Setting up your development environment

Before you start programming, you will need to choose an Integrated Development Environment (IDE) that includes a code editor for C#. Microsoft has a family of IDEs:

- Visual Studio 2017
- Visual Studio for Mac
- Visual Studio Code

The most mature and fully-featured IDE to choose is Microsoft Visual Studio 2017, but it only runs on the Windows operating system.

The most modern and lightweight IDE to choose, and the only one from Microsoft that is cross-platform, is Microsoft Visual Studio Code, and it will run on all common operating systems, including Windows, macOS, and many varieties of Linux, such as Red Hat Enterprise Linux (RHEL) and Ubuntu.

To help you decide if Visual Studio Code is right for you, I recommend that you watch the following video, Beginner's Guide to VS Code: Up and Running in Ten Minutes: https://channel9.msdn.com/Blogs/raw-tech/Beginners-Guide-to-VS-Code

The most suitable IDE to choose for mobile development is Visual Studio for Mac. To create apps for iOS (iPhone and iPad), tvOS, macOS, and watchOS, you must have macOS and Xcode. Although you can use Visual Studio 2017 with its Xamarin extensions to write a cross-platform mobile app, you still need macOS and Xcode to compile it.

Using alternative C# IDEs

There are alternative IDEs for C#, for example, **MonoDevelop** and **JetBrains Rider**. You can install either of these two IDEs with the help of the following URLs:

- For MonoDevelop IDE, visit `http://www.monodevelop.com/`
- For JetBrains Rider, visit `https://www.jetbrains.com/rider/`

Cloud9 is a web browser-based IDE, so it's even more cross-platform than the others. It is growing in popularity. Here is the link: `https://c9.io/web/sign-up/free`

Installing Microsoft Visual Studio 2017

You can use Windows 7 SP1 or later to complete most of the chapters in this book, but you will have a better experience if you use Windows 10 Fall Creators Update.

Since October 2014, Microsoft has made a professional-quality edition of Visual Studio available to everyone for free. It is called Community Edition.

Download and install **Microsoft Visual Studio 2017 version 15.4 or later** from the following link:
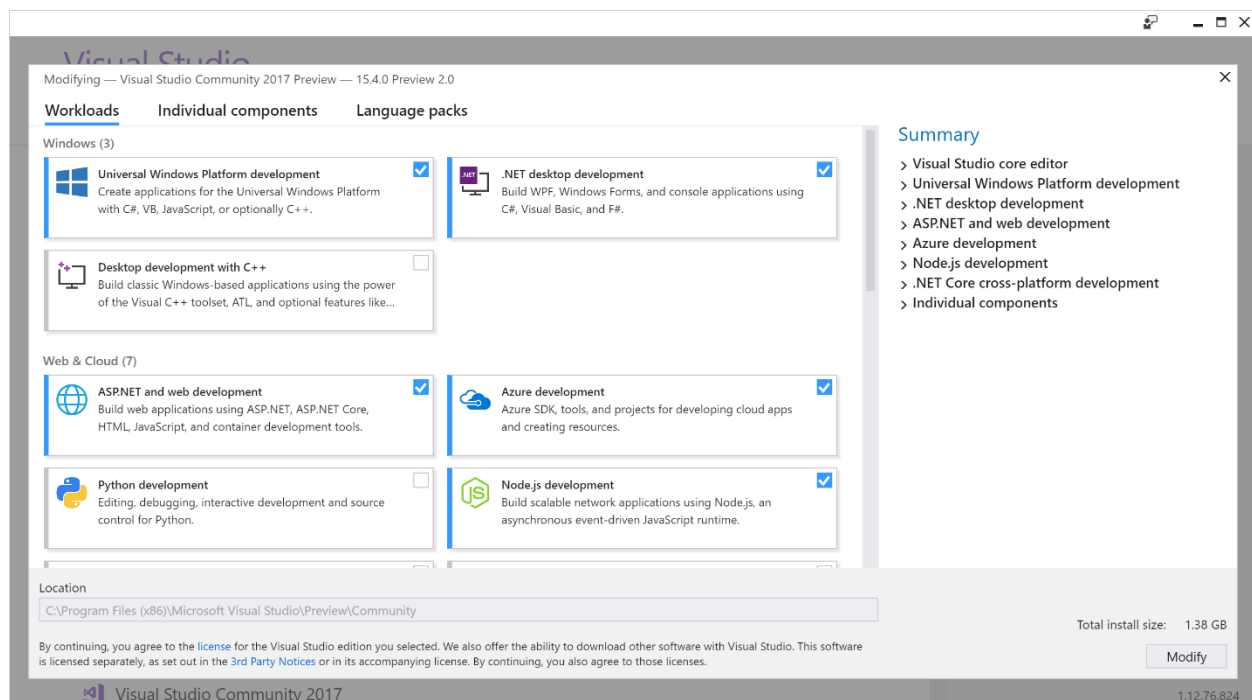
`https://www.visualstudio.com/downloads/`

You must install version 15.4 or later of Visual Studio 2017 to be able to work with .NET Core for UWP. You must install version 15.3 or later of Visual Studio 2017 to be able to work with .NET Core 2.0. Older versions of Visual Studio 2017 only support .NET Core 1.0 and 1.1.

Choosing workloads

On the Workloads tab, choose the following, as partially shown in the following screenshot:

- Universal Windows Platform development

- .NET desktop development

- ASP.NET and web development

- Azure development

- Node.js development

- .NET Core cross-platform development

Choosing additional components

On the Individual components tab, choose the following additional components:

- Class Designer
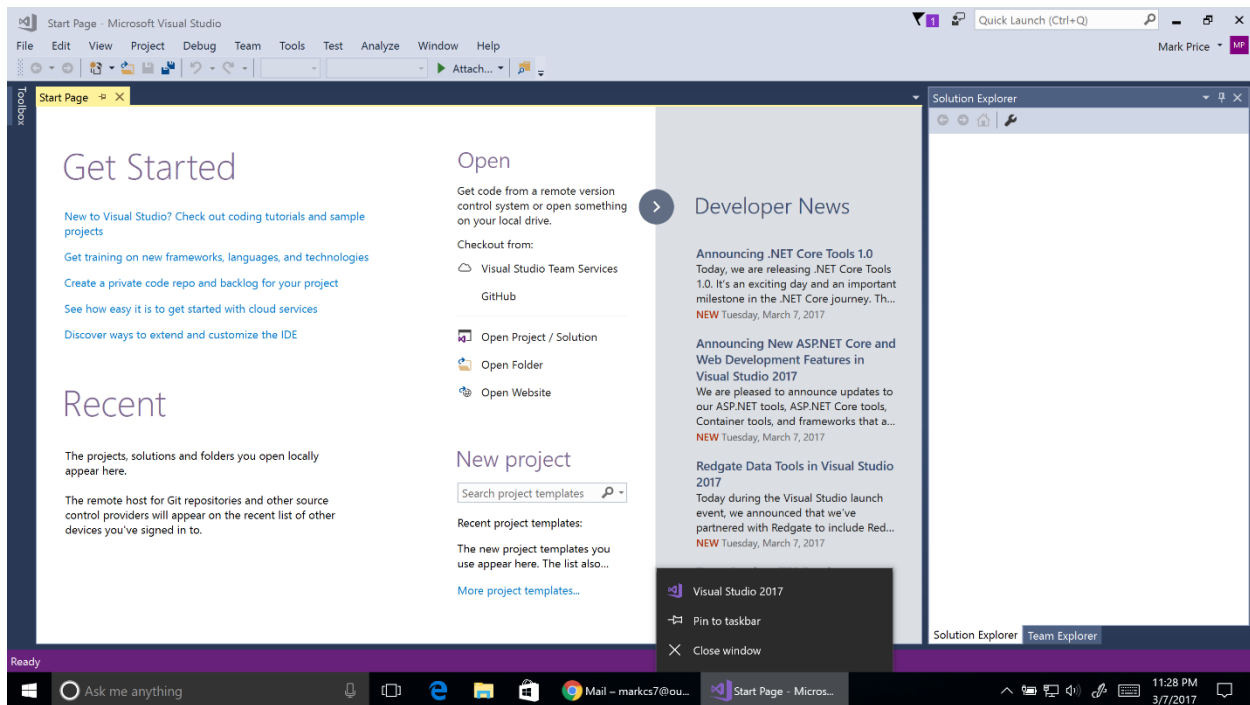- GitHub extension for Visual Studio
- PowerShell tools

Click on Install, and wait for the installer to acquire the selected software, and install it. When the installation is complete, click on Launch.

The first time that you run Visual Studio 2017, you will be prompted to sign in. If you have a Microsoft account, you can use that account. If you don't, then register for a new one at the following link:

https://signup.live.com/

When starting Visual Studio 2017 for the first time, you will be prompted to configure your environment. For Development Settings, choose Visual C#. For the color theme, I chose Blue, but you can choose whatever tickles your fancy.

You will see the Microsoft Visual Studio user interface with the Start Page open in the central area. Like most Windows desktop applications, Visual Studio has a menu bar, a toolbar for common commands, and a status bar at the bottom. On the right is the Solution Explorer that will list your open projects:

Installing Microsoft Visual Studio Code

Between June 2015 and September 2017, Microsoft released a new version of **Visual Studio Code** almost every month. Visual Studio Code has rapidly improved and surprised Microsoft with its popularity. Even if you plan to use Visual Studio 2017 or Visual Studio for Mac as your primary development tool, I recommend that you learn how to use Visual Studio Code and the .NET Core command-line tool as well.

You can download Visual Studio Code from the following link:

https://code.visualstudio.com/

You can read about Microsoft's plans for Visual Studio Code in 2018 at the following link:
https://github.com/Microsoft/vscode/wiki/Roadmap

Downloading and installing Visual Studio for Mac

You can download and install Visual Studio for Mac from the following link:

https://www.visualstudio.com/vs/visual-studio-mac/

In the Visual Studio for Mac Installer, accept the License Terms and the Privacy Statement, choose to install all components, and then click on Continue, as shown in the following screenshot