

# Introduction

# Prerequisites

This course assumes that you are familiar and experienced with Microsoft's .NET Framework and ASP.NET development tools. You should be familiar with web development and understand how HTTP and HTML work to produce web pages for the user. You should have experience writing applications with ASP.NET 4.0 or later Web Forms, and be familiar with how ASP.NET processes page requests, and have strong experience with .NET Framework 4.0 or later programming. You should have experience with Visual Studio 2012 for building web application projects. Experience with building database applications using these tools will be helpful, although not strictly necessary.

# Installing the Practice Files

## Software Requirements

This course assumes a full installation of Visual Studio 2012, at least the Premium Edition, with its version of SQL Express installed. The course also assumes that you have SQL Server 2008 R2 or later installed as a default instance. If you use SQL Express, be sure to download the version that includes the advanced features, since in order to install the AdventureWorks databases you must have Full Text Search installed. You'll also need to change the connection strings in the samples to use SQLEXPRESS instead of the full version of SQL Server. The screenshots of the practice files are from Visual Studio 2012 which ships with MVC 4, although Visual Studio 2010 SP1 may be used with MVC 4.

**NOTE** Visual Studio is a highly configurable development environment. The descriptions and screen shots in this course were done using Visual Studio 2012. There are several built-in settings options available when you first start Visual Studio. If you selected another group of settings when you first ran Visual Studio after installation, have customized your environment, or have added or removed add-ons, it will likely appear different than how it appears in this course. All the features discussed in the course should be available, but you may have to slightly alter the steps to perform some actions.

Visual Studio 2012 ships with versions 3 and 4 of MVC, so you will not have to download and install MVC 4, the version on which this course is based. If you are using Visual Studio 2010 or older, or for some reason need to download and install MVC 4, you can find it at the following link, using either the Web Platform Installer or a full download:

<http://go.appdev.com/?id=MV4A>

Visual Studio 2012 also ships with the latest version of Entity Framework, but if you are using an older version of Visual Studio, then this is an add-on to Visual Studio and the .NET Framework, so you must download and install version 4.1 separately. You can download the released version here:

<http://go.appdev.com/?id=MV4B>

You can also install the latest version of Entity Framework through NuGet, a Visual Studio extension for installing packages of components to a project. This option requires familiarity with NuGet, but you can find information at the following link:

<http://go.appdev.com/?id=MV4C>

If you require an older version of Entity Framework rather than the latest, be sure to locate the correct version on the NuGet page (referenced above) as your command to install the older version of Entity Framework will be similar to the following example:

```
PM> Install-Package EntityFramework -Version 4.1.10715.0
```

Microsoft makes available the C# source code for the System.Web.Mvc namespace at the same download location, under its liberal open source Microsoft Public License. You won't need the source code for this course, but as you learn ASP.NET MVC it can be very interesting and helpful to look at the source code to see how features are implemented. Over time they will release the source code for more parts of the MVC framework.

For the most part, the course views web pages in Internet Explorer. But sometimes it is advantageous to view pages in Firefox, particularly to use the excellent Firebug add-on, which you can install from the following location. Firebug is the gold standard for web page debugging, letting you see changes to the DOM in memory and monitor Ajax requests between client and server, along with lots of other great tools.

<http://go.appdev.com/?id=MV4D>

Sometimes it is helpful to turn client-side scripting off when testing web pages to see how they behave when JavaScript can't run. All browsers let you do this for all pages, but it is generally a multi-click process to turn it on and off, which gets tedious when you do it dozens of times a day. The excellent NoScript add-on for Firefox makes it easy to turn scripting on and off for specific web sites, and has the added benefit of protecting you from malware when surfing the web. You can install NoScript from the following location.

<http://go.appdev.com/?id=MV4E>

If you use Internet Explorer as your primary browser, you can also use Fiddler as a debugger alongside Internet Explorer.

<http://go.appdev.com/?id=MV4H>

## Sample Database

The examples in this course use data from some of the SQL Server 2008 R2 Release 1 versions of the SQL Server sample databases, mostly AdventureWorksLT2008R2, as well as the Northwind sample database. The various AdventureWorks databases are available on Microsoft's Codeplex web site. Here is the link where you can download the installation files:

<http://go.appdev.com/?id=MV4F>

<p><b>WARNING!</b> As mentioned, we used the SQL Server 2008 R2 version of the AdventureWorks databases in this course. If Microsoft later releases new refreshes, the newer databases might have slight structural or data variations that could affect the results of queries and other operations. The 2008 version of the AdventureWorks databases will work as well, but there may be small differences in the data and schema from what you see in this course.</p>
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Microsoft is fond of changing web links on its sites, however. So if the previous link doesn't take you to the files, search the web for the terms *codeplex* and *adventureworks*. That should take you straight to the correct place. You'll want to download the file for the processor that matches your installation of SQL Server: 32-bit, 64-bit, or the Itanium 64-bit processor.

Run the appropriate MSI file to install the databases. It is easiest if you allow the installer to automatically create the databases in an instance of SQL Server that you can specify. If you opt not to do that, you'll have to install the files and then create the databases manually using the scripts installed to the SQL Server program files samples directory.

**NOTE** The version of the installer for the AdventureWorks databases that is current as of this writing installs two versions of the databases, one set for SQL Server 2005 and another for 2008. See Figure 1 for the list of installed databases in Management Studio's Object Explorer.

The Northwind database, which is an older sample with a simpler structure, is a separate download. To download a copy of the Northwind database, browse to the following URL.

<http://go.appdev.com/?id=MV4G>

**WARNING!** There is a community effort to update the Northwind database on CodePlex at <http://go.appdev.com/?id=MV4J>. This is not the version that you should use for this course.

Installing the MSI places a copy of the **instnwnd.sql** script on your hard drive. Double-click this file to open it in SQL Server Management Studio (SSMS). Click **Connect** in the Connect to Database Engine dialog box, and then click **Execute in SSMS** to run the script, which will create the Northwind database.

Once you've installed the sample databases, Object Explorer in Management Studio should look like Figure 1.

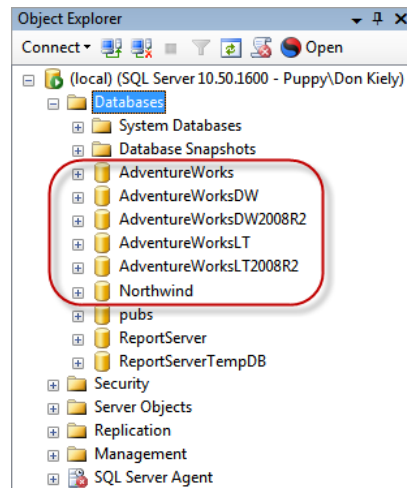


Figure 1. Sample databases installed for this course.

## Installation

The Installer files provided, **M4A1.exe** and **M4A1Labs.exe**, will create the following default subfolders: **C:\AppDev\M4A1\Samples** and **C:\AppDev\M4A1\Labs**. After the files are installed, a subfolder(s) for each chapter and lab are created and placed within one of the corresponding folders. Please refer to the individual chapters to locate the correct folder.

## About the Authors

**Don Kiely**, MVP, MCSD, is a senior technology consultant specializing in developing desktop and web applications that integrate databases and related technologies, using tools including SQL Server, Entity Framework, Visual Basic, C#, and ASP.NET. Don has authored and co-authored several programming books, many of which you're likely to see in the bargain bin at your local mega-bookstore. He writes regularly for many industry journals, including Visual Studio Magazine, SQL Server Magazine, MSDN Magazine, CoDe Magazine, and DevConnections Magazine. Don trains developers and speaks regularly at industry conferences, including TechEd, SQL PASS, DevConnections, DevTeach, and others, and is a member of the INETA and MSDN Canada speaker bureaus. Don is a full member of the Institute of Electronics and Electrical Engineers and the American Society of Civil Engineers. He earned a BS in Civil Engineering from the University of Notre Dame and an MBA from the University of Colorado, but fortunately learned the error of his ways. In his spare time he roams the Alaska wilderness by foot, dog sled, skis, canoe, and kayak. He is the volunteer president of Second Chance League, a 501(c)3 non-profit sled dog rescue organization in Interior Alaska, at [www.secondchanceleague.org](http://www.secondchanceleague.org). Contact him at: [donkiely@computer.org](mailto:donkiely@computer.org).

**Phil Ledgerwood** has been a software developer for 15 years. He currently works primarily in .NET technologies producing custom software for organizations of all sizes. He has also done extensive training for these organizations in both technical and business process topics. Phil is a strong advocate of Lean and Agile software development and spends most of his time helping companies interested in the value these practices can bring to their development efforts. He does this through a combination of training and working "in the trenches" as a developer on corporate teams, keeping a hand in the academic side of emerging technology and practices, while also directly applying it in real projects to bring real business value.

**James Curtis**, is an ASP.NET Developer that primarily focuses on UX technology in the Microsoft space. He participates in many local and regional code camps, as well as blogging and tweeting to the community at large. James is an active consultant with a passion for startups that has led to the involvement of several companies.

