# Running C# in a Web Browser with Blazor

# Project Set Up

## Setup Steps for Visual Studio

From within VS (using point and click):

* Open the UsingHighLevelAppFrameworks solution
* Add a console project called Blazor\_demo.csproj to the solution

## Setup Steps for Visual Studio Code

From Command Prompt:

* Create blazor WASM project, and add to solution by typing:

dotnet new blazorwasm --output blazor\_demo

dotnet sln add blazor\_demo

## Now do the following regardless of project type:

* Configure the app to expose port 6002 when browsed to via https by editing line 17 of the launchSettings.json file located in the project’s Properties folder:

...

"applicationUrl": "https://localhost:6002;http://localhost:5002",

...

* The project comes with some ready written sample logic. Review the code and try to work out what it’s doing.
* Build and run the code. If a browser window isn’t shown automatically then open one and enter the following URL:

https://localhost:6002

* You should see a Hello, World! Home page displayed with a couple of other menu options with increment a counter and return some weather data. Try these out now.

**Add a new Calculator page to the project**

* Right click on the Pages folder and add a new Razor page called Calculator.razor (For Visual Studio select Add, Razor Component…. For VSC select New File and make sure you enter a file name that includes .razor at the end)
* Replace everything in the Calculator.razor page with the following:

@page "/calculator"

<PageTitle>Calculator</PageTitle>

<h1>Calculator</h1>

<p role="status">Result: @result</p>

<h1>Inputs</h1>

<table class="table table-dark">

<tbody>

<tr>

<td>

<input type="number"

min="0" max="100" placeholder="Number1" @bind="number1">

</td>

</tr>

<tr>

<td>

<input type="number"

min="0" max="100" placeholder="Number2" @bind="number2">

</td>

</tr>

<tr>

<td>

<button class="btn btn-primary"

onclick="@(() => DoCalc("+"))">Add</button>

</td>

</tr>

<tr>

<td>

<button class="btn btn-primary"

onclick="@(() => DoCalc("-"))">Subtract</button>

</td>

</tr>

<tr>

<td>

<button class="btn btn-primary"

onclick="@(() => DoCalc("\*"))">Multiply</button>

</td>

</tr>

<tr>

<td>

<button class="btn btn-primary"

onclick="@(() => DoCalc("/"))">Divide</button>

</td>

</tr>

</tbody>

</table>

@code {

private int result = 0;

//const string addOp = "+";

//const string subOp = "-";

//const string multOp = "\*";

//const string divOp = "/";

private void DoCalc(string operation)

{

if (number1 != null && number2 != null)

{

switch (operation)

{

case "+":

result = (int)number1 + (int)number2;

break;

case "-":

result = (int)number1 - (int)number2;

break;

case "\*":

result = (int)number1 \* (int)number2;

break;

case "/":

result = (int)number1 / (int)number2;

break;

default:

result = 0;

break;

}

}

}

}

@code {

private int? number1;

private int? number2;

}

* Open the file called NavMenu.razor located in the project’s Shared folder
* Add the following code within the nav element alongside the other NavLinks and divs:

<div class="nav-item px-3">

<NavLink class="nav-link" href="Calculator">

<span class="oi oi-plus" aria-hidden="true"></span> Calculator

</NavLink>

</div>

* Review the code and try to work out what it’s doing.
* Build and run the code. If a browser window isn’t shown automatically then open one and enter the following URL:

https://localhost:6002

* Use the menu to navigate to the Calculator page and confirm the code works as expected.

**Add some Movie based functionality**

* Add a FilmRater razor file to the Pages folder
* Replace the file’s content with the following:

@page "/filmRater"

<PageTitle>Film Rater</PageTitle>

<h2>Rate: @FilmTitle</h2>

<p role="status">Current rating: @currentRating</p>

<button class="btn btn-primary" @onclick="IncrementCount">Vote Up</button>

<button class="btn btn-primary" @onclick="DecrementCount">Vote Down</button>

<br />

<!-- Show a number of stars based on the number of clicks -->

@for (int i = 0; i < currentRating; i++)

{

<img width="32px" src="https://icons.iconarchive.com/icons/goodstuff-no-nonsense/free-space/1024/star-icon.png">

}

@code {

private int currentRating = 0;

string FilmTitle { get; set; }

protected override async Task OnInitializedAsync()

{

Random r = new Random(DateTime.Now.Millisecond);

int year = (int)r.NextInt64(1960, 1960 + films.Count);

FilmTitle = films[year];

}

private void IncrementCount()

{

if(currentRating < 10)

currentRating++;

}

private void DecrementCount()

{

if(currentRating > 0)

currentRating--;

}

Dictionary<int, string> films = new Dictionary<int, string>

{

{1960, "Psycho"},{1961, "West Side Story"},{1962, "Dr. No"},{1963, "The Great Escape"},{1964, "Goldfinger"},{1965, "Thunderball"},{1966, "Batman"},{1967, "You Only Live Twice"},{1968, "Oliver!"},{1969, "On Her Majesty's Secret Service"},

{1970, "Beneath the Planet of the Apes"},{1971, "Diamonds Are Forever"},{1972, "The Godfather"},{1973, "Live and Let Die"},{1974, "The Man with the Golden Gun"},{1975, "Monty Python and the Holy Grail"},{1976, "Rocky"},{1977, "Star Wars"},{1978, "Grease"},{1979, "Moonraker"},

{1980, "The Blues Brothers"},{1981, "Raiders of the Lost Ark"},{1982, "E.T. the Extra-Terrestrial"},{1983, "Return of the Jedi"},{1984, "Indiana Jones and the Temple of Doom"},{1985, "A View to a Kill"},{1986, "Top Gun"},{1987, "The Living Daylights"},{1988, "Die Hard"},{1989, "Indiana Jones and the Last Crusade"},

{1990, "Die Hard 2"},{1991, "Robin Hood: Prince of Thieves"},{1992, "Wayne's World"},{1993, "Jurassic Park"},{1994, "Four Weddings and a Funeral"},{1995, "Die Hard: With a Vengeance"},{1996, "Mission: Impossible"},{1997, "Men in Black"},{1998, "Armageddon"},{1999, "Star Wars: Episode I - The Phantom Menace"},

{2000, "Gladiator"},{2001, "Harry Potter and the Philosopher's Stone"},{2002, "Harry Potter and the Chamber of Secrets"},{2003, "Finding Nemo"},{2004, "Harry Potter and the Prisoner of Azkaban"},{2005, "Harry Potter and the Goblet of Fire"},{2006, "Casino Royale"},{2007, "Harry Potter and the Order of the Phoenix"},{2008, "Indiana Jones and the Kingdom of the Crystal Skull"},{2009, "Harry Potter and the Half-Blood Prince"},

{2010, "Inception"},{2011, "Pirates of the Caribbean: On Stranger Tides"},{2012, "Skyfall"},{2013, "Frozen"},{2014, "Guardians of the Galaxy"},{2015, "Minions"},{2016, "Finding Dory"},{2017, "Star Wars: The Last Jedi"},{2018, "Incredibles 2"},{2019, "The Lion King"},

{2020, "The Eight Hundred"},{2021, "No Time to Die"},{2022, "Top Gun: Maverick"},

};

}

* Open the file called NavMenu.razor located in the project’s Shared folder
* Add the following code within the nav element alongside the other NavLinks and divs:

<div class="nav-item px-3">

<NavLink class="nav-link" href="filmRater">

<span class="oi oi-plus" aria-hidden="true"></span> Film Rater

</NavLink>

</div>

* Review the code and try to work out what it’s doing.
* Build and run the code. If a browser window isn’t shown automatically then open one and enter the following URL:

https://localhost:6002

* Use the menu to navigate to the Calculator page and confirm the code works as expected.