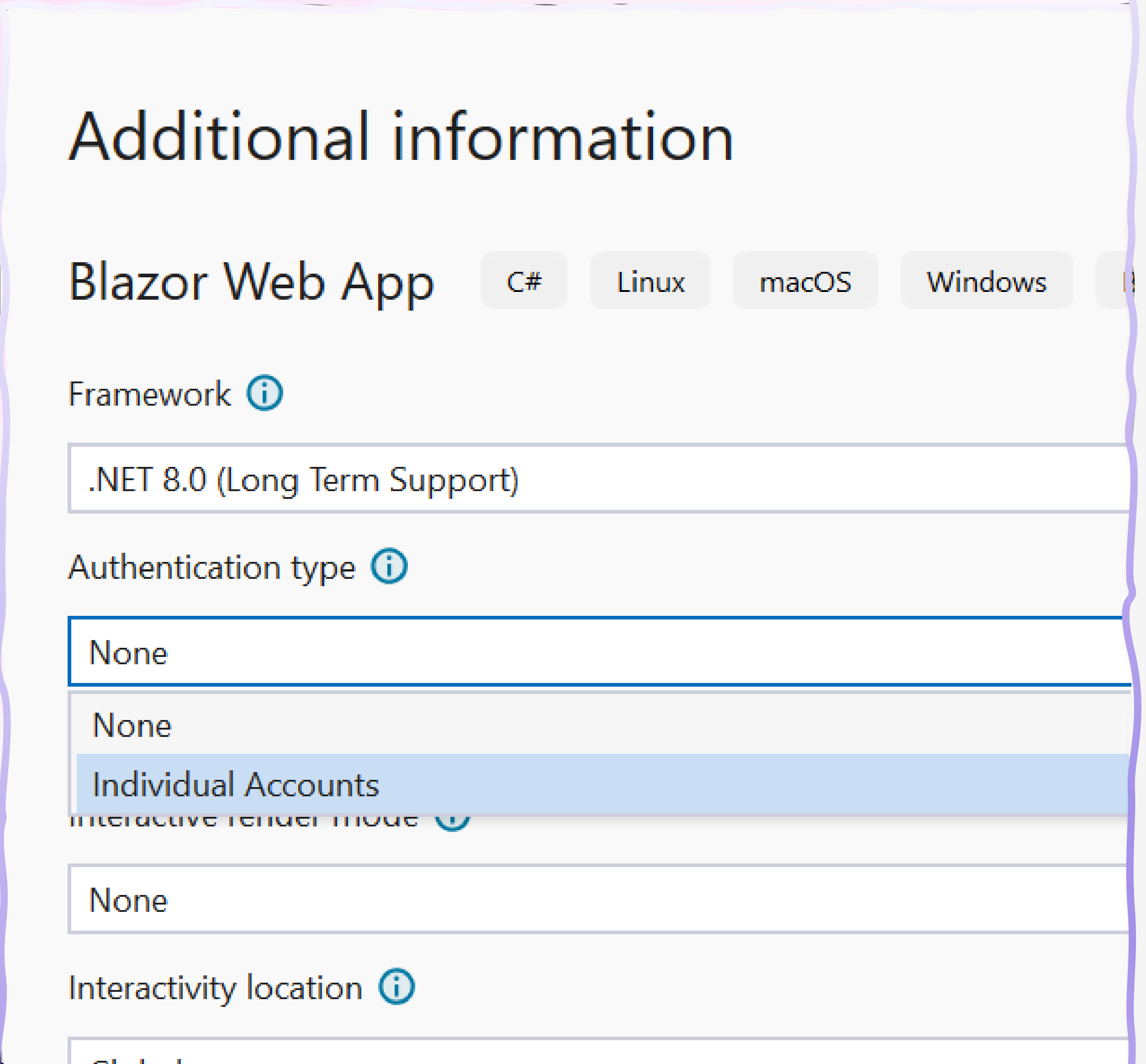
Authentication type: None

- None
- Individual Accounts

Interactive render mode: None

Interactivity location: Global

Blazor Identity UI



Additional information

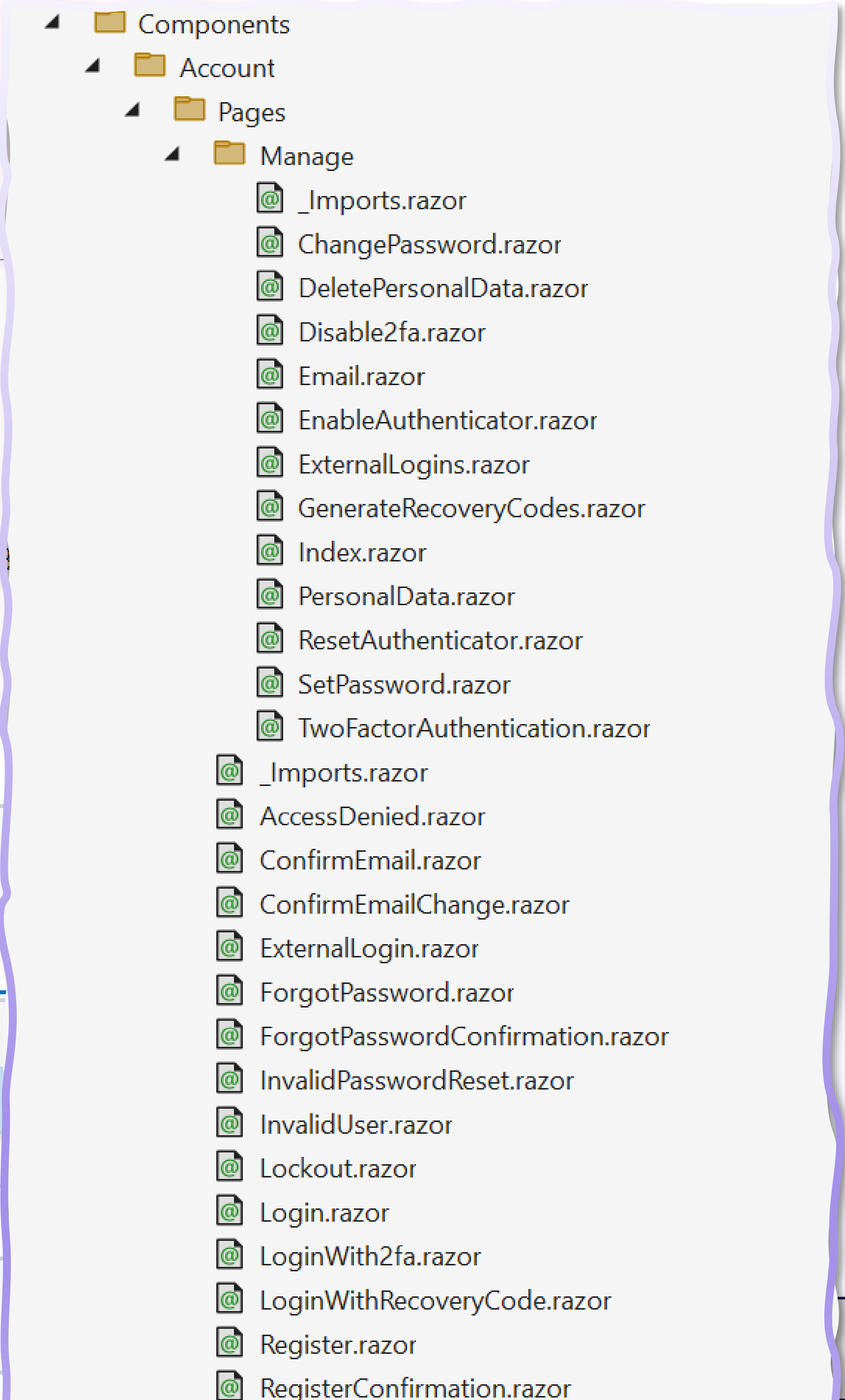
Blazor Web App

Framework: .NET 8.0 (Long Term Support)

Authentication type: None

Interactive render mode: None

Interactivity location: Global

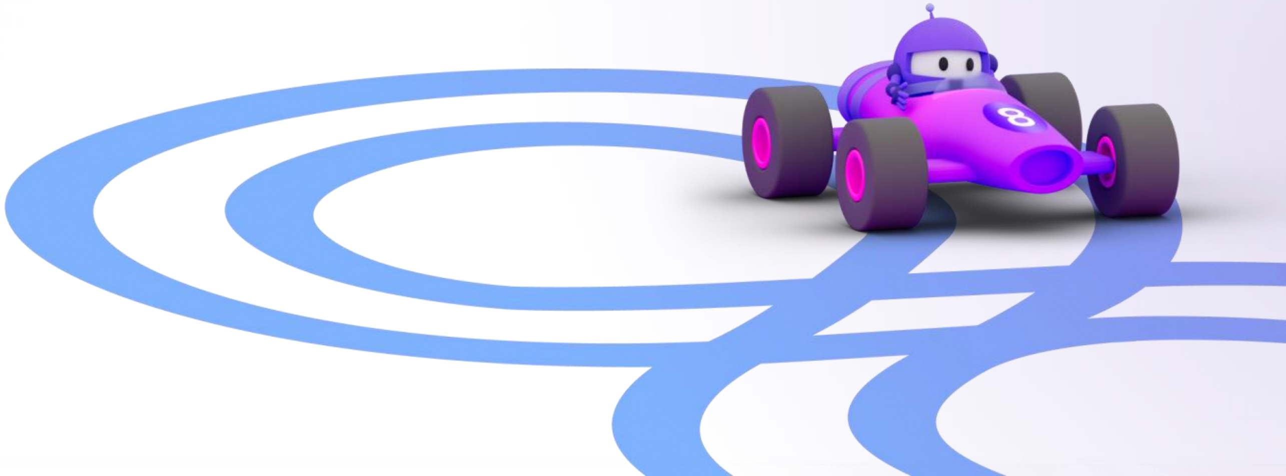


```
◢ Components
    ◢ Account
        ◢ Pages
            ◢ Manage
                _Imports.razor
                ChangePassword.razor
                DeletePersonalData.razor
                Disable2fa.razor
                Email.razor
                EnableAuthenticator.razor
                ExternalLogins.razor
                GenerateRecoveryCodes.razor
                Index.razor
                PersonalData.razor
                ResetAuthenticator.razor
                SetPassword.razor
                TwoFactorAuthentication.razor
            _Imports.razor
            AccessDenied.razor
            ConfirmEmail.razor
            ConfirmEmailChange.razor
            ExternalLogin.razor
            ForgotPassword.razor
            ForgotPasswordConfirmation.razor
            InvalidPasswordReset.razor
            InvalidUser.razor
            Lockout.razor
            Login.razor
            LoginWith2fa.razor
            LoginWithRecoveryCode.razor
            Register.razor
            RegisterConfirmation.razor
```

DEMO

- Blazor Identity UI

Smart Components



Smart Components

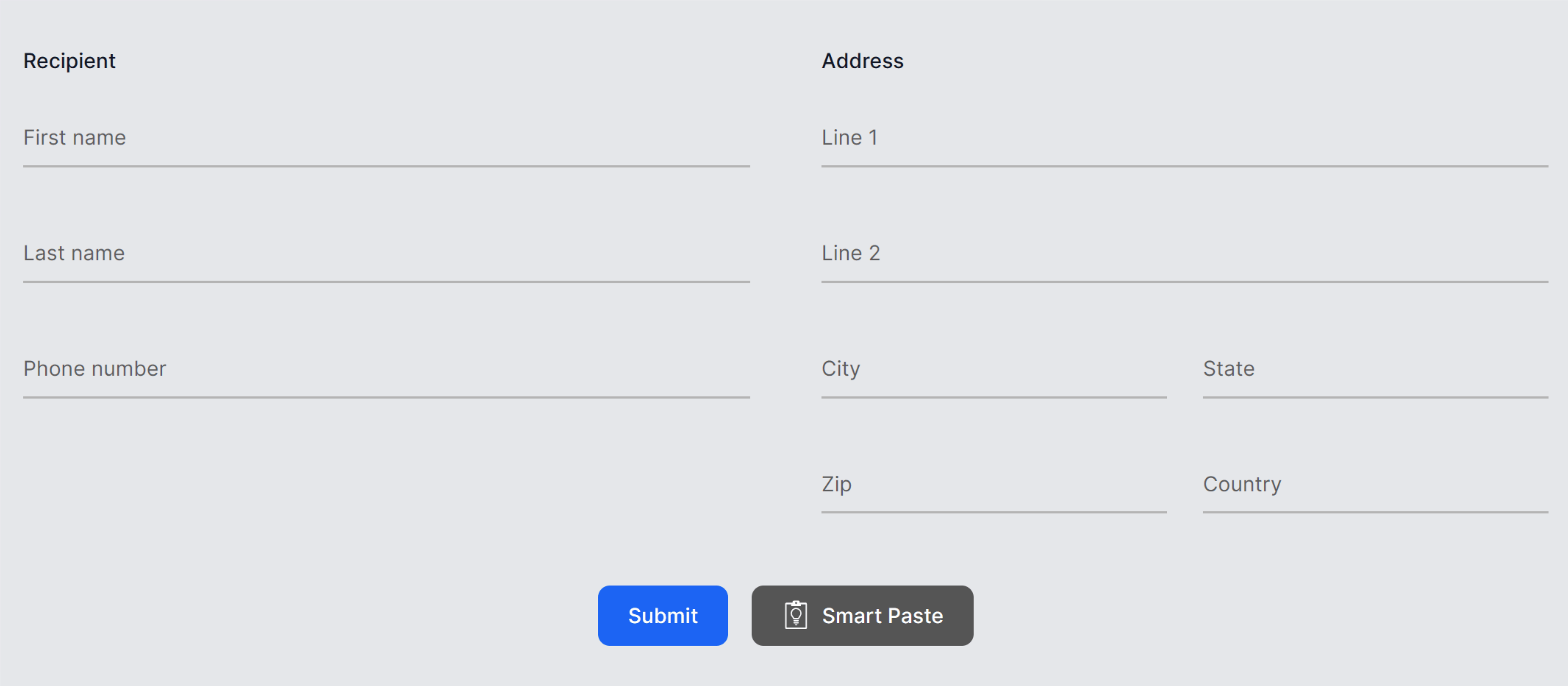
- "Smart Components lets you **add genuinely useful AI-powered features to your .NET apps quickly, easily, and without risking wasted effort.**

  You don't have to spend weeks of dev time redesigning your UX or researching machine learning and prompt engineering. Smart Components are prebuilt end-to-end AI features that you can drop into your existing UIs to upgrade them, truly making your app more productive for your end users."

DEMO

- Smart Components

Smart Paste



Recipient

First name

Last name

Phone number

Address

Line 1

Line 2

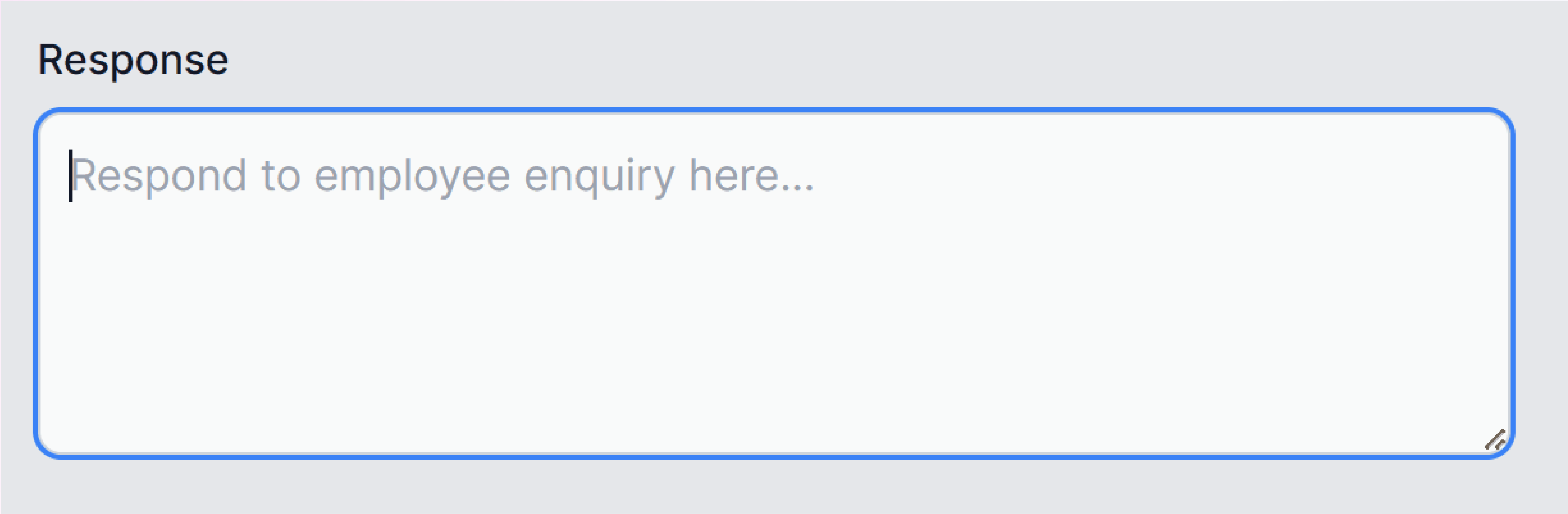
City

State

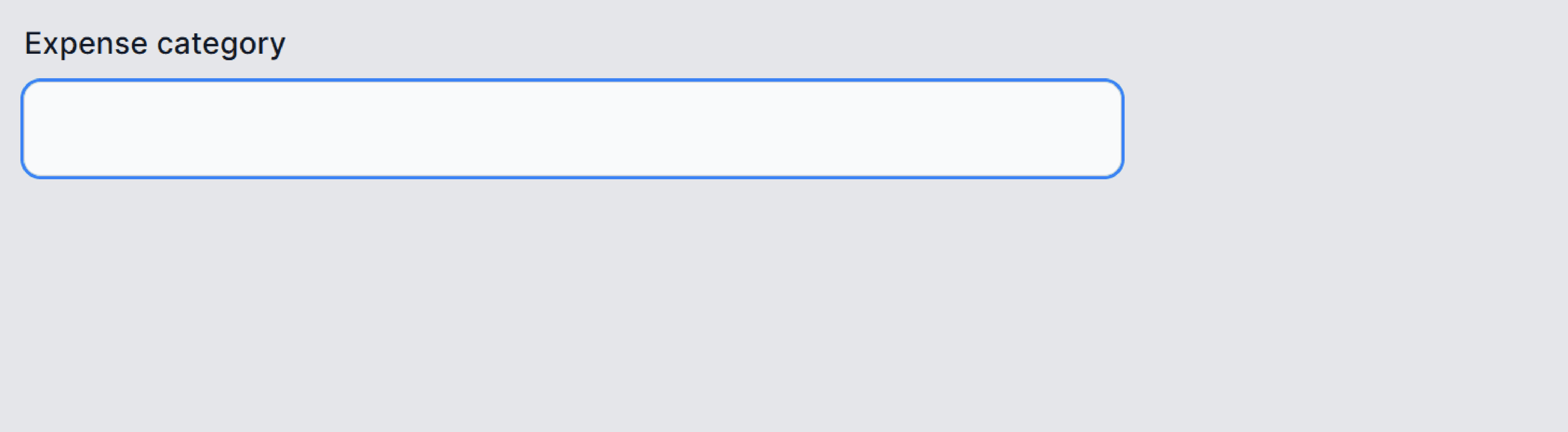
Zip

Country

Smart TextArea



Smart ComboBox



Expense category

Local Embeddings

Embeddings are used for semantic similarity search. Natural-language strings are converted into numerical vectors called *embeddings*. The more conceptually related are two strings, the closer their vectors.

While you can use an external AI service to compute embeddings, in many cases you can simply compute them locally on your server (no need for a GPU - the CPU will work fine)

Backend AI services

- Azure Open AI
- Open AI
- Ollama or another self-hosted endpoint (compatible with the OpenAI API schema)

Code and slide

Repository **Umarell-BlazorWebApp**

https://github.com/andreadottor/Umarell-BlazorWebApp

Grazie!

@andreadottor

```
{
    name:         Andrea Dottor
    email:        andrea@dottor.net
    x:            @dottor
    linkedin:     @andreadottor
}
```

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Thanks!