



Visual Studio Code

End-to-End Editing and Debugging
Tools for Web Developers

Bruce Johnson

WILEY

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ABOUT THE AUTHOR

BRUCE JOHNSON is a partner at ObjectSharp Consulting and has been working in the computer industry for 33 years (has it really been that long?). During that time, he has gone from writing UNIX code for mainframes and minicomputers to focusing on PCs and Windows. It was really the advent of Visual Basic and the World Wide Web in the early 1990s that triggered that change. But since then, he has been working on projects that are at whatever the leading edge of Windows technology happened to be. This means he has built rich client applications, web applications, services, and APIs. And there has been a sprinkling of database and front-end development thrown in for good measure. Just because.

As well as having fun with building systems, Bruce has spoken hundreds of times at conferences and user groups throughout North America. He has been a Microsoft Certified Trainer (MCT) and the co-president of the Metro Toronto .NET User Group. He has also written columns and articles for numerous magazines. For all this activity, Bruce was also a Microsoft MVP for more than ten years. At the moment, he's already working on the outline for his next book.

ABOUT THE TECHNICAL EDITOR

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I'D LIKE TO THANK MY four children, Curtis, Gillian, Cameron, and Kyle, for their love and support. They are teenagers or young adults now, so getting time alone to write wasn't a challenge. In fact, it was a regular request of theirs. But they have always been supportive of my writing projects and I am incredibly proud of them. My life would be much less rich without them.

My children are not the only people in my life who have been supportive of my writing. There is one other, whose modesty and desire for privacy prevents me from acknowledging them by name, who has been a large part of my impetus to write, not just this book but others. They know who they are and how grateful I am for their support.

Writing a book is a strange combination of lonely and collaborative. Much of the text is written while sitting late at night at a desk or on weekend mornings in a coffee shop. But once the first draft is complete, it gets passed into the hands of some incredibly talented people. And those people are the reason why the prose is grammatically correct, in the active voice, and flows in a logical sequence. It has always been a pleasure to work with the editors, technical editors, and copy editors of Wiley, and this book was no exception. I'm incredibly grateful for their help and attention to detail. They are a big reason why you can read what I have written.

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INTRODUCTION

In a surprisingly short period of time, Visual Studio Code has become very popular among web developers. Part of that is because it's fast, lightweight, and is available on the three main platforms (Windows, Mac, Linux). But it also boasts several features that set it apart from the competition. This includes support for IntelliSense, refactoring capabilities, and an extensive ecosystem of extensions. But even beyond the features that help developers craft code, there is also debugging support. It's possible to open a .NET Core project from within Visual Studio Code and get end-to-end execution and debugging functionality.

The goal of this book is to help developers become not just familiar, but productive in Visual Studio Code. It starts with an introduction to the editing features of the workspace and continues with the more advanced functionality (including refactoring and key bindings). The book finishes with an extensive look at the extensibility of Visual Studio Code, so that you can add whatever functionality you need to make your days more productive.

WHAT DOES THIS BOOK COVER?

Here is a glance at what's in each chapter.

Chapter 1: Introducing Visual Studio Code introduces the cross-platform nature of the tool, along with the steps to install Visual Studio Code on Windows, Mac, and Linux platforms.

Chapter 2: Exploring the User Interface examines the focal point of the development experience: the workspace. This chapter introduces the developer to the features of the workspace and how those features can be customized.

Chapter 3: Files and Folders and Projects (Oh My) considers the fluid structure of a web project. Visual Studio Code allows developers to choose the structure according to their needs. This chapter looks at the different ways Visual Studio Code supports the most common structures.

Chapter 4: Editing Code in Your Language of Choice discusses the Visual Studio Code editor. The editor is the heart of the developer experience and probably the most important chapter in the book. It covers syntax coloring, IntelliSense, refactoring, and code navigation.

Chapter 5: Integrating with Source Control covers the support that Visual Studio Code provides for source control, through both the Git integration that is available out of the box as well as third-party extensions for other source control providers. In this chapter, we look at how to perform common Git functions (commits, checkouts, branches, and merges) from within Visual Studio Code.

Chapter 6: Debugging Code looks at the support that Visual Studio Code has for many of the debugging features to which .NET developers have become accustomed. This chapter covers how to debug your code in both .NET Core and Node.js.

Chapter 7: External Tools and Task Automation describes Visual Studio Code's extensive capability to integrate with these tools and provides an environment in which the tasks associated with the tools can be automated.

Chapter 8: Unit Testing examines the support provided by Visual Studio Code for writing unit tests against your code. This chapter covers the unit testing capabilities in JavaScript and Python.

Chapter 9: Working with Extensions looks at the extensibility that is a big part of Visual Studio Code. Many extensions are available in the marketplace, from additional language support to tools that provide incredibly useful features. This chapter covers the options available to install and configure extensions and provides a description of the extensions that add the sort of functionality that developers live to discover.

Chapter 10: Creating Your Own Extensions covers how developers can create any additional tools that they need. This includes support for languages that might not already be included and features that can't be found in the marketplace. This chapter looks at how to extend Visual Studio Code to provide the functions that the developer needs.

WHO SHOULD READ THIS BOOK

The goal of the book is to provide the information needed by an existing web developer to be able to use Visual Studio Code to do full-stack development. The book remains agnostic on the language being used to develop the web application, although the examples are done in JavaScript, with occasional snippets of C# and Python.

I am making certain assumptions regarding the reader here:

- You are familiar with web technologies.
- You have a rudimentary understanding of editing and running code for web applications.
- You are aware of some of the concepts of source control providers, such as Git.

In general, I expect that most of the readers of this book will be existing developers who are intrigued by what they have heard about Visual Studio Code. For that group, the purpose of the book is to provide a basis for using the tool to do their development tasks. However, it's not like current Visual Studio Code users are ignored. For them, the goal of the book is to expand their knowledge of how the tool works and the extensions that are available. Regardless of which group a reader falls into, lots of information will be immediately useful and ultimately invaluable.

HOW TO CONTACT THE AUTHOR

We welcome your comments and questions! If you think you've found a mistake in the book, please tell us at errata@wiley.com. You can download the companion files that accompany each chapter from www.wiley.com/go/visualstudiocode and for any feedback you have about this project, you can contact me any of these ways:

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1

Introducing Visual Studio Code

WHAT'S IN THIS CHAPTER?

- Installing and getting started with Visual Studio Code
- Understanding the cross-platform components that make up Visual Studio Code

GETTING STARTED

The choice of the editor used by any developer is an incredibly personal one. The reason to pick one over the rest depends on a collection of attributes typically related to the tasks they perform on a daily basis. Developers look for functionality, keystroke shortcuts, code snippets, colorations, and more that allow them to stay productive.

Dislodging developers from their choice is not easy. Any change in editors is going to result in an immediate loss of productivity. After all, it takes time to become familiar with the features offered and have them become a natural part of the coding “flow.” As a result, it takes a special level of “better” for a developer to switch editors.

For this reason, the success of Visual Studio Code speaks volumes for its features and functionality. Although it has been officially released for just three years (it left public preview in April 2016), it has quickly become one of the top editors in terms of popularity, competing with Sublime Text, Atom, and UltraEdit for the top spot.

But that doesn't matter to you, the reader. What you care about more is what Visual Studio Code can do to help you be productive. As a developer, it is frequently the small things that make the biggest difference—knowing how to add code with a single keyboard chord, being able to do client and server debugging on your `node.js` project, or language-sensitive code completion. Any, all, or none of those might matter, but the goal of this book is to help you find the five or ten features that matter to you and that will make you excited to use Visual Studio Code.

Installing Visual Studio Code

Visual Studio Code is a cross-platform editor. In this instance, cross-platform means that a version is available to run on Windows (7, 8, and 10), macOS, and Linux. The installation process is similar for each, and the starting point is the same in all cases: <https://code.visualstudio.com/Download>. Figure 1-1 shows what the download page looks like presently, but it's naturally subject to change.

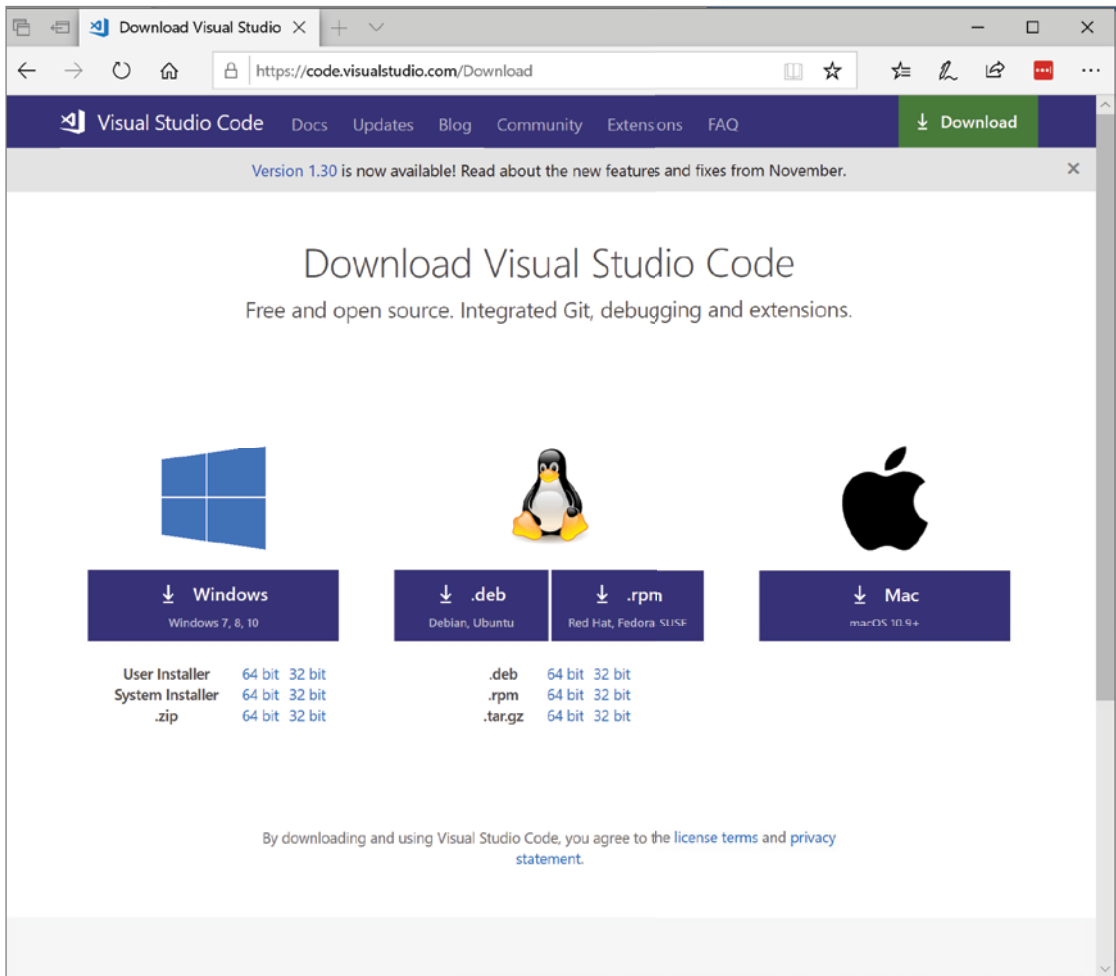


FIGURE 1-1

Windows

The most efficient starting point for a Windows installation is to download the desired installer. You have six possible options—three different installers each of which is available in 32-bit and 64-bit