C#

Succinctly

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Chapter 1 Introducing C# and .NET

Welcome to C# Succinctly. True to the Succinctly series concept, this book is very focused on a single topic: the C# programming language. I might briefly mention some technologies that you can write with C# or explain how a feature fits into those technologies, but the whole of this book is about helping you become familiar with C# syntax.

In this chapter, Ill start with some introductory information and then jump straight into a simple C# program.

What can I do with C#?

C# is a general purpose, object-oriented, component-based programming language. As a general purpose language, you have a number of ways to apply C# to accomplish many different tasks. You can build web applications with ASP.NET, desktop applications with Windows Presentation Foundation (WPF), or build mobile applications for Windows Phone. Other applications include code that runs in the cloud via Windows Azure, and iOS, Android, and Windows Phone support with the Xamarin platform. There might be times when you need a different language, like C or C++, to communicate with hardware or real-time systems. However, from a general programming perspective, you can do a lot with C#.

What is .Net

The runtime is more formally named the Common Language Runtime (CLR). Programming languages that target the CLR compile to an Intermediate Language (IL). The CLR itself is a virtual machine that runs IL and provides many services such as memory management, garbage collection, exception management, security, and more.

The Framework Class Library (FCL) is a set of reusable code that provides both general services and technology-specific platforms. The general services include essential types such as collections, cryptography, networking, and more. In addition to general classes, the FCL includes technology-specific platforms like ASP.NET, WPF, web services, and more. The value the FCL offers is to have common components available for reuse, saving time and money without needing to write that code yourself.

There is a huge ecosystem of open-source and commercial software that relies on and supports .NET. If you visit CodePlex, GitHub, or any other open-source code repository site, you will see a multitude of projects written in C#. Commercial offerings include tools and services that help you build code, manage systems, and offer applications. Syncfusion is part of this ecosystem, offering reusable components for many of the .NET technologies I have mentioned.

Writing, Running, and Deploying a C# Program

The previous section described plenty of great things you can do with C#, but most of them are so detailed that they require their own book. To stay focused on the C# programming language, the code in this book will be for the console application. A console application runs on the command line, which you will learn about in this section. You can write your code with any editor, but this book uses Visual Studio.

Note: The code samples in this book can be downloaded at https://bitbucket.org/syncfusiontech/c-succinctly