

# **Building Single Page Applications in .NET Core 3**

**Jumpstart Coding Using  
Blazor and C#**

**Michele Aponte**

**Apress®**

# ***Building Single Page Applications in .NET Core 3: Jumpstart Coding Using Blazor and C#***

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*To my son, Francesco Paolo: I hope that one day you will read this book and be as proud of me as I am of you, especially every time you smile when you catch my eye.*

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# About the Author

**Michele Aponte** is a programmer who has worked with Java, .NET, and JavaScript at software and IT consulting companies in his native Italy since 1993. Combining his training, consulting, and development skills, in 2013 Michele founded Blexin to help customers migrate older software and systems to new technologies to improve their businesses. Passionate about programming, Michele embraces sharing with the community. He founded DotNetCampania, a Microsoft User Group in 2008, and has organized many regional conferences. He is also the founder of Blazor Developer Italiani, the Italian developer group about the Blazor framework. Recognized as a Microsoft MVP, he often presents on Microsoft and JavaScript topics at tech conferences throughout Italy.

# Acknowledgments

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# Introduction

Blazor has garnered a great deal of enthusiasm since its initial release. I've followed the framework from the beginning, and when teaching any new technology, I use a practical approach. This book looks at the needs of real applications and answers all the questions you might have when learning how to use Blazor.

Specifically, in Chapter 1, I focus on the success of this framework and how it solves one of the problems most felt by Microsoft programmers: using JavaScript. Blazor allows you to use .NET directly in the browser, using open standards so as not to repeat the mistakes of the past. In my opinion, however, it is important to understand how Blazor works beyond the tools made available by the development environment, so I focus on the code in this book. I start with a simple example, without using the templates made available by Microsoft, to highlight how it works.

In Chapter 2, you will find a detailed comparison between the two versions of Blazor for web development: Blazor Server and Blazor WebAssembly. Using the example from the first chapter, I compare the two versions by highlighting what is going on behind the scenes and how WebAssembly is revolutionizing the world of front-end development. I explain how to choose a version based your requirements because they both have pros and cons and must be contextualized in your environment/situation.

In Chapter 3, I cover all the concepts necessary to create a single-page application, starting from scratch and tackling some issues concerning the decomposition of the interface into components. In this chapter, you will learn how to create pages and navigate between them, you will see how to create forms for data entry, and you will learn how to integrate the



## INTRODUCTION

front end with the back-end, differentiating the approach between the two versions of the framework but standardizing their use thanks to the dependency injection of ASP.NET Core. Here you will discover that the framework allows you to invoke JavaScript functions from .NET and to invoke .NET methods from JavaScript functions.

In Chapter 4, I explain how to create libraries of reusable components, addressing how to generalize components thanks to the framework's ability to use .NET Generics and content projection. What may seem like more advanced aspects are actually necessary to avoid reinventing the wheel on each page of your application; this also allows you to start creating your own Blazor component library.

In Chapter 5, I cover application deployment, using both versions of the framework. It's important to know where your application will run, since scalability problems must be addressed and will impact how you write the application.

You can find the code for the first two chapters of the book in the `countdown` and `countdown-wasm` folders of the code download; you can use the two versions to see the differences between Blazor Server and Blazor WebAssembly within the same small application. The code for the third and fourth chapters, where you learn to create a small article manager, is available for both versions of the framework in eight pieces that follow the flow of the chapters.

- The application structure
- Pages and routing
- Components and their use in pages
- Back-end integration and shared library
- JavaScript interoperability

- Separation of the code into different files
- Blazor Library
- Custom input component

You can copy and execute the code that accompanies the book, but I suggest you write it from scratch by following the instructions in the chapters. That's the best way to learn Blazor!