

# Fluent UI Blazor Library

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**@Microsoft**

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Principal Software Engineer  
**@Microsoft**

## Principal FluentUI.Blazor Maintainers

# Agenda

01

**What is  
FluentUI Blazor?**

3 min

02

**Rebuilding  
the Demo**

12 min

03

**Next-Gen Components &  
Architectural Innovations**

12 min

<https://aka.ms/blazor/fluentui>

# Support

Microsoft.Fast.Components.FluentUI

**Release 3.0 (NET 6+)**

Microsoft.FluentUI.AspNetCore.Components

**Release 4.0 (NET 8+)**

**Release 5.0 (NET 9+)**

Nov 2022  
.NET 7

Nov 2023  
.NET 8

Nov 2024  
.NET 9

Nov 2025  
.NET 10

NET 9

NET 8

NET 7

NET 6

# FluentUI Blazor

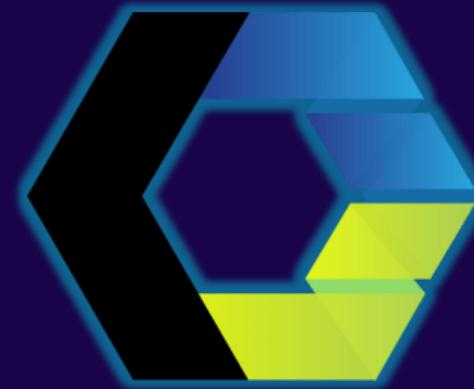


# So many pieces

- Web Components
- FAST
- Fluent Design System
- Fluent UI Web components
- Blazor
- .NET Aspire



Fluent 2



# Web Components

- <yes-this-is-valid></yes-this-is-valid>
- Update things when attributes change
- Has its own (private) DOM
- Can be styled independently for general app/site styling
- Supports theming/skinning

# FAST

- Collection of technologies built on modern web standards to simplify and accelerate building Web Components
- Not a typical front-end framework like React, Angular or Vue; Not focused on being a “all-in-one SPA framework”
- Components built on/with FAST can be used in virtually every front-end framework

# Fluent Design System (or Fluent in short)

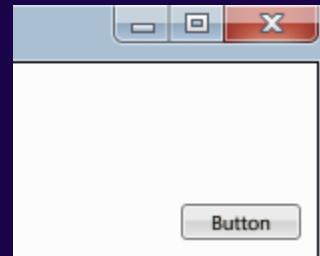
- Look & feel of Windows 11, Microsoft 365 and Azure
- 5 key components
  - Light
  - Depth
  - Motion
  - Material
  - Scale
- Newest version is Fluent 2

# Microsoft Fluent

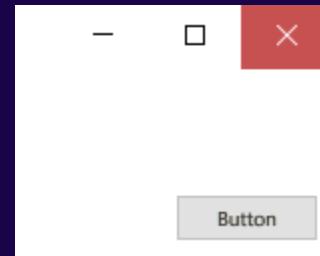
Fluent is a design framework and implemented as a set of **UI components**.

To create web applications with a  
**consistent** and **polished** UI

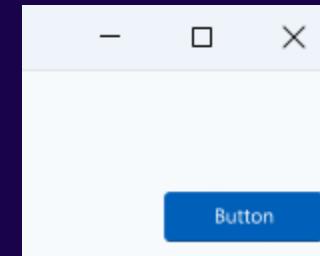
Aligned with Microsoft's  
**design guidelines**



Aero



Metro



Fluent

Fluent UI provides a collection of **reusable**, **customizable**, and **responsive** UI components

# Fluent UI Web Components

FAST

+

Web Components

+

Fluent Design System

=

Fluent UI Web Components

# Fluent UI Blazor Library

Fluent UI ~~Web~~ Components



Web ~~Blazor~~ Components



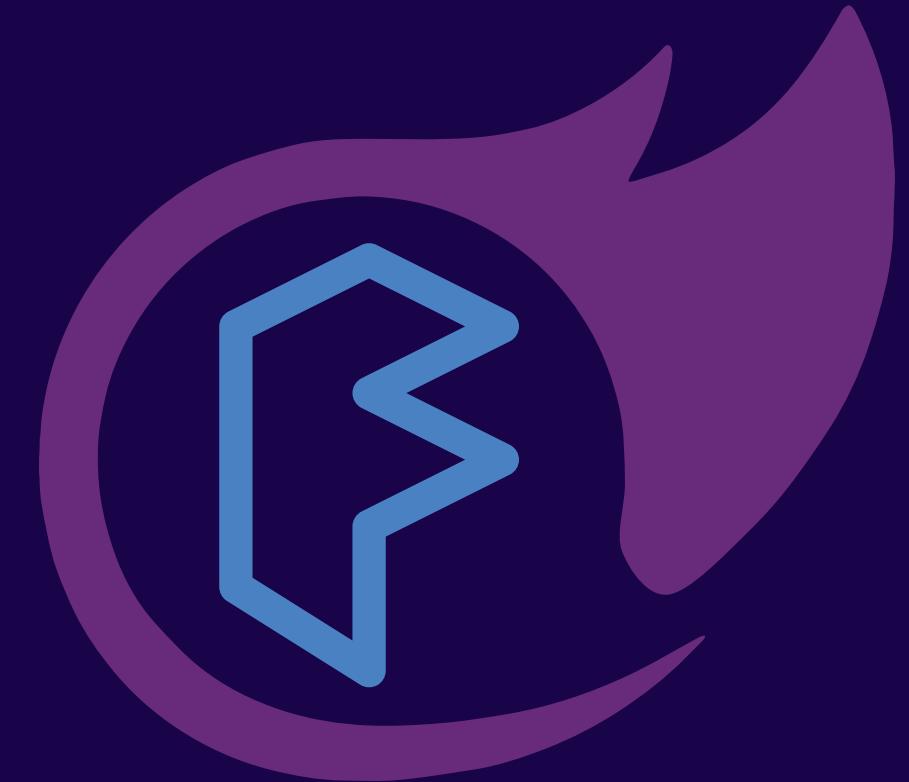
Fluent Design System

Fluent UI Web Components

*Currently, the Fluent UI Blazor library is a pure open-source project. It is ~~not~~ an official part of ASP.NET Core, which means it's **not** officially supported and isn't committed to ship updates as part of any official .NET updates. It is built and maintained by Microsoft employees (and other contributors) and offers support, like most other open-source projects, on a best effort base through the GitHub repository **only** (so not through support.microsoft.com).*

Fluent UI Web Components

# Demo

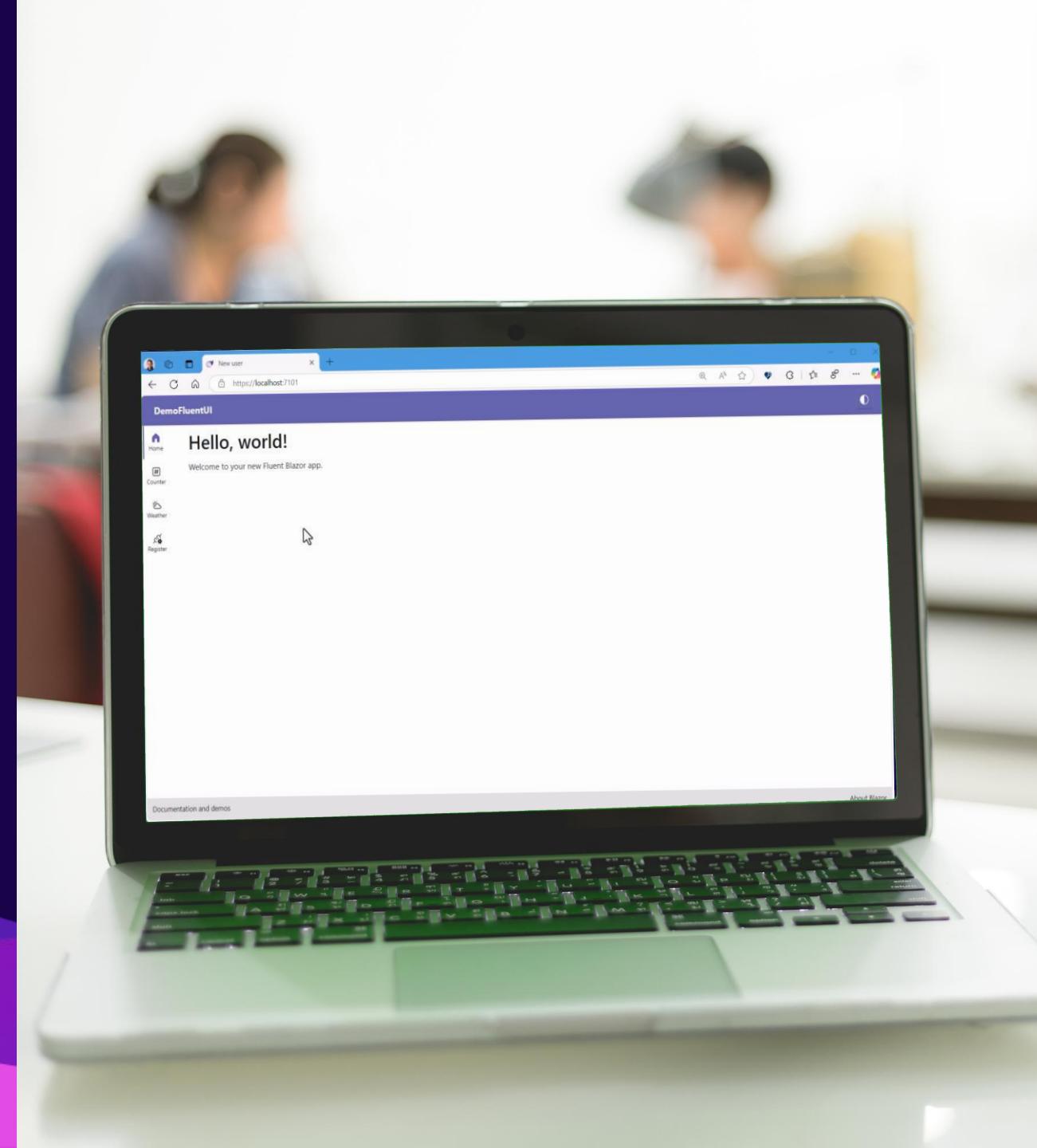


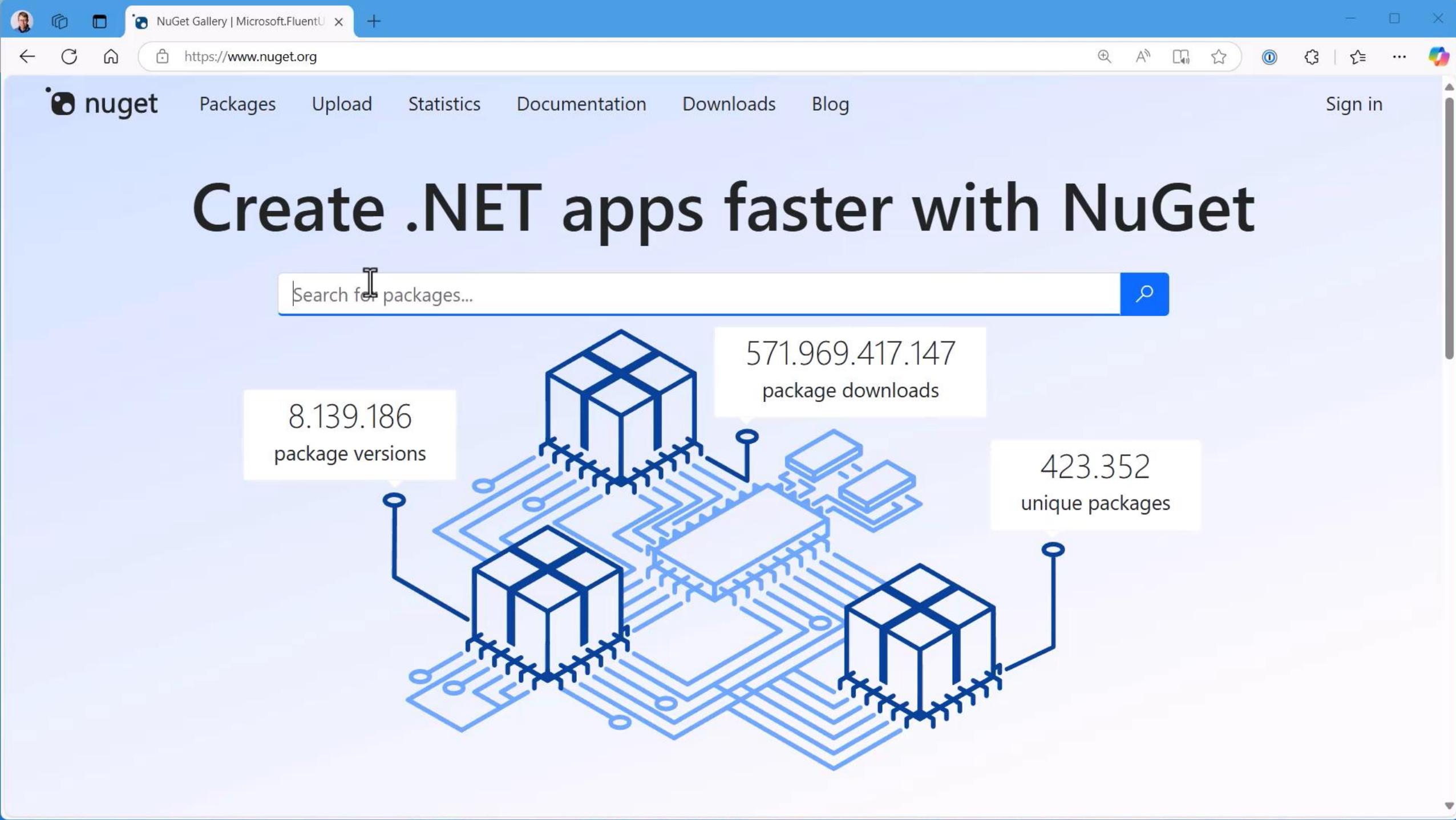
# Demo

Do you want to create the project from scratch?

👉 See DotNetConf 2023

<https://youtu.be/a0xOqNemRoY>





Solution Explorer | Git Changes  
Bookmarks Output Error List

Any CPU | https | Debug | PREVIEW

DemoFluentUI

- Connected Services
- Dependencies
- Properties
- wwwroot
- Components
- appsettings.json
- Program.cs

## DemoFluentUI: Overview

ASP.NET Core

Learn about the .NET platform, create your first application and extend it to the cloud.

Overview Connected Services Publish

 Build Your App

 Connect To The Cloud

 Learn Your IDE

[ASP.NET Core documentation](#)

[.NET application architecture](#)

[Publish your app to Azure](#)

[Get started with ASP.NET on Azure](#)

[See our C# productivity guide](#)

[Write code faster](#)



G GitHub Copilot

PREVIEW

Solution Explorer

Any CPU | https | Debug | Any CPU

Search Solution Explorer (Ctrl+\$)

Solution 'DemoFluentUI' (1 of 1 project)

- dotnetconf-2024-fluentui-blazor
- DemoFluentUI
  - Connected Services
  - Dependencies
  - Properties
  - wwwroot
  - Components
  - appsettings.json
  - Program.cs

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Overview

Connected Services

Publish

{ } Build Your App

ASP.NET Core documentation

.NET application architecture

Cloud icon with up and down arrows Connect To The Cloud

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Write code faster

Solution Explorer

Git Changes

Bookmarks Output Error List

Ready

1 0/0 0 0 steps/03-register dotnetconf-2024-fluentui-blazor



Solution Explorer | Any CPU | https:// | dotnetconf-2024-fluentui-blazor | Demo | Solution Explorer | DemoFluentUI: Overview | Diagnostic Tools

Solution Explorer (Ctrl+\$) | Solution 'DemoFluentUI' (1 of 1 project) | dotnetconf-2024-fluentui-blazor | DemoFluentUI | Connected Services | Dependencies | Properties | wwwroot | Components | Layout | Pages | Counter.razor | Error.razor | Home.razor | Register.razor | Weather.razor | \_Imports.razor | App.razor | Routes.razor | appsettings.json | Program.cs

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Solution Explorer (Ctrl+\$) | Solution 'DemoFluentUI' (1 of 1 project) | dotnetconf-2024-fluentui-blazor | DemoFluentUI | Connected Services | Dependencies | Properties | wwwroot | Components | Layout | Pages | AccountCreatedDialog.razor | Counter.razor | Error.razor | Home.razor | Register.razor | Weather.razor | \_Imports.razor | App.razor | Routes.razor | appsettings.json | Program.cs

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## DemoFluentUI: Overview

Overview | Connected Services | Publish

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ASP.NET Core documentation | .NET application architecture | Publish your app to Azure | Get started with ASP.NET on Azure | See our C# productivity guide | Write code faster

The screenshot shows the Visual Studio IDE interface with the following details:

- Top Bar:** File, Edit, View, Git, Project, Build, Debug, Table Designer, Query Designer, Test, Analyze, Tools, Extensions, Window, Help, Search, DemoFluentUI.
- Solution Explorer:** Shows the 'Solution 'DemoFluentUI' (1 of 1 project)' with items: dotnetconf-2024-fluentui-blazor, DemoFluentUI (selected), Connected Services, Dependencies, Properties, wwwroot, Components (Layout, Pages), Pages (AccountCreatedDialog.razor, Counter.razor, Error.razor, Home.razor, Register.razor, Weather.razor, \_Imports.razor, App.razor, Routes.razor), appsettings.json, Program.cs.
- Current File:** Register.razor (highlighted in yellow) under the DemoFluentUI project.
- Code Editor:** Displays the following C# code for Register.razor:

```
1 @page "/register"
2 @rendermode RenderMode.InteractiveServer
3 @inject IDialogService DialogService
4 @inject IToastService ToastService
5
6 <PageTitle>New user</PageTitle>
7
8 <FluentLabel Typo="Typography.PageTitle">Register</FluentLabel>
9
10 <FluentLabel Style="margin-bottom: 24px;">
11     Let's get you all set up so you can verify your personal account and begin
12     setting up your profile.
13 </FluentLabel>
14
15 <EditForm Model="@Data" OnValidSubmit="ValidHandlerAsync">
16     <FluentTextField Label="First name:">
17         Placeholder="Enter your first name"
18         Required
19         @bind-Value="@Data.FirstName" />
20     <FluentTextField Label="Last name:">
21         Placeholder="Enter your last name"
22         @bind-Value="@Data.LastName" />
23     <FluentDatePicker Label="Birth date:">
24         @bind-Value="@Data.BirthDate" />
25     <FluentTextField Label="EMail:">
26         FieldType="FieldType.Email"
27         Required
28         Placeholder="Enter your email"
29         @bind-Value="@Data.Email" />
30     <br />
31     <FluentCheckbox Label="I agree to all terms, conditions, privacy policy.">
32         @bind-Value="@AcceptToCreate" />
33
34     <div style="margin: 24px 0px;" />
```

The code uses Fluent UI components like `FluentLabel`, `FluentTextField`, `FluentDatePicker`, and `FluentCheckbox`.

**Bottom Status Bar:** Solution Explorer, Git Changes, 113%, No issues found, Ln: 1, Ch: 1, SPC, CRLF.



G GitHub Copilot PREVIEW

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'DemoFluentUI' (1 of 1 project)

- dotnetconf-2024-fluentui-blazor
- DemoFluentUI
  - Connected Services
  - Dependencies
  - Properties
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DemoFluentUI: Overview

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{ } Build Your App

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Cloud icon with up and down arrows Publish your app to Azure Get started with ASP.NET on Azure

Icon of two overlapping circles Learn Your IDE See our C# productivity guide Write code faster

Solution Explorer Git Changes

Bookmarks Output Error List

Ready

PRE File Edit View Git Project Build Debug Table Designer Query Designer Test Analyze Tools Extensions Window Help | Search ▾ DemoFluentUI

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Solution Explorer DemoFluentUI: Overview Diagnostic Tools

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Solution Explorer Git Changes

Bookmarks Output Error List

Ready

0 / 0 0 steps/08-theme dotnetconf-2024-fluentui-blazor

# Components

<https://aka.ms/blazor/fluentui>

## Layout

Layout  
Grid  
Stack  
Multi Splitter

## Inputs

Checkbox  
Radio  
Switch  
Date & Time  
Label  
Text Field & Area  
Input File  
Slider  
Rating  
Search & Highlighter  
  
Combobox  
Listbox  
Select  
Autocomplete

## Components

Button  
Menu & Menu Button  
Key Code  
  
App Bar  
Toolbar  
Tabs  
Nav Menu  
Sortable List  
Data Grid  
Tree View  
  
Accordion  
Dialog Box  
Message Box  
Message Bar  
  
Skeleton  
Badge  
Persona  
Profile Menu  
Splash screen  
Wizard  
  
Progress Bar & Ring

# Next-Gen



# FluentUI Web Components v3

<https://web-components.fluentui.dev>

The screenshot shows a Microsoft Edge browser window displaying the Fluent UI Web Components v3 documentation. The title bar reads "Concepts / Introduction - Docs". The URL in the address bar is "https://web-components.fluentui.dev/?path=/docs/concepts-introduction--docs". The page content includes a sidebar with sections like "Concepts" (selected), "Components", and "Developer". The main content area features a heading "Fluent UI Web Components v3.0.0-beta.69" and a warning about breaking changes. It also discusses the design language and component standards.

**Fluent UI Web Components v3.0.0-beta.69**

**⚠ While in Beta, breaking changes may be made based on feedback from users.** This space is useful for testing new components whose APIs might change before final release.

Microsoft's [Fluent UI Web Components](#) is designed to help you build web apps using Web Components styled with the [Fluent design language](#).

Each component is designed to adhere to the following standards:

- **Customizable:** Fluent-styled components by default, but easy to integrate your own brand and theme
- **Performance:** Optimized for performance
- **Bundle size:** Refactored and slimmed down components that allow you to include the packages and dependencies you need
- **Interoperability:** Works with any modern JavaScript framework
- **Accessibility:** WCAG 2.1 compliant and tested by trusted testers
- **Design to Code:** Stay up to date with Fluent Design Language changes via Design Tokens

# Fundamentals

## Components

Razor components



Components.dll

## Components.Scripts

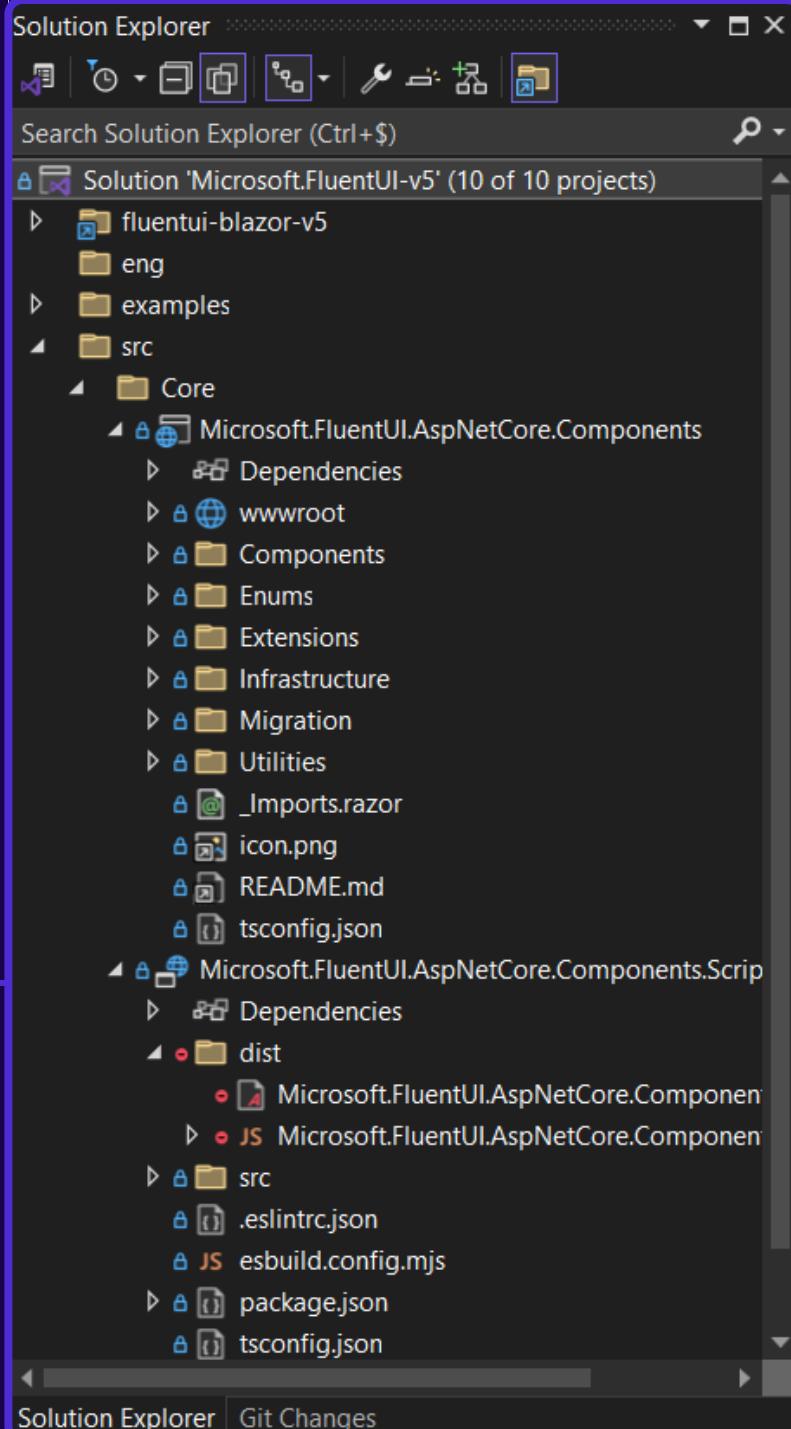
Compile TS  
Merge isolated CSS  
Compile global JS



Components.bundle.scp.css  
Components.lib.module.js

## Why?

1. Code quality
2. A single global CSS without `::deep` to simplify the customization



# Fundamentals

Components

Components.Scripts

Unit Tests

bUnit with razor files

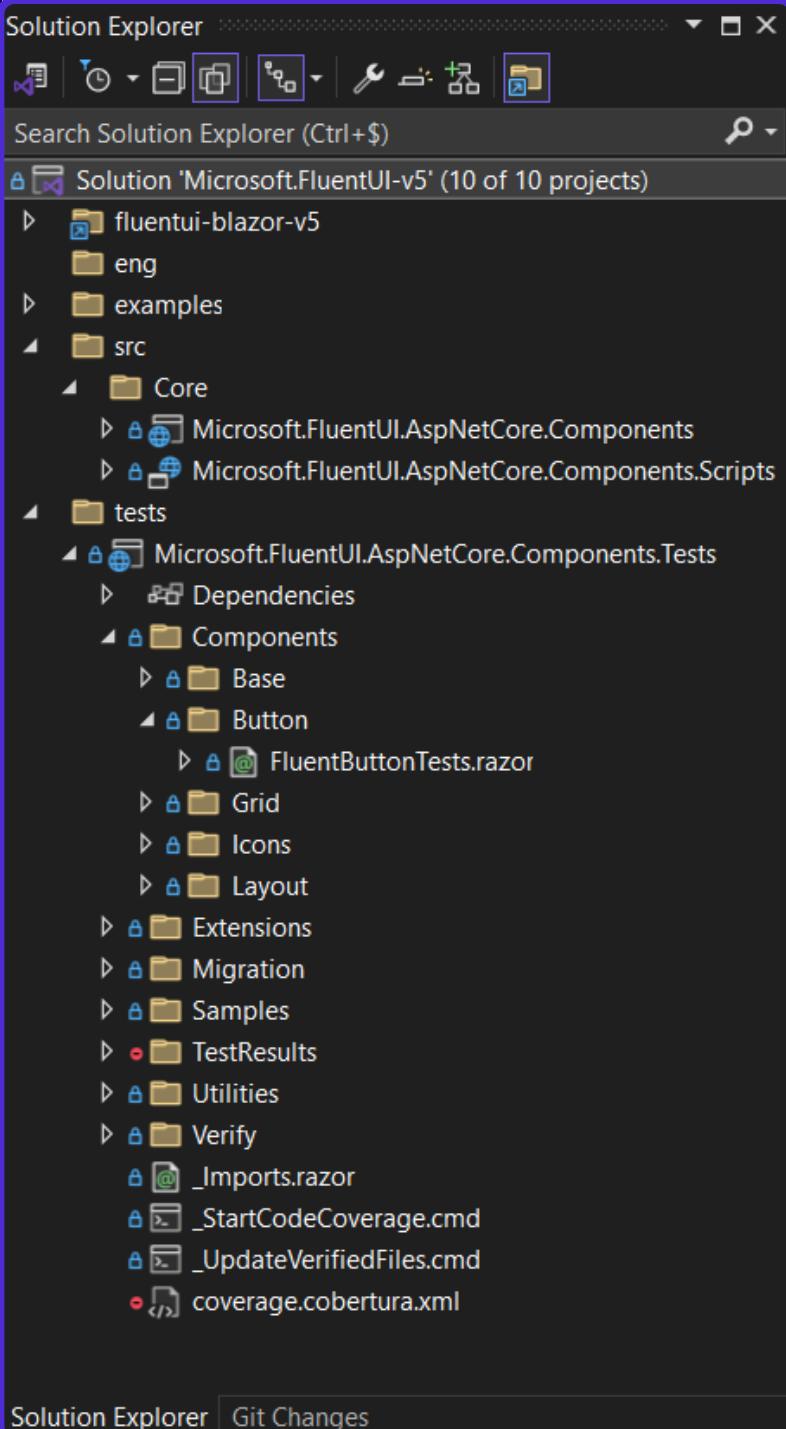
Global Unit Tests (e.g. `Id`)

HTML Comparer

Playwright (not yet)

## Why?

1. Code quality
2. Avoid regression
3. Current Code Coverage > 97%
4. Next : Playwright to validate the Design result (UI)



PRE File Edit View Git Project Build Debug Table Designer Query Designer Test Analyze Tools Extensions Window Help | Search Microsoft.FluentUI-v5

Solution Explorer | Any CPU | FluentUI.Demo | https | abc | GitHub Copilot | PREVIEW

Compare - FluentLayoutTests.FluentLayout\_HeaderFooterOutside.received.razor.html

2 changes -1 +2

FluentLayoutTests.FluentLayout\_HeaderFooterOutside.received.razor.html

```
4     style="grid-area: header; height: fit-content;" a
5         rea="header">
6             Header
7             </div>
8             <div class="fluent-layout"
9                 global-scrollbar="">
10                <div class="fluent-layout-item"
11                    style="grid-area: menu;">
12                    inside-layout="">
13                        Menu
14                        </div>
15                        <div class="fluent-layout-item"
16                            style="grid-area: content; padding-right: 10px;">
17                            area="content"
18                            inside-layout="">
19                                Content
20                                </div>
```

FluentLayoutTests.FluentLayout\_HeaderFooterOutside.verified.razor.html

```
4     style="grid-area: header; height: fit-content;" a
5         rea="header">
6             Header
7             </div>
8             <div class="fluent-layout"
9                 global-scrollbar="">
10                <div class="fluent-layout-item"
11                    style="grid-area: menu;">
12                    area="menu"
13                    inside-layout="">
14                        Menu
15                        </div>
16                        <div class="fluent-layout-item"
17                            style="grid-area: content; padding-right: 0;">
18                            area="content"
19                            inside-layout="">
20                                Content
21                                </div>
22                                <div class="fluent-layout-item"
23                                    style="grid-area: aside; margin-right: 0;">
24                                    area="aside"
25                                    inside-layout="">
26                                        Aside
27                                        </div>
28                                        </div>
29                                        <div class="fluent-layout-item"
30                                            style="grid-area: footer; height: fit-content;">
31                                            area="footer">
32                                                Footer
33                                                </div>
34                                            </div>
```

Open  
Open With...  
Open Command Line  
Code Cleanup  
Task Runner Explorer  
Configure External Tools...  
New Solution Explorer View  
Show on Code Map  
Compare Selected Ctrl+Shift+D  
Git  
Exclude From Project  
Cut Ctrl+X  
Copy Ctrl+C  
Delete Del  
Rename F2  
Copy Full Path

No issues found

Ready

# Fundamentals

Components

Components.Scripts

Unit Tests

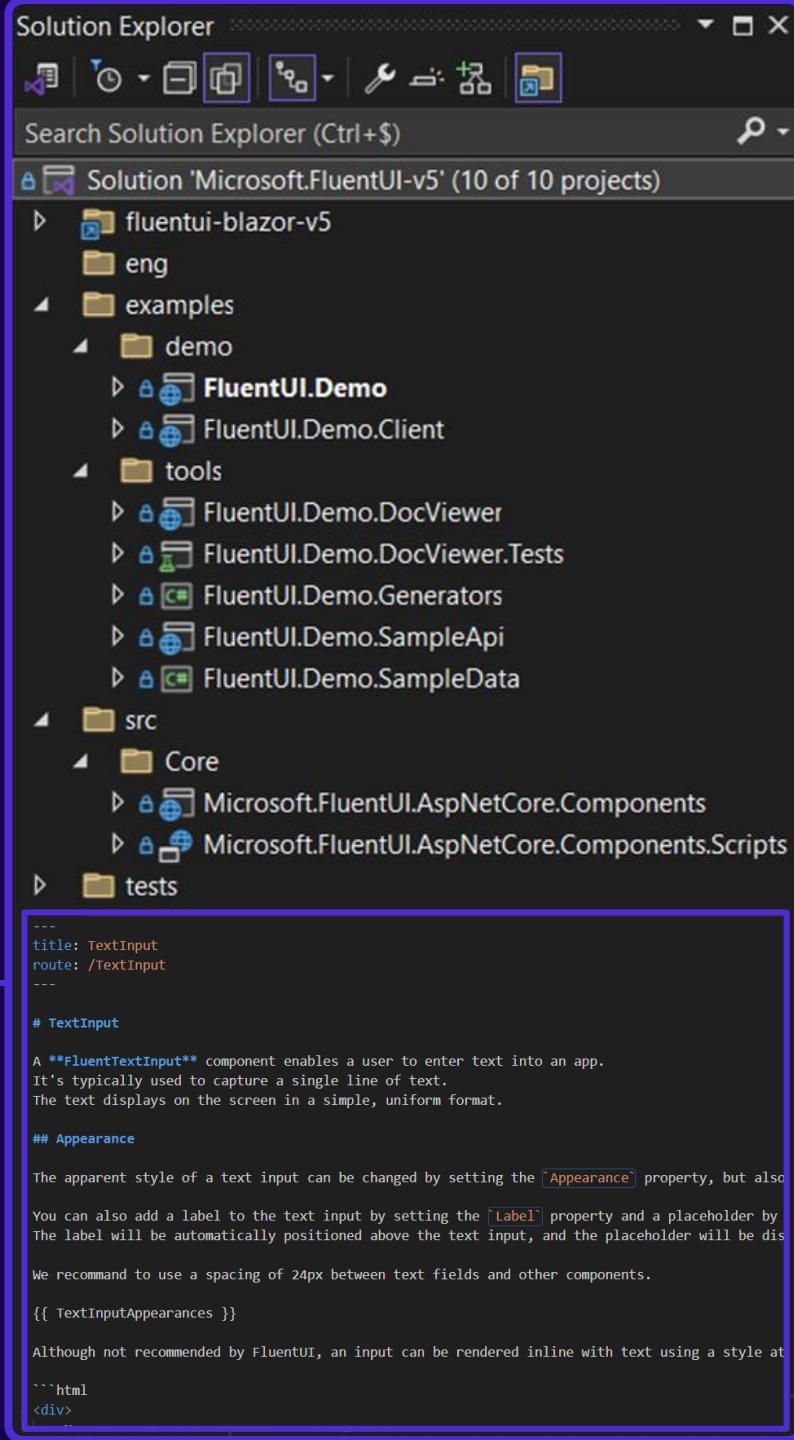
Demo Web Site

Sample Data & APIs

Markdown and Live Samples  
Migration documentation

## Why?

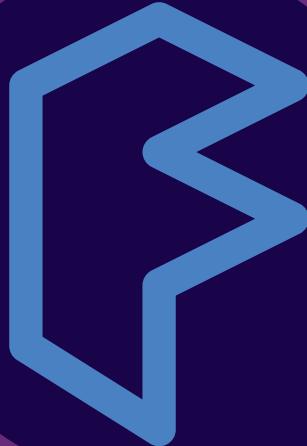
1. Easy to write and update
2. Improved documentation
3. Simplified integration with Microsoft Learn



# Demo

<https://fluentui-blazor.azurewebsites.net>

<https://web-components.fluentui.dev>



- FluentUI Blazor Components x Concepts / Introduction - Docs x +

https://fluentui-blazor.azurewebsites.net

Microsoft

Get Started

- Home
- What's New
- Migration to v5

Labs

- My Counter (Test)

Components

- Button
- Grid
- Icon
- Layout
- TextInput

# Welcome to the Fluent UI Blazor library documentation

The **Fluent UI Blazor** library provides a robust and extensive set of [Blazor](#) components. Some of those components are wrappers around Microsoft's official Fluent UI Web Components. Others are components that leverage the [Fluent Design System](#) or just make it easier to work with [Fluent](#) in general.

To get up and running with the **Microsoft.FluentUI.AspNetCore.Components** library, see the "[Getting Started](#)" section below.

## Introduction and getting started video



Open at [YouTube](#)

Getting started with the Fluent UI Blazor library

with  
Pablo Lopes  
Vincent Baaij

Watch on [YouTube](#)

## What's new?

If you are already up-and-running and upgrading from an earlier version of the library, please go to the [What's New page](#) for information on additions, fixes and (breaking) changes.

## Components & render modes

As described in the [Blazor documentation](#):

By default, components use **Static Server-side rendering** (SSR). The component renders to the response stream and there is no interactivity.

A component inherits its render mode from its parent. So unless a render mode is specified on the app, page or component level, every component (including ours) is statically rendered on the server and will not be interactive. For the Fluent UI Blazor library this means most components will display correctly but will not offer complete, if any, functionality.

Version: 5.0.0-alpha.1+f761e604 - Powered by .NET 8.0.8

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Thank you



# Resources

[aka.ms/get-dotnet-9](https://aka.ms/get-dotnet-9)

Download .NET 9

[aka.ms/blazor/fluentui](https://aka.ms/blazor/fluentui)

FluentUI Blazor Documentation

[aka.ms/blazor/fluentui/libs](https://aka.ms/blazor/fluentui/libs)

Libraries

[aka.ms/blazor/fluentui/demo/dnc24](https://aka.ms/blazor/fluentui/demo/dnc24)

Demo Source Code



@vnbaaij  
@denisvoituron





# Get .NET 9



Download .NET 9  
[aka.ms/get-dotnet-9](https://aka.ms/get-dotnet-9)