

# ASP06: A Web Forms Programmers First ASP.NET MVC 3 Application

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# Paul Litwin

- **Developer**
  - Focus: ASP.NET, ASP, C#, SQL Server, Reporting Services
  - Microsoft MVP
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- **Co-Founder and Senior Trainer**
  - Deep Training
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- **Conference Chair/Speaker**
  - Chair, Microsoft ASP.NET Connections
  - Member INETA Speakers Bureau
- **Author of over a dozen books & courses, including...**
  - *Agile ASP.NET Unleashed* (writing...)
  - *AppDev SQL Server 2005 & 2008 Reporting Services Courses*
  - *ASP.NET for Developers*
  - *Access Cookbook*
  - *Access 2002 Desktop/Enterprise Dev Handbook*

# Slides & Samples Download

- You can download them from:
  - [www.deeptraining.com/litwin](http://www.deeptraining.com/litwin)

# Versions Used

- Visual Studio 2010 SP1
- Entity Framework 4.1
- ASP.NET MVC 3 Tools Update

# A Web Form Programmer's 1<sup>st</sup> MVC 3 App

## Agenda

- **Contrasting MVC to Web Forms**
- What's New in MVC 3
- Building a Database First MVC App

# ASP.NET MVC

- A way to build highly-testable apps on top of the ASP.NET Framework
- An alternative to using RAD Web Forms

# MVC Design Pattern

- Conery, Hanselman, Haack, Guthrie define it as...
  - An architectural pattern used to separate an application into three main aspects
    - **Model**. Set of classes that represent data and business rules for how data can be changed and manipulated
    - **View**. Application's user interface
    - **Controller**. Set of classes that handles communication from user, overall application flow, and application-specific logic

# What's Wrong with Web Forms?

- Nothing...but...
  - Web forms don't support as precise control over "separation of concerns"
    - Too much of an application ends up in the "code behind"
  - High level of abstraction
    - Not as "close to the metal" as some devs want
  - Web forms are not as well suited for testing
    - Testing the "code behind" code is difficult
  - Search engine optimization (SEO) issues
    - ASP.NET 4.0 addresses this

# Why Separate Concerns?

- Makes your app code more...
  - testable
  - modifiable / refactorable
  - reusable
  - maintainable
  - scalable

# What Web Forms & ASP.NET MVC Have in Common

- Both use Visual Studio
- Both can use .aspx pages
  - Both can use Master pages and user controls
  - though you can use a different view engine if you'd like in ASP.NET MVC (*Razor*, *NHaml*, *Spark*, *Brail*, *NVelocity*, etc.)
- Both can use any data access framework (ADO.NET, LINQ, Entity Framework, etc.)
- Both built on ASP.NET
  - ASP.NET runtime, localization, HTML encoding, ...
- Both run on IIS

# A Web Form Programmer's 1<sup>st</sup> MVC 3 App

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# Highlights of New Stuff 1

- Razor View Engine Option
  - Clean, concise language
- Web Forms (ASPX) View Engine still there
  - Which view engine should you choose?
    - ASPX is most natural
    - Razor is being pushed hard by Microsoft

# Demo

## Razor vs. ASPX Views

# Highlights of New Stuff 2

- JavaScript / Ajax Improvements
  - New jQuery-template-based “Unobtrusive JavaScript”
- Validation Improvements
  - Out-of-box support for client-side validation
  - Support for remote validation

# Highlights of New Stuff 3

- **NuGet Packer Manager**
  - Easy way to install add-ins and additional functionality to projects

# A Web Form Programmer's 1<sup>st</sup> MVC 3 App

## Agenda

- Contrasting MVC to Web Forms
- What's New in MVC 3
- **Building a Database First MVC App**

# Database First Development

- Supported by EF 1+
- Create database
- EF creates model to match database
- New for EF 4.1
  - Simplified DbContext means less code; easier to write code

# Demo

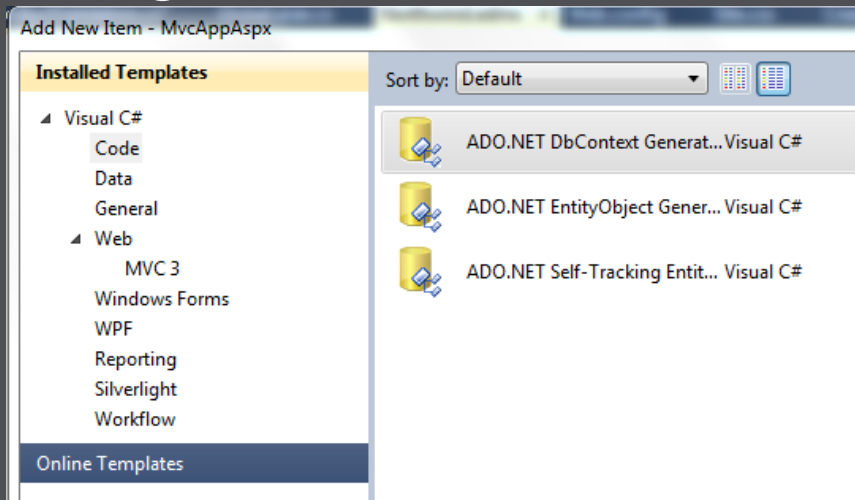
## Building a Database First App using MVC 3

# Database First App Demo

- Step 0
  - Install Entity Framework 4.1
- Step 1
  - Add Entity Framework model

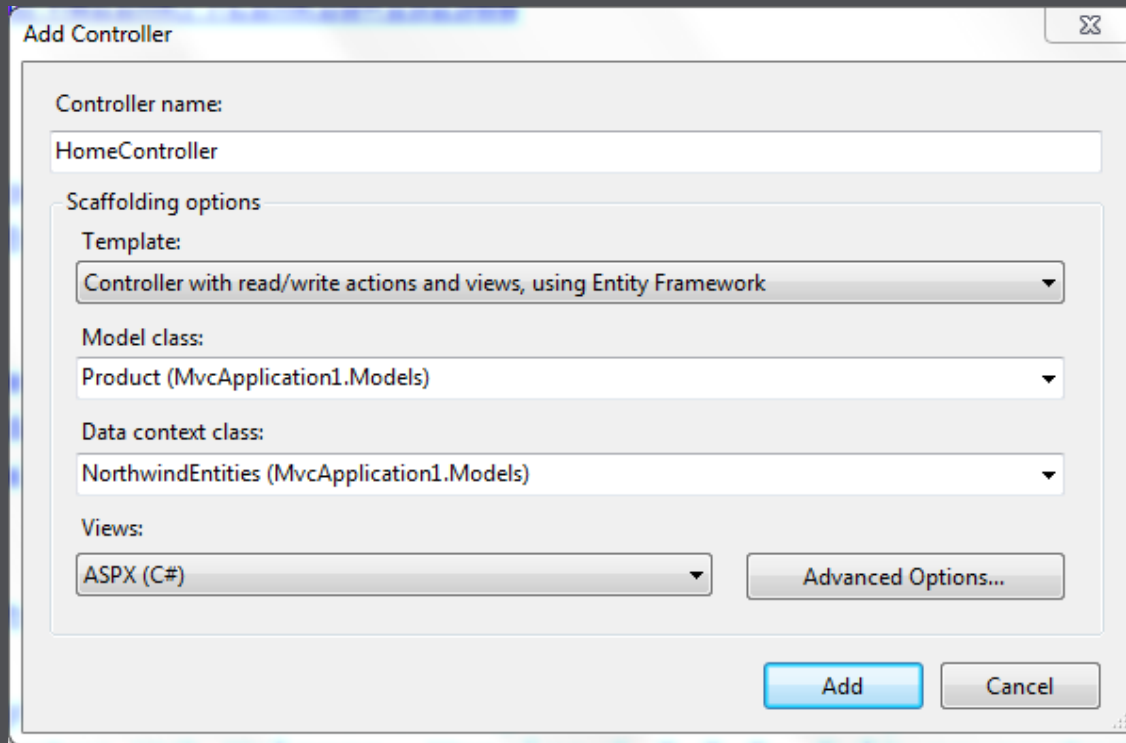
# Database First App Demo

- Step 2
  - Change Home Controller route
- Step 3
  - Change EF code generation to **DbContext** using **Add Code Generation Item...** pop-up menu



# Database First App Demo

- Step 4
  - Scaffold controller – has gotten smarter



The screenshot shows the 'Add Controller' dialog box with the following configuration:

- Controller name: HomeController
- Scaffolding options:
  - Template: Controller with read/write actions and views, using Entity Framework
  - Model class: Product (MvcApplication1.Models)
  - Data context class: NorthwindEntities (MvcApplication1.Models)
- Views: ASPX (C#)

Buttons: Add, Cancel, Advanced Options...

# Database First App Demo

- Step 5
  - Create repository classes
  - Fixup controller class to use repository classes

# Database First App Demo

- Step 6

- Add validation using attributes in partial class

```
MetadataType(typeof(Product_Validation))]
public partial class Product
{
}

public class Product_Validation
{
    [Required(ErrorMessage = "Product Name required.")]
    [StringLength(40,
        ErrorMessage = "Must be 40 characters or less.")]
    public string ProductName { get; set; }
    ...
}
```

# Database First App Demo

- Step 7
  - Add remote validation

```
Remote("ValidateProductName", "Home",  
    AdditionalFields = "ProductID",  
    ErrorMessage = "A product with this name  
    already exists. Product names must be unique.")]  
public string ProductName { get; set; }
```

# DB First vs. Code First Development

- This session showed you how to use MVC using a database-first approach.
- If you are interested in code-first development using entity framework, please consider attending my EF4.1/CodeFirst talk Friday at 13:30.

# Resources

- <http://asp.net/mvc>
  - Starting place for everything on ASP.NET MVC
- <http://weblogs.asp.net/scottgu/>
  - Msft Genius Dev Leader Scott Guthrie's blog
- <http://hanselman.com/blog/>
  - Msft Community Guru Scott Hanselman's blog
- <http://blogs.msdn.com/adonet/>
  - ADO.NET Team blog on EF

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