

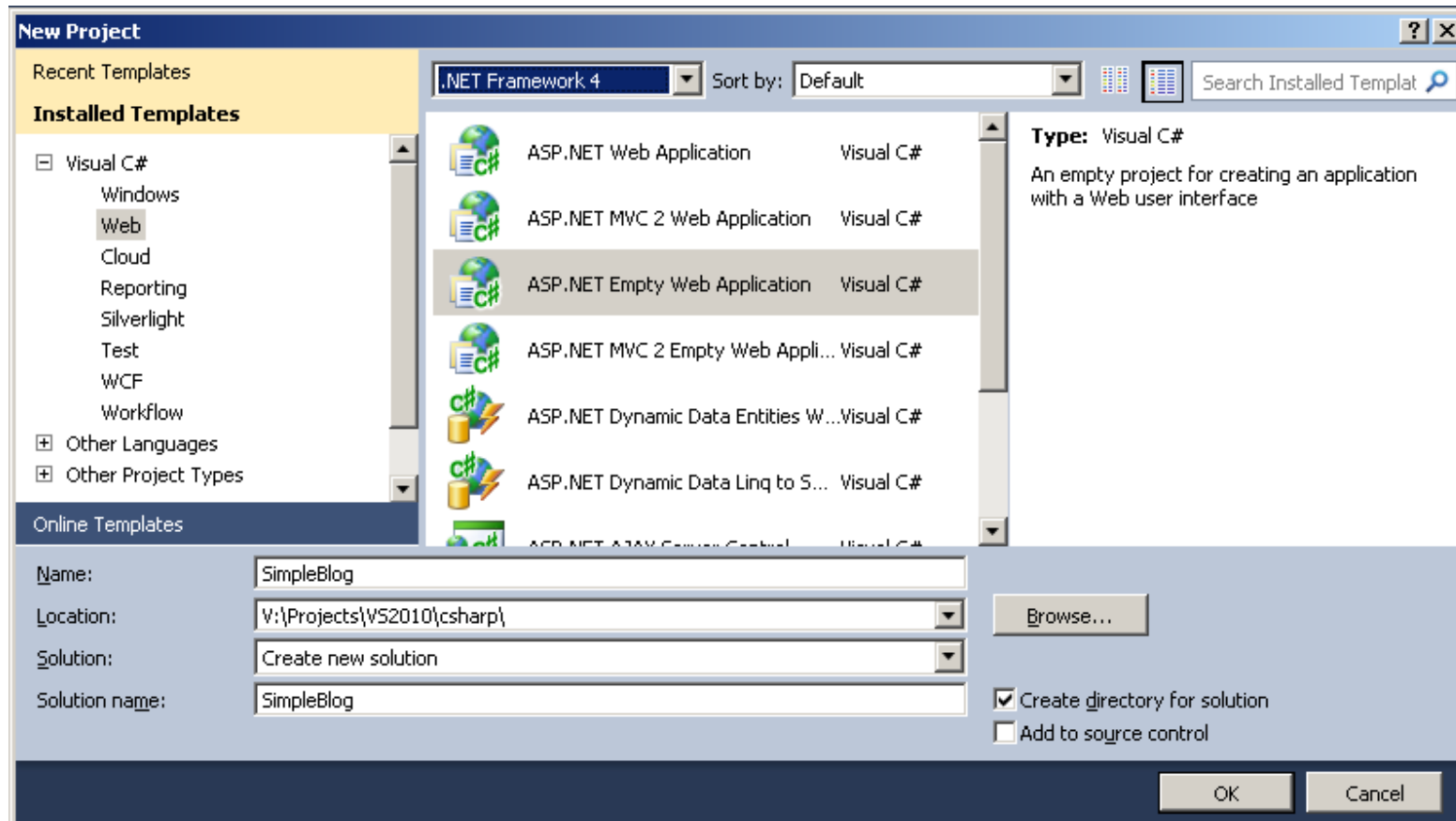
# .NET Web Applications

Example Project  
Walk-Through

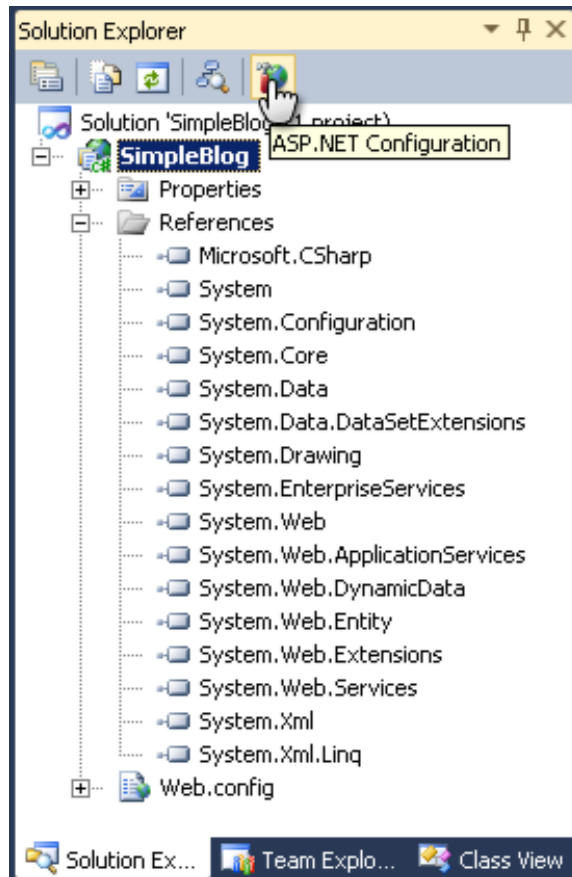
# Simple Blog

- Project Goals -
  - Introduce .NET web application development concepts
  - Explore the Visual Studio and ASP.NET web site building process
  - Demonstrate the steps used to create an basic ASP.NET web application

# Create the Project



# Empty Project



- The web.config file is important
- The ASP.NET Configuration tool should be your first visit

# ASP.NET Configuration

The screenshot shows the ASP.NET Web Site Administration Tool interface. At the top, there is a header bar with the Microsoft ASP.NET logo and the text "Web Site Administration Tool". To the right of the header, there is a link "How do I use this tool?" and a question mark icon. Below the header, there is a navigation bar with four tabs: "Home", "Security", "Application", and "Provider". The "Home" tab is currently selected. Below the navigation bar, the main content area displays the following information:

**Welcome to the Web Site Administration Tool**

**Application: /**  
**Current User Name: PINK\BLUEBOY**

<a href="#">Security</a>	Enables you to set up and edit users, roles, and access permissions for your site. Site is using windows authentication for user management.
<a href="#">Application Configuration</a>	Enables you to manage your application's configuration settings.
<a href="#">Provider Configuration</a>	Enables you to specify where and how to store administration data used by your Web site.

The interface is styled with a blue and white color scheme. The header and navigation bar are blue, while the main content area is white. A yellow horizontal bar is visible at the bottom of the screenshot.

# Security Wizard

## Security Setup Wizard

- Step 1: Welcome**
- Step 2: Select Access Method
- Step 3: Data Store
- Step 4: Define Roles
- Step 5: Add New Users
- Step 6: Add New Access Rules
- Step 7: Complete

---

[Security Management](#)

### Welcome to the Security Setup Wizard

This wizard helps you set up security for your Web site.

You can set up individual users and optionally set up roles, or groups, for those users. Creating users and roles allows you to secure all or portions of your site, personalize site content, and track usage of your site.

After establishing users and roles, you can then allow or deny access to specific folders in your application by user name or by role. You can also establish permissions for users who do not log in to your application (anonymous users).

Once you have completed the Security Setup Wizard, you can use Security Management option in the Web Site Administration Tool to make changes to your application's settings.

To continue, click Next.

< Back   Next >   Finish

# Internet vs Intranet

The screenshot shows a 'Security Setup Wizard' window. On the left is a blue sidebar with a list of steps: Step 1: Welcome, Step 2: Select Access Method (highlighted), Step 3: Data Store, Step 4: Define Roles, Step 5: Add New Users, Step 6: Add New Access Rules, and Step 7: Complete. At the bottom of the sidebar is a link for 'Security Management'. The main content area has a title 'Select Access Method:' followed by an explanatory paragraph. Below this is a paragraph instructing the user to select a method. There are two radio button options: 'From the internet' (selected) and 'From a local area network'. At the bottom right, there are three buttons: '< Back', 'Next >', and 'Finish'.

**Security Setup Wizard**

Step 1: Welcome  
**Step 2: Select Access Method**  
Step 3: Data Store  
Step 4: Define Roles  
Step 5: Add New Users  
Step 6: Add New Access Rules  
Step 7: Complete

[Security Management](#)

**Select Access Method:**

The first step in securing your site is to identify users (authentication). The method for establishing a user's identity depends on how the user accesses your site.

Select one of the following methods to indicate how users will access your site, and then click Next.

**From the internet**  
Your application is a public site available to anyone on the Internet. Users can log in to your application by entering their user name and password in a login page you create.

**From a local area network**  
Your application runs in a private local area network (intranet) only. Users are identified by their Windows domain and user name and do not have to log in to your application explicitly.

< Back   Next >   Finish

# Enabling Roles

## Security Setup Wizard

- Step 1: Welcome
- Step 2: Select Access Method
- Step 3: Data Store
- Step 4: Define Roles**
- Step 5: Add New Users
- Step 6: Add New Access Rules
- Step 7: Complete

[Security Management](#)

### Define Roles

You can optionally add roles, or groups, that enable you to allow or deny groups of users access to specific folders in your Web site. For example, you might create roles such as "managers," "sales," or "members," each with different access to specific folders. Later, you can add users to roles and users will have the access permissions associated with those roles.

Type the name of the role that you want to create and click Add Role.

If you do not want to create roles, please ensure that the checkbox below is unchecked and click Next to skip this step.

Enable roles for this Web site.

< Back   **Next >**   Finish



# Adding Roles

## Security Setup Wizard

- Step 1: Welcome
- Step 2: Select Access Method
- Step 3: Data Store
- Step 4: Define Roles
- Step 5: Add New Users
- Step 6: Add New Access Rules
- Step 7: Complete

[Security Management](#)

You have enabled roles for this web site.  
open

### Create New Role

New Role Name:

### Existing Roles

admin	<a href="#">Delete</a>
member	<a href="#">Delete</a>

# Adding Users

## Security Setup Wizard

- Step 1: Welcome
- Step 2: Select Access Method
- Step 3: Data Store
- Step 4: Define Roles
- Step 5: Add New Users**
- Step 6: Add New Access Rules
- Step 7: Complete

[Security Management](#)

Add a user by entering the user's ID, password, and e-mail on this page. You can also specify a question with an answer that the user must give when resetting a password or requesting a forgotten password.

### Create User

Sign Up for Your New Account

User Name:

Password:

Confirm Password:

E-mail:

Security Question:

Security Answer:

Active User

< Back   Next >   Finish

# Default Access Rules

### Security Setup Wizard

- Step 1: Welcome
- Step 2: Select Access Method
- Step 3: Data Store
- Step 4: Define Roles
- Step 5: Add New Users**
- Step 6: Add New Access Rules**
- Step 7: Complete

[Security Management](#)

### Add New Access Rules

You can optionally add access rules to control access to the whole Web site or to individual folders. Rules can apply to specific users and roles, to all users, to anonymous users, or to some combination of these. Rules apply to subfolders.

To add a new access rule, select the site name or a folder to set a rule for. Then select the users or roles the rule applies to and select Allow or Deny.

If you define multiple rules, they are applied in the order shown in the table. The first rule that matches applies. You will be able to add, remove, modify, and reorder your rules later.

### Add New Access Rule

Select a directory for this rule:

Rule applies to:

Permission:

Role  User  All Users  Anonymous Users

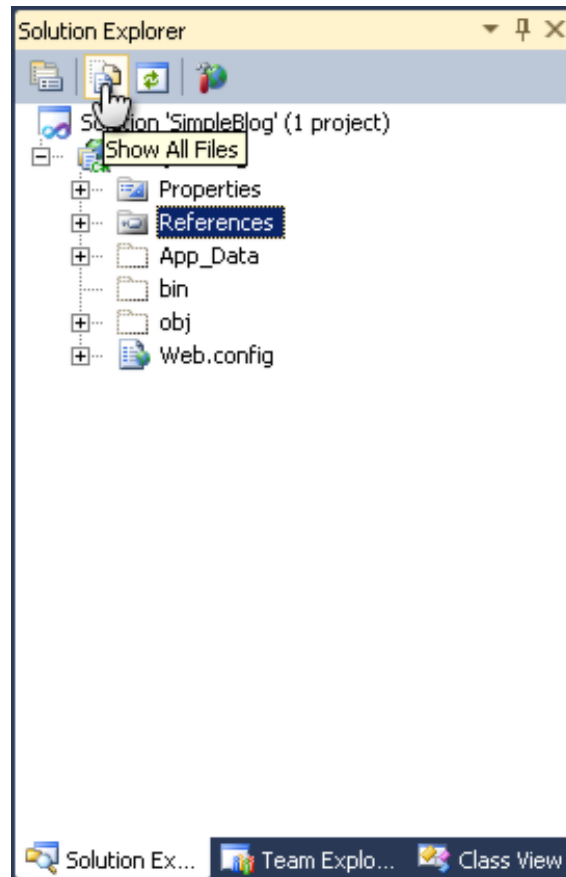
Allow  Deny

[Search for users](#)

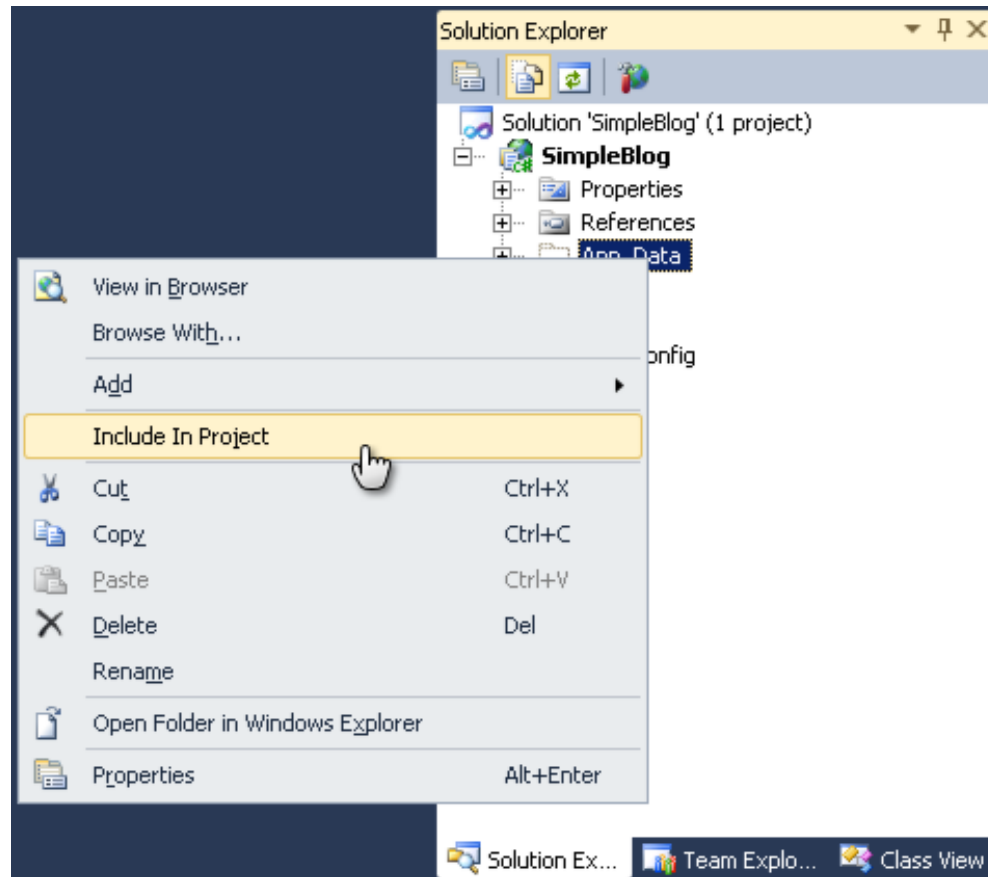
Rules that appear dimmed are inherited from the parent and cannot be changed at this level.

Permission	Users And Roles	Delete
Allow	[all]	Delete

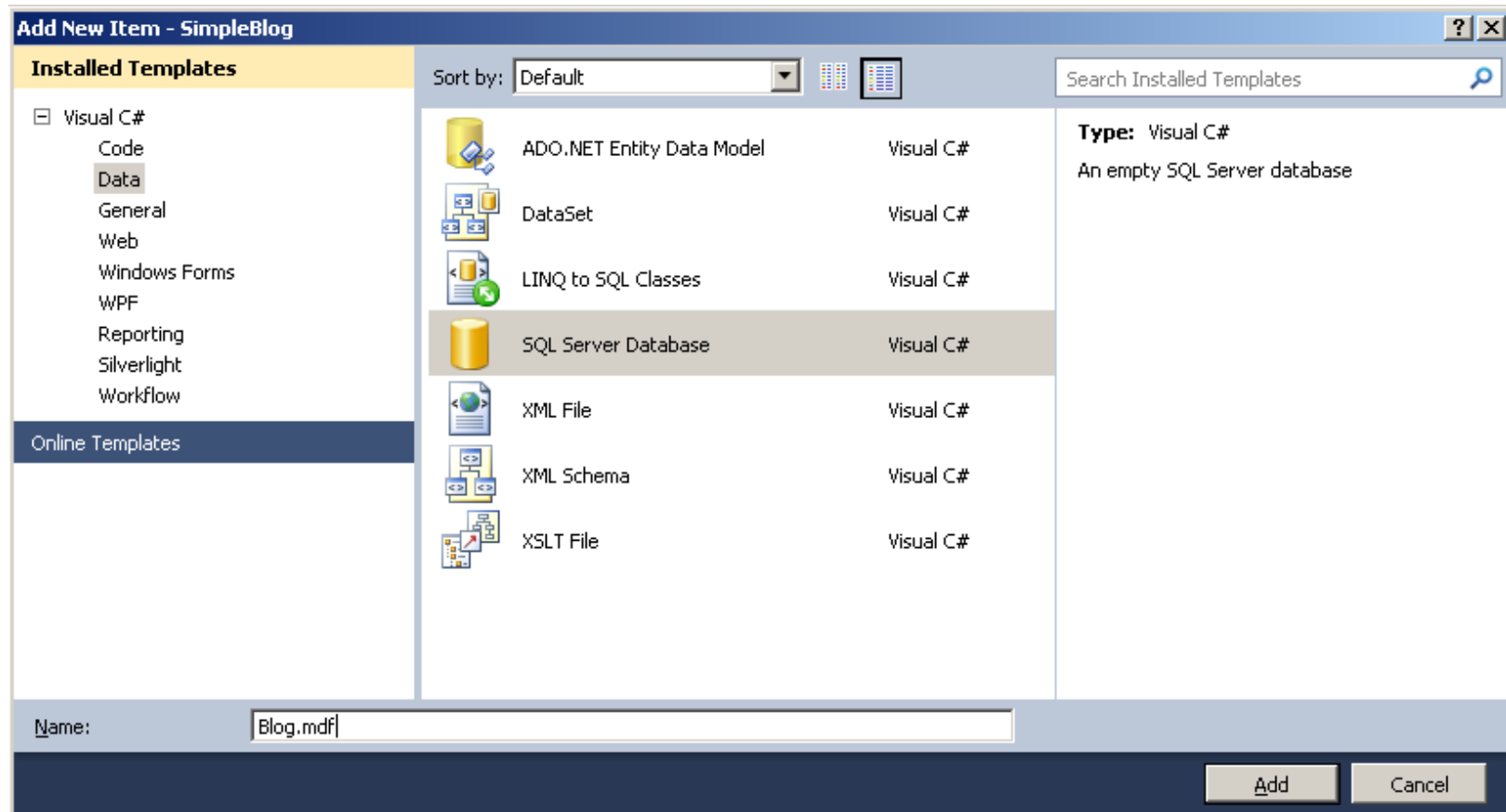
# Show the App\_Data Folder



# Include In Project?

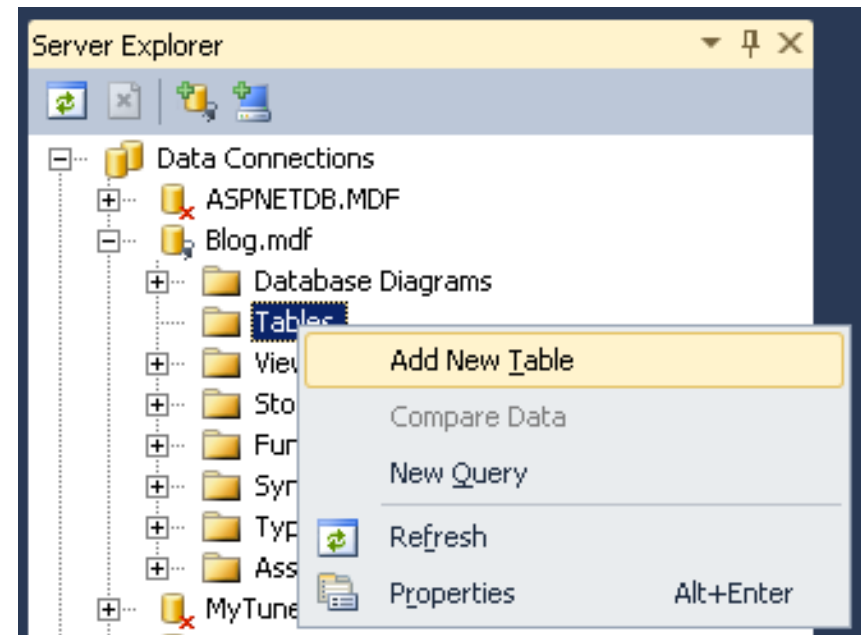


# Create the Database

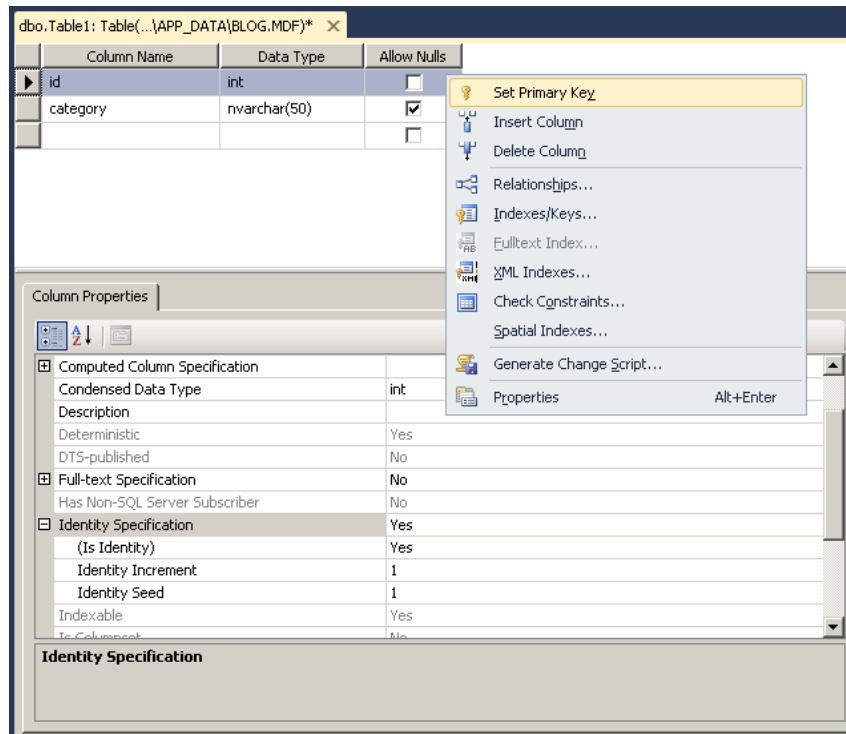


# Add Table to Database

- First, double-click Blog.mdf to open it in the Server Explorer
- Right-click to add a new table



# The Category table

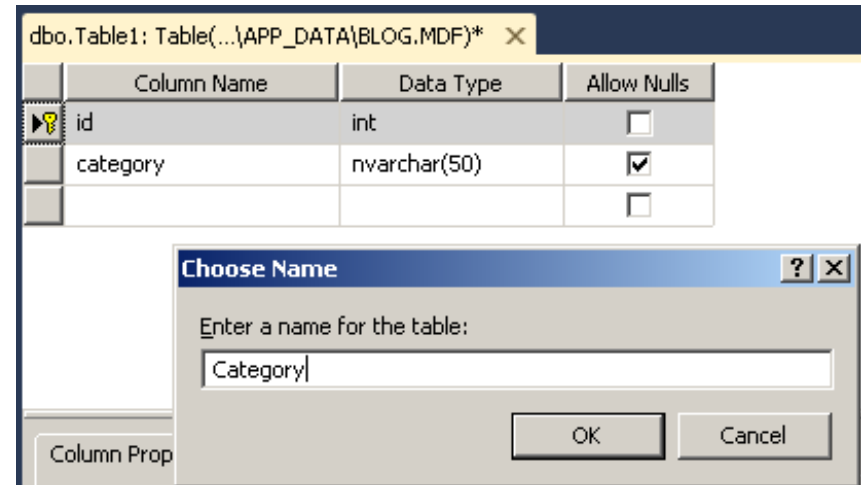


- Add two columns as shown to the left
- The Identity options require a numeric column type
- In general, all tables should have a unique primary key

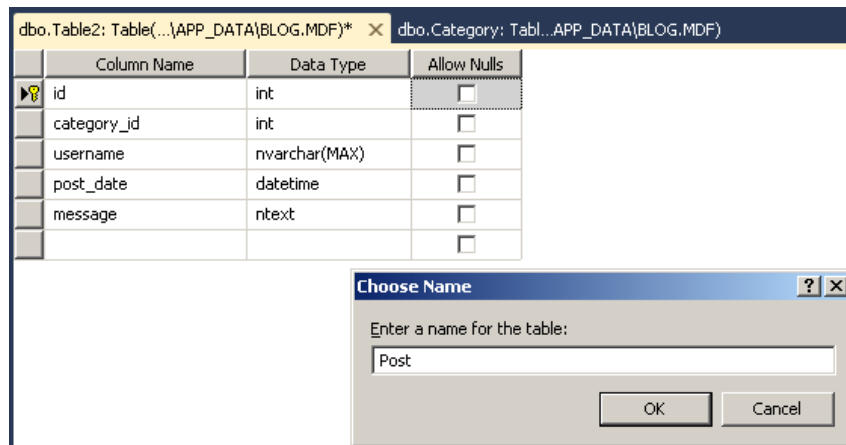


# Save the Table

- You will be prompted to name the table when you save it



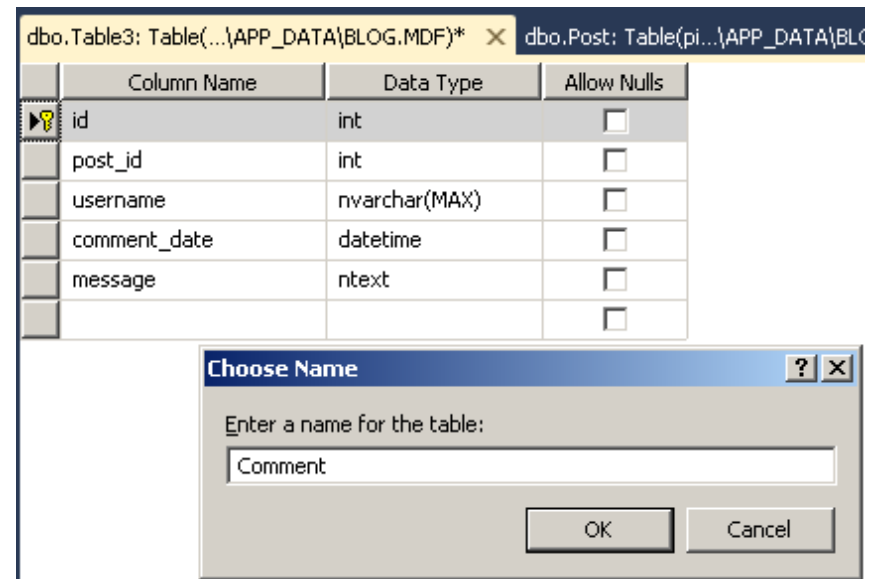
# Create the Post Table



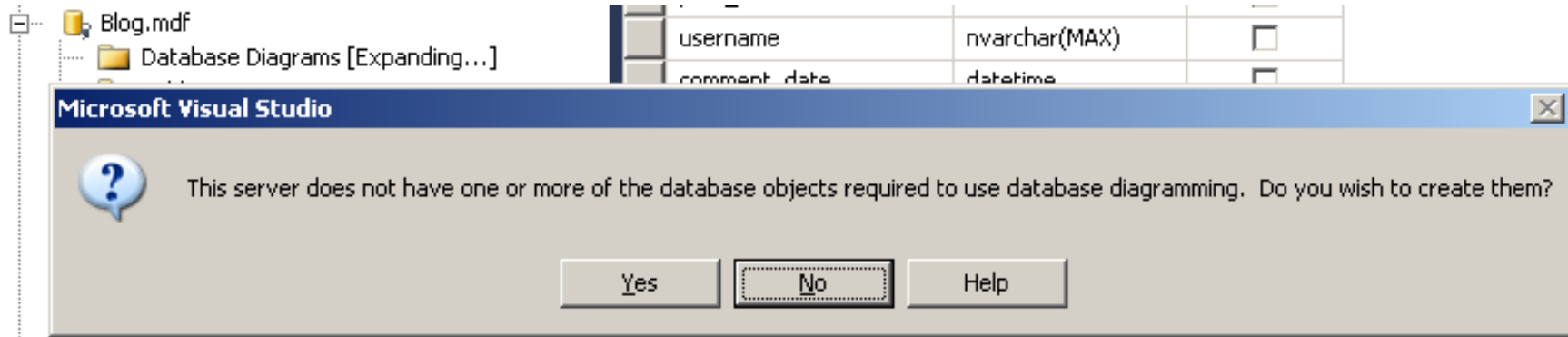
- Use the image to the left to create the Post table
- This will be used to hold the top-level blog posts

# Create the Comment Table

- Add one more table to hold comments made to existing posts
- The `post_id` column will reference the Post record this comment was made against

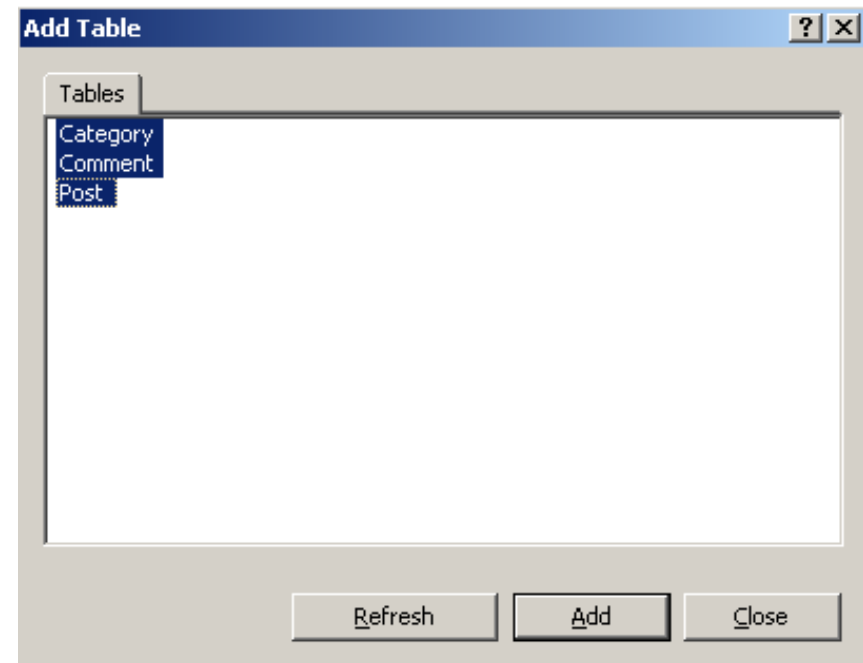
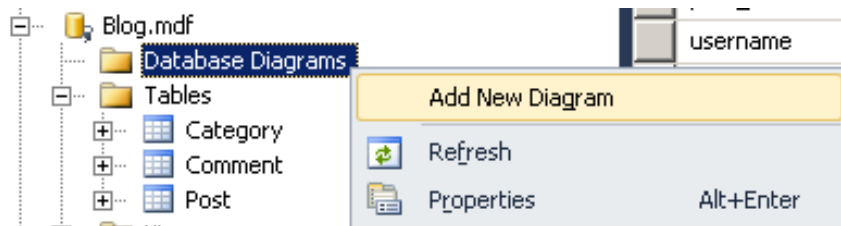


# Database Diagrams

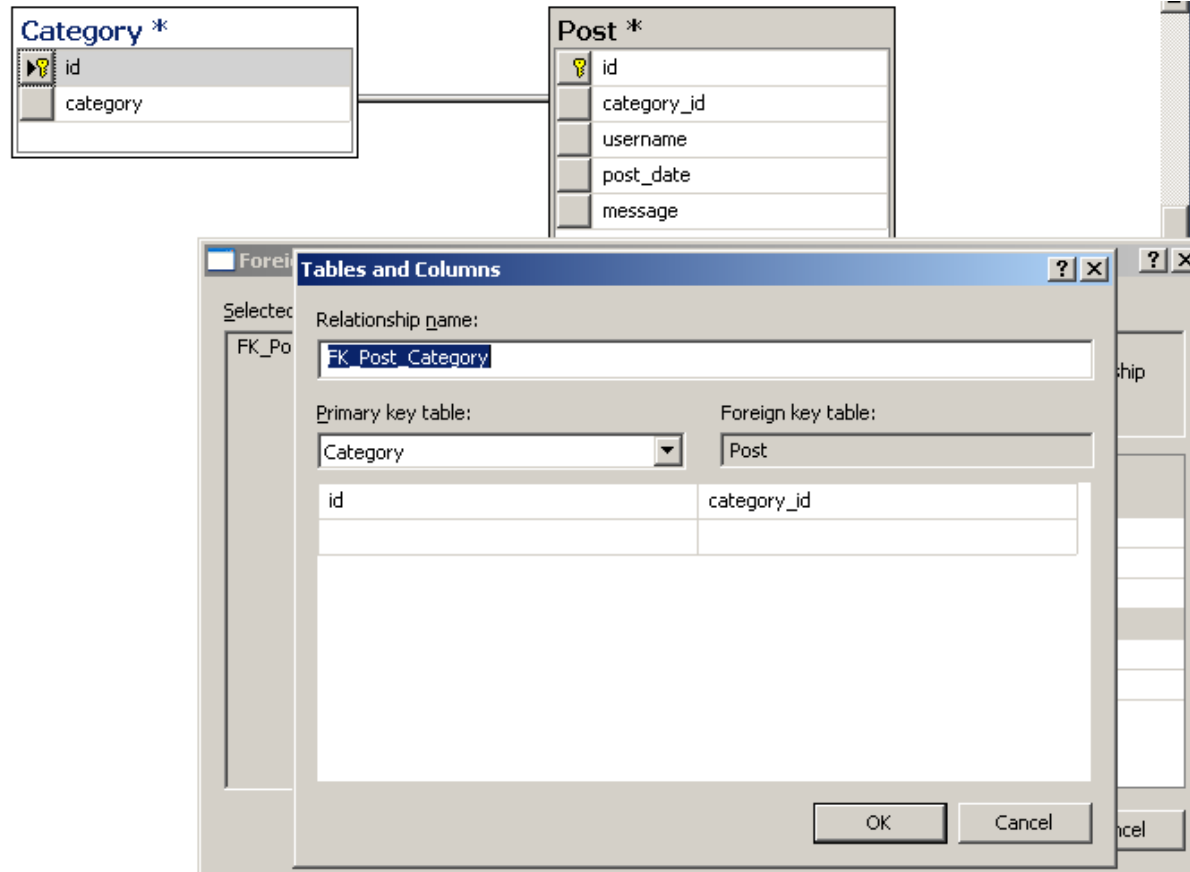


- Table relationships are defined using Database Diagrams
- Expand the Database Diagrams branch and answer **Yes** to this question

# Add Diagram and Select Tables



# Drag and Drop to Create New Relationships



# Relationship Options

Foreign Key Relationship

Selected Relationship:  
FK\_Post\_Category\*

Editing properties for new relationship. The 'Tables And Columns Specification' property needs to be filled in before the new relationship will be accepted.

**(General)**

Check Existing Data On Creation Or	Yes
<b>Tables And Columns Specification</b>	
Foreign Key Base Table	Post
Foreign Key Columns	category_id
Primary/Unique Key Base Table	Category
Primary/Unique Key Columns	id

**Database Designer**

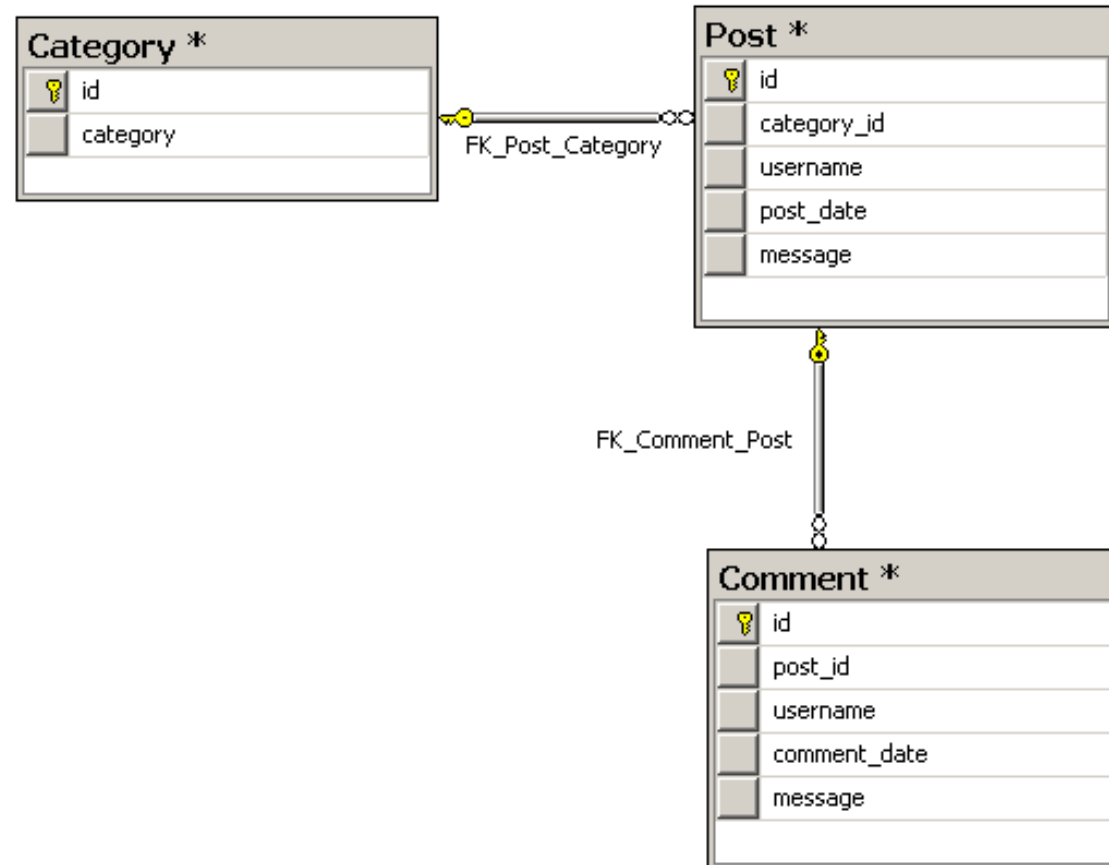
Enforce For Replication	Yes
Enforce Foreign Key Constraint	Yes
<b>INSERT And UPDATE Specification</b>	
Delete Rule	No Action
Update Rule	No Action

**Identity**

(Name)	FK_Post_Category
Description	One-to-many relationship

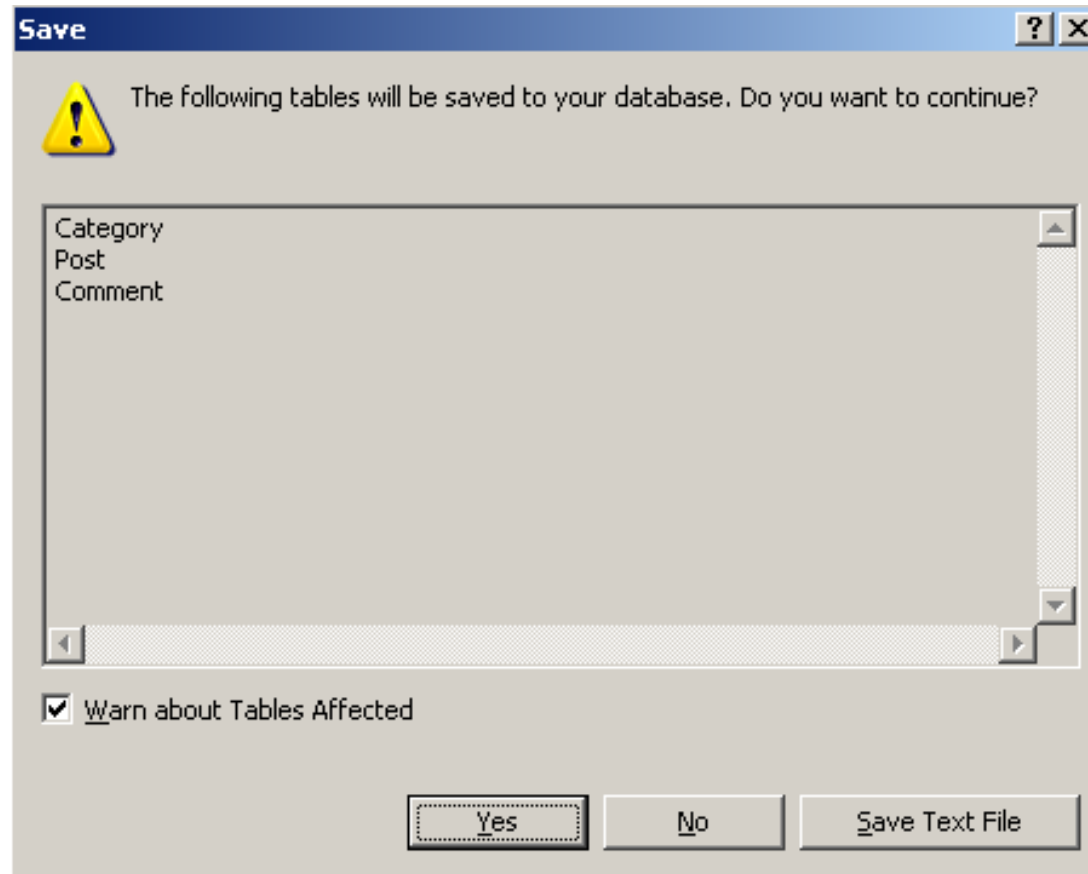
OK Cancel

# Final Relationship Diagram

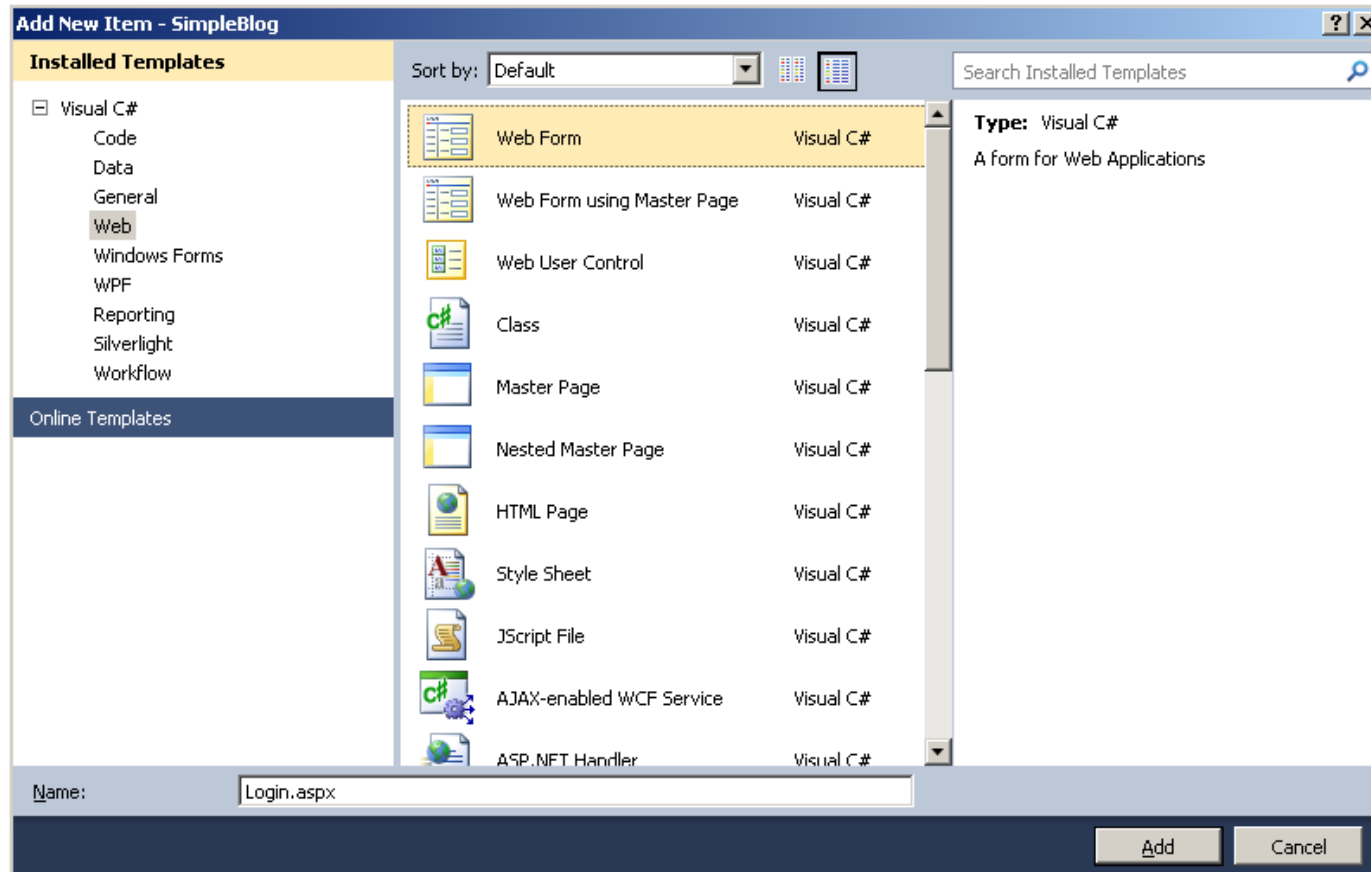




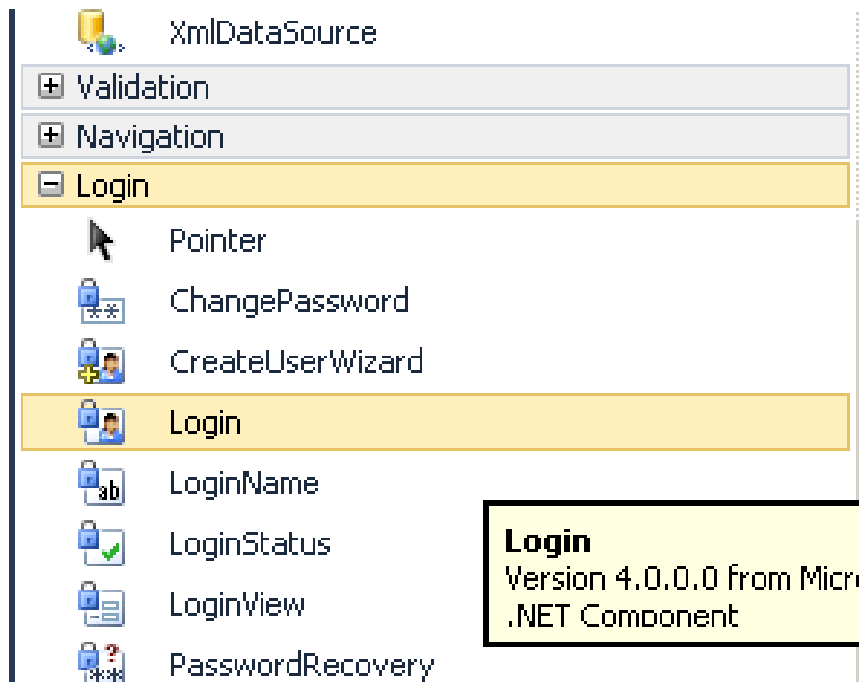
# Save Diagram to Update Schema



# Add Login.aspx Page



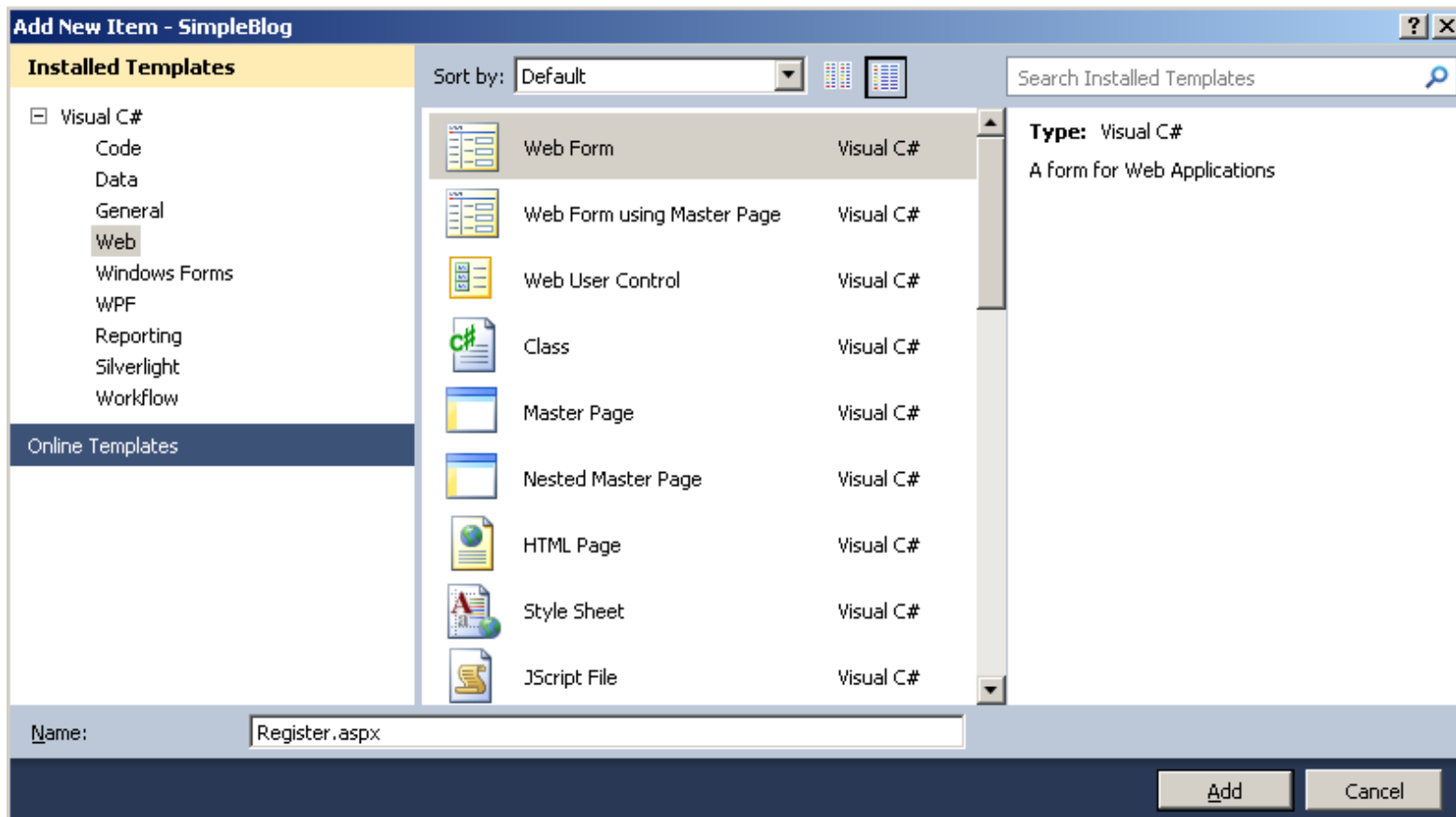
# Add Login Control to Page



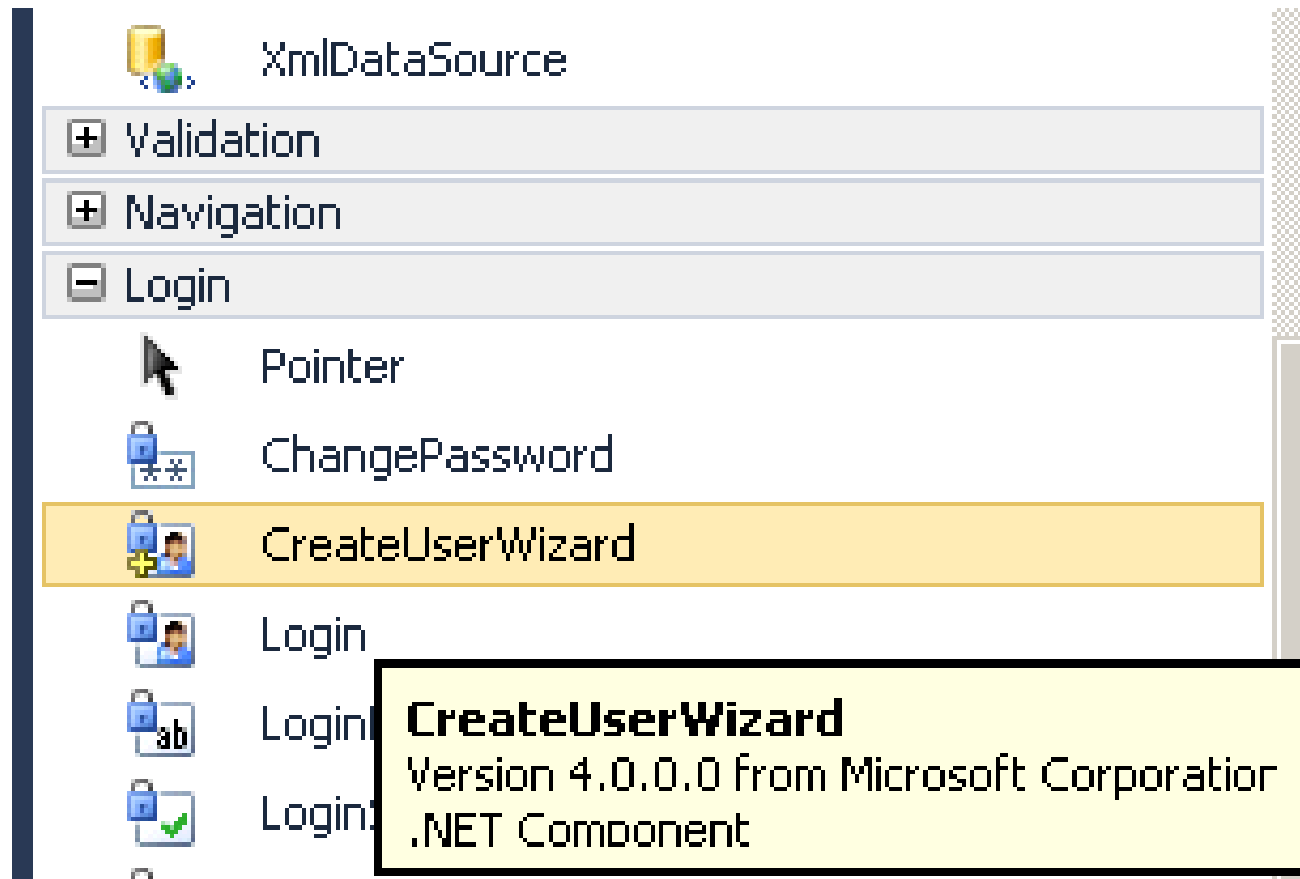
- Add the following code before the Login control:

```
<p>  
    Please enter your username and password.  
  
    <asp:HyperLink ID="RegisterHyperLink"  
runat="server"  
EnableViewState="false">Register</asp:HyperLink>  
  
    if you don't have an account.  
</p>
```

# Add Register.aspx Page



# Add CreateUserWizard to Register.aspx Page



# CreateUserWizard Tasks

The image shows a screenshot of a Visual Studio IDE. At the top, there are three tabs: 'Register.aspx\*', 'Login.aspx.cs', and 'Login.aspx\*'. The active window is 'asp:createuserwizard#CreateUserWiz...'. The main content area displays a 'Sign Up for Your New Account' form with the following fields, each with an asterisk indicating it is required:

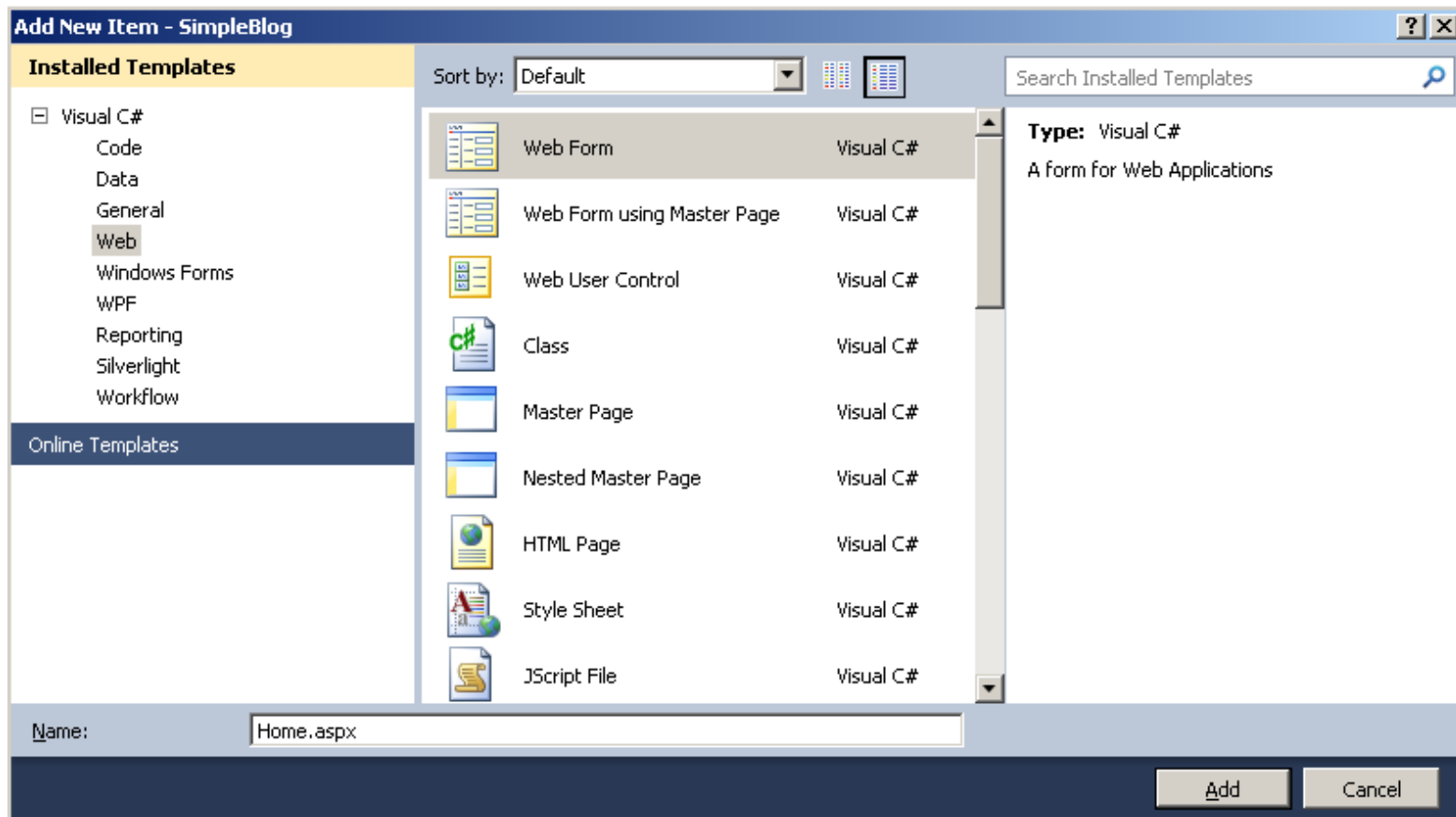
- User Name:
- Password:
- Confirm Password:
- E-mail:
- Security Question:
- Security Answer:

Below the fields, there is a message: 'The Password and Confirmation Password must match.' At the bottom of the form is a 'Create User' button.

On the right side, the 'CreateUserWizard Tasks' pane is open. It contains the following tasks:

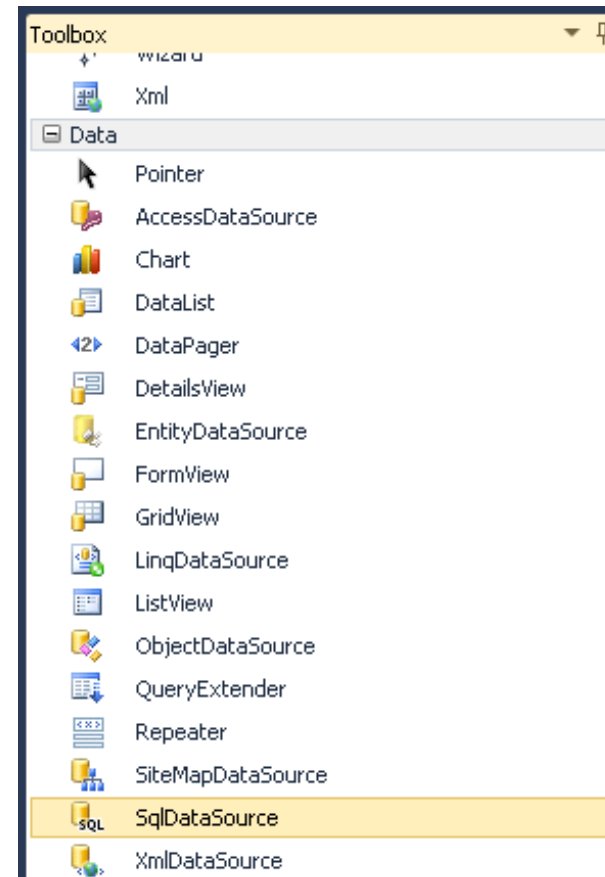
- Auto Format...
- Step: **Sign Up for Your New** (dropdown menu)
- Add/Remove WizardSteps...
- Convert to StartNavigationTemplate
- Convert to StepNavigationTemplate
- Convert to FinishNavigationTemplate
- Convert to CustomNavigationTemplate
- Customize Create User Step
- Customize Complete Step
- Administer Website
- Edit Templates

# Add Home.aspx Page



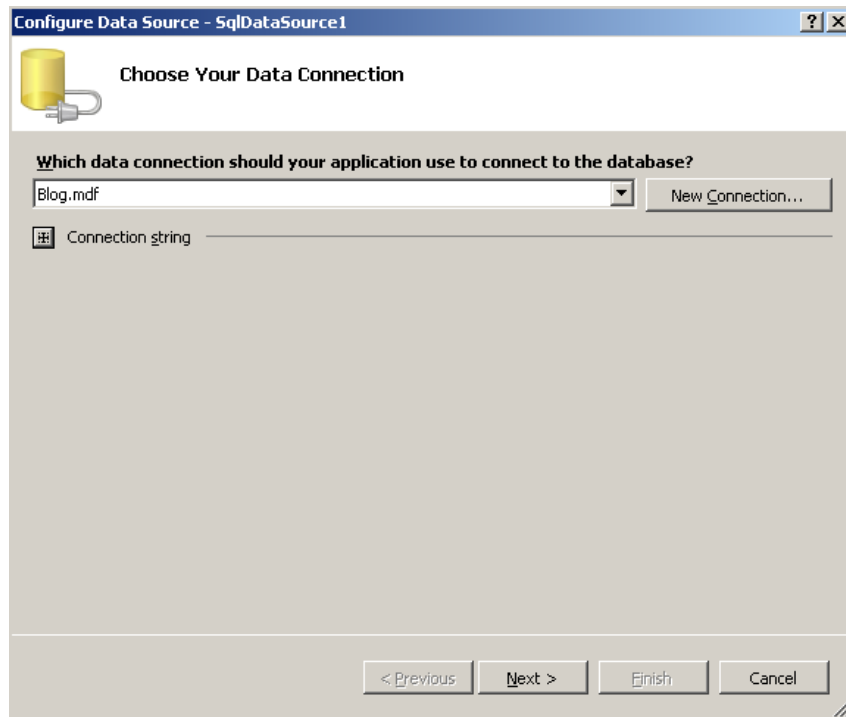
# Add DataSource to Home.aspx

- Next, add an SqlDataSource object
- We will use this to setup data binding shortly





# Setup Database Connection



**Configure Data Source - SqlDataSource1**

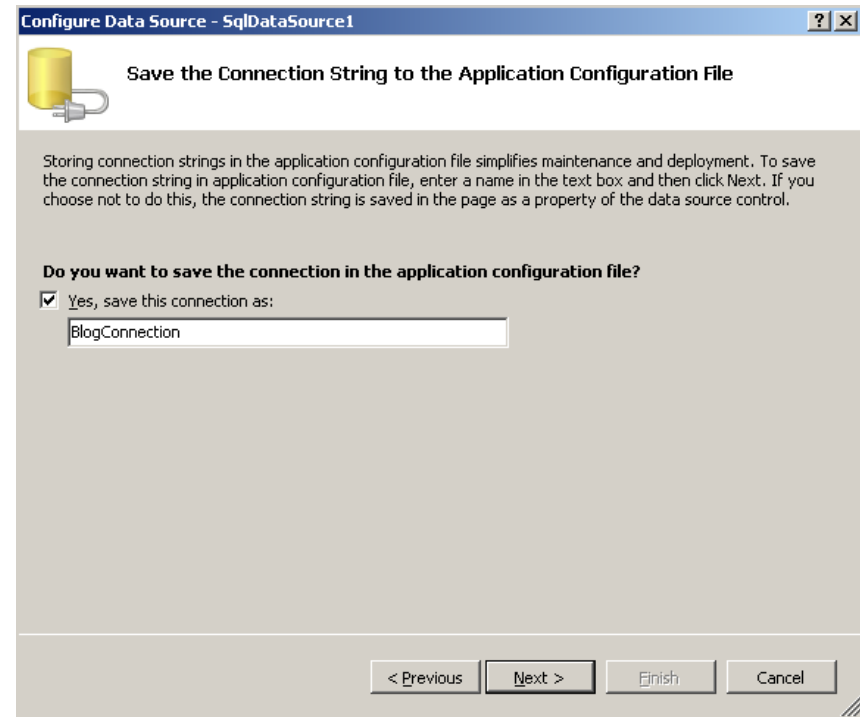
**Choose Your Data Connection**

**Which data connection should your application use to connect to the database?**

Blog.mdf

Connection string

< Previous   Next >   Finish   Cancel



**Configure Data Source - SqlDataSource1**

**Save the Connection String to the Application Configuration File**

Storing connection strings in the application configuration file simplifies maintenance and deployment. To save the connection string in application configuration file, enter a name in the text box and then click Next. If you choose not to do this, the connection string is saved in the page as a property of the data source control.

**Do you want to save the connection in the application configuration file?**


Yes, save this connection as:

BlogConnection

< Previous   Next >   Finish   Cancel

# Select and Test Data

Configure Data Source - SqlDataSource1

 **Configure the Select Statement**

How would you like to retrieve data from your database?

Specify a custom SQL statement or stored procedure

Specify columns from a table or view

Name:  
Category

Columns:

\*  
 id  
 category

Return only unique rows

WHERE...


ORDER BY...

Advanced...

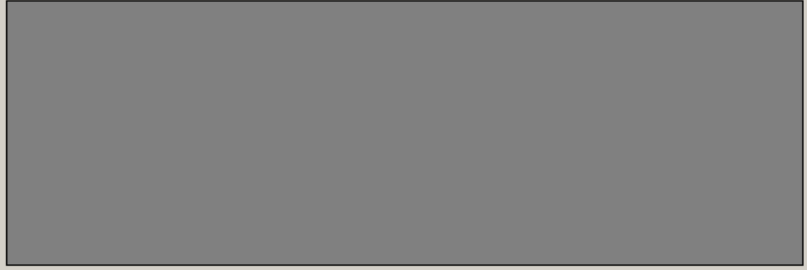
SELECT statement:  
SELECT \* FROM [Category]

< Previous   Next >   Finish   Cancel

Configure Data Source - SqlDataSource1

 **Test Query**

To preview the data returned by this data source, click Test Query. To complete this wizard, click Finish.



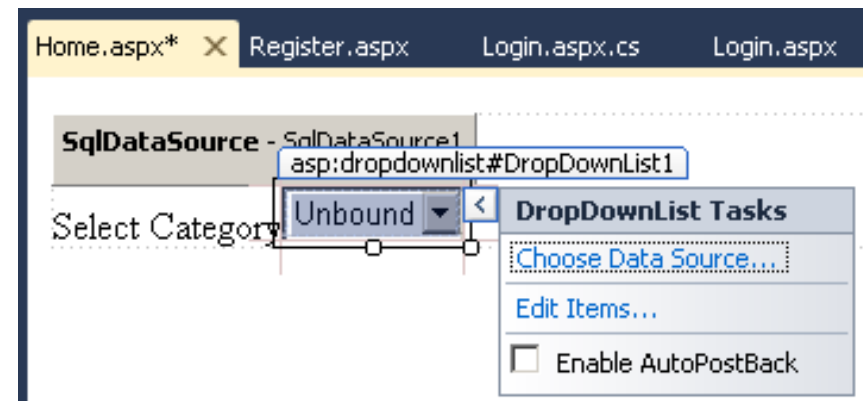
Test Query

SELECT statement:  
SELECT \* FROM [Category]

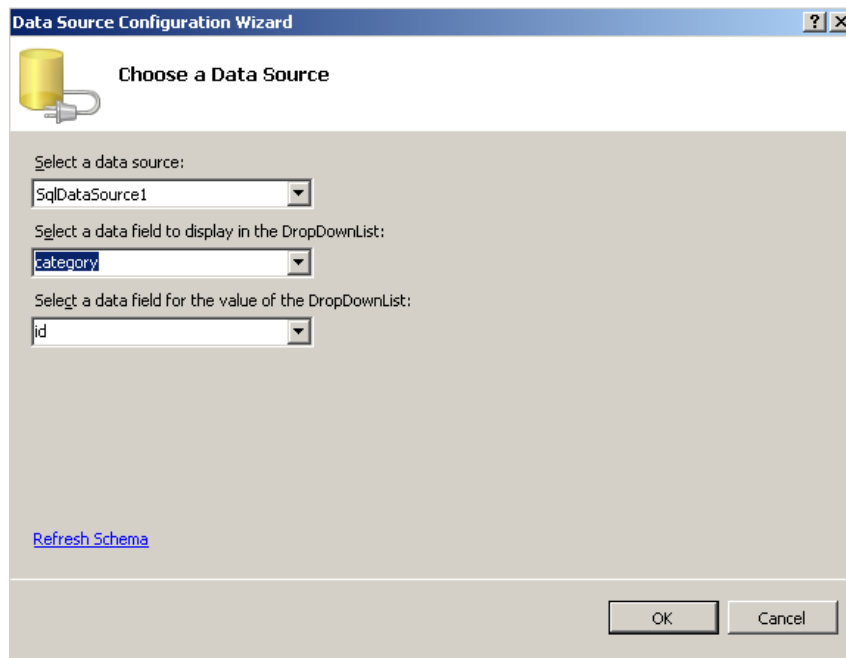
< Previous   Next >   Finish   Cancel

# Home Page: Step 1

- Add a Literal and a DropDownList control
- Select the Choose Data Source... task to proceed



# Home Page: Step 2



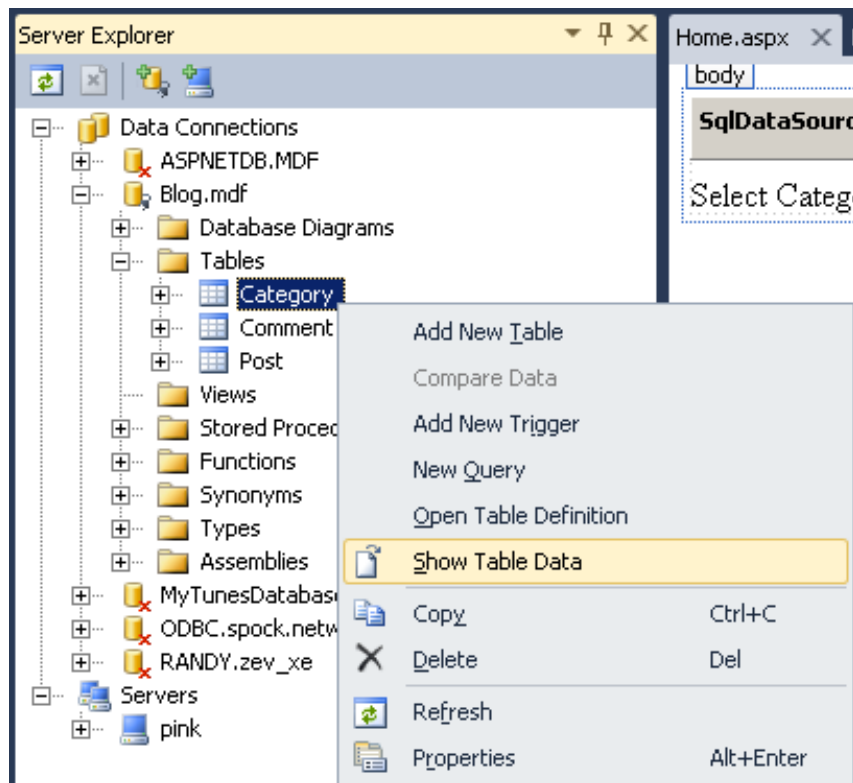
- Select our existing DataSource
- Display the category field
- Use the id field

# Running Home.aspx

- Home.aspx is incomplete
- We need to add some categories
- A new web page should be created
- Let's add some records manually

Select Category

# Adding Category Records

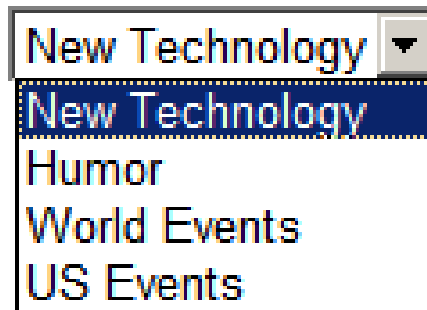


Category: Query(pi...APP\_DATA)\BLOG.MDF) X

	id	category
	1	New Technology
	2	Humor
	3	World Events
	4	US Events
▶*	NULL	NULL

# Home Page with Categories

Select Category



New Technology  
New Technology  
Humor  
World Events  
US Events

- Drop-down list is auto-populated at runtime
- Connecting data to controls is called Data Binding
- SQL databases are the most common data source

# Adding a GridView

Home.aspx\* x Register.aspx Login.aspx.cs Login.aspx

SqlDataSource - CategoryDataSource

asp:gridview#GridView1

Column0	Column1	Column2
abc	abc	abc
abc	abc	abc
abc	abc	abc
abc	abc	abc
abc	abc	abc

**GridView Tasks**

- Auto Format...
- Choose Data Source: (None)
- Edit Columns...
- Add New Column...
- Edit Templates

Dropdown menu options: (None), CategoryDataSource, <New data source...>

Data Source Configuration Wizard

Choose a Data Source Type

Where will the application get data from?

Access Database, SQL Database, Entity, LINQ, Object, Site Map, XML File

Connect to any SQL database supported by ADO.NET, such as Microsoft SQL Server, Oracle, or OLEDB.

Specify an ID for the data source:

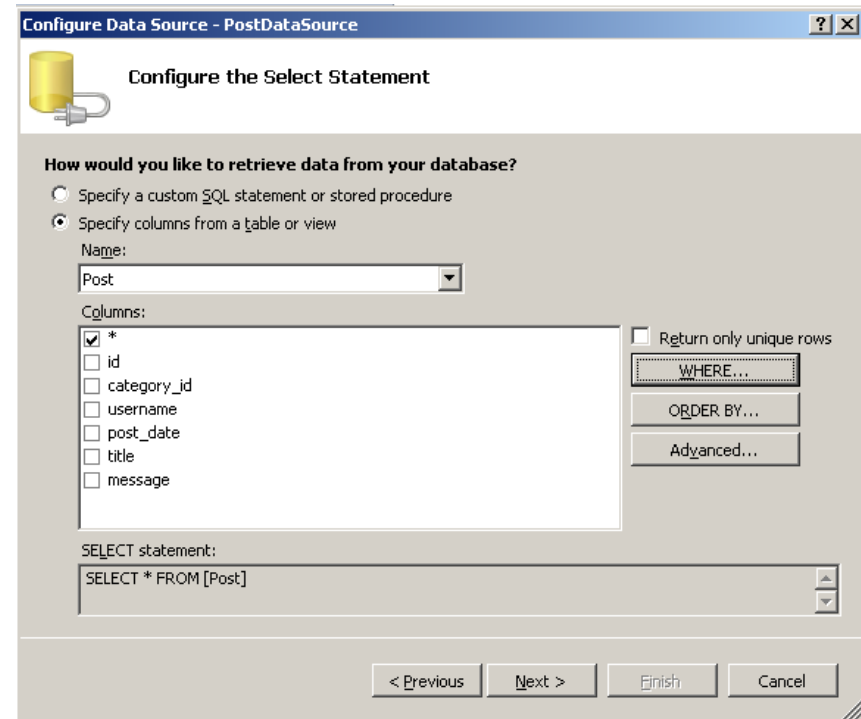
PostDataSource

OK Cancel



# Setup Post Data Source

- Select the Post table using the BlogConnection
- Click the WHERE... button next



# Filter by Selected Category

Add one or more conditions to the WHERE clause for the statement. For each condition you can specify either a literal value or a parameterized value. Parameterized values get their values at runtime based on their properties.

Column: category\_id

Operator: =

Source: Control

SQL Expression: [category\_id] = @category\_id

Value: CategoryList.Selectedvalue

Parameter properties

Control ID: CategoryList

Default value: 1

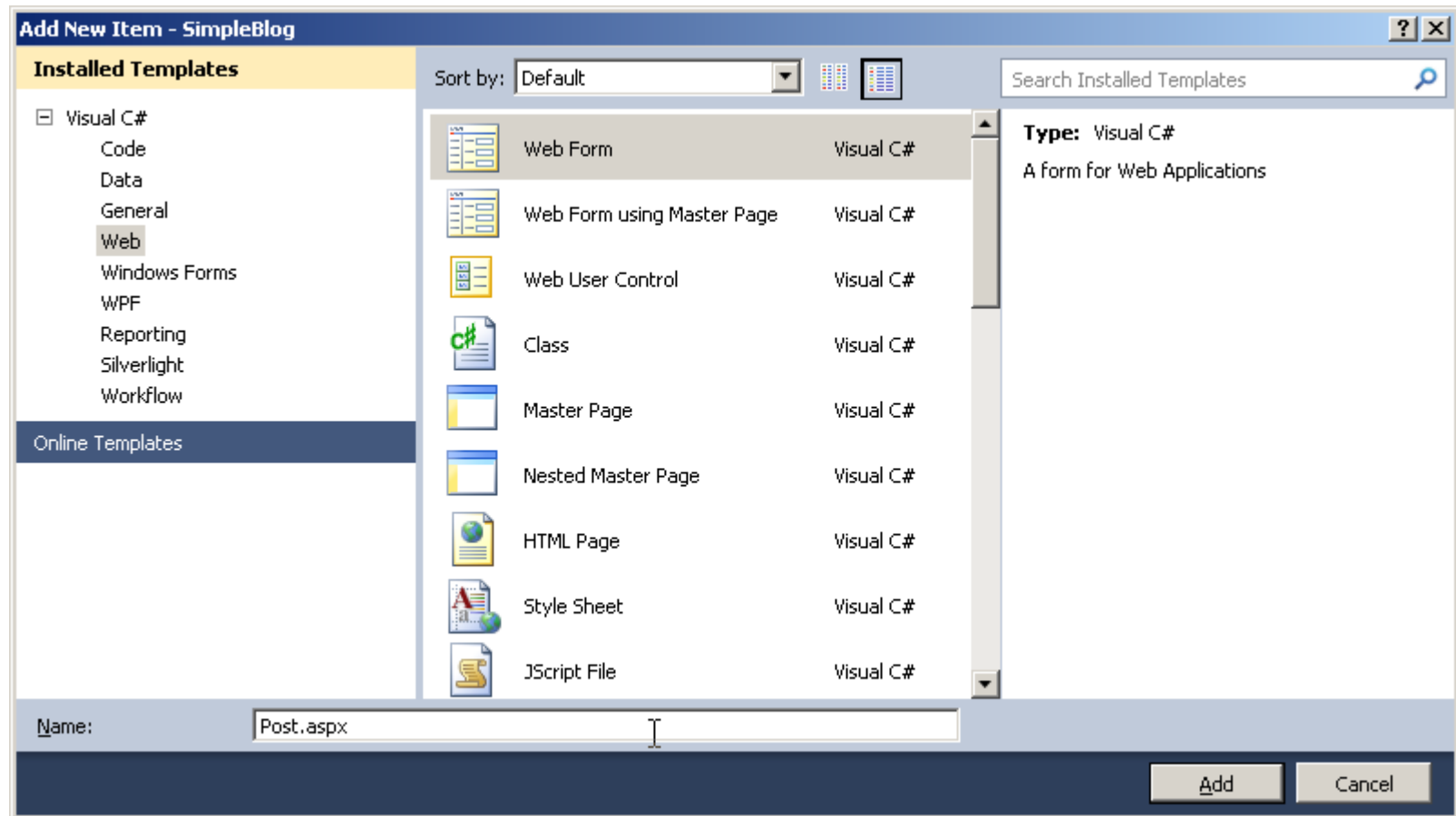
WHERE clause:

SQL Expression	Value

Buttons: Add, Remove, OK, Cancel

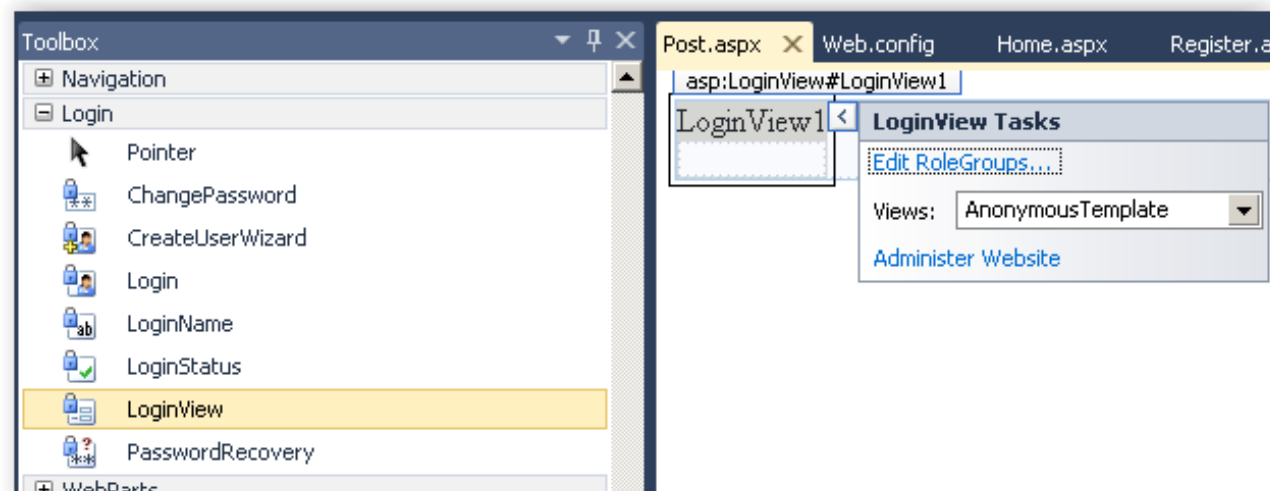
- Setup this up as shown here.
- Click the Add button before closing the dialog.

# Post New Entry

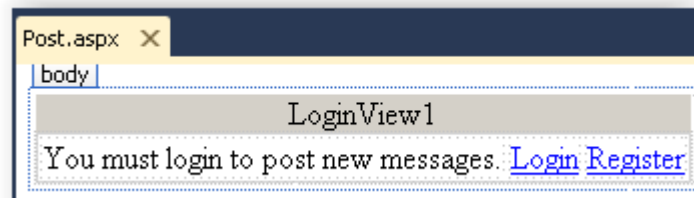


# Add a LoginView

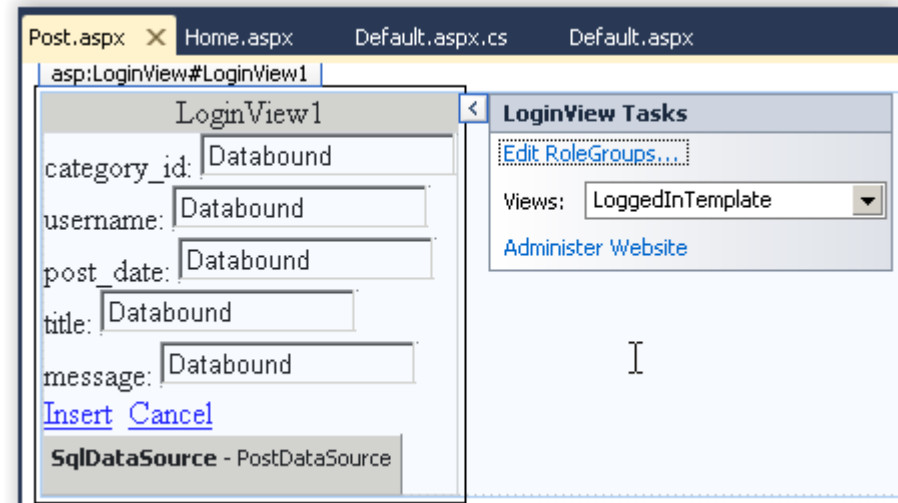
- Group membership templates
- Anonymous and LoggedIn are defaults



# Post.aspx Contents

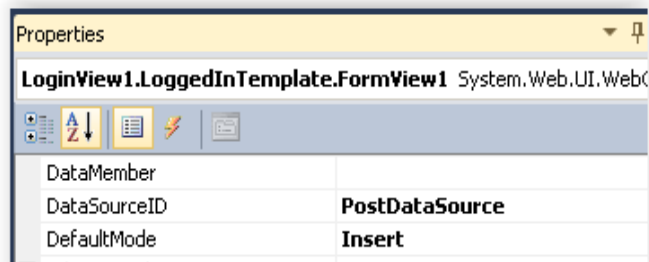


- AnonymousTemplate just says login first
- Add the HyperLink controls and set **NavigateUrl** properties

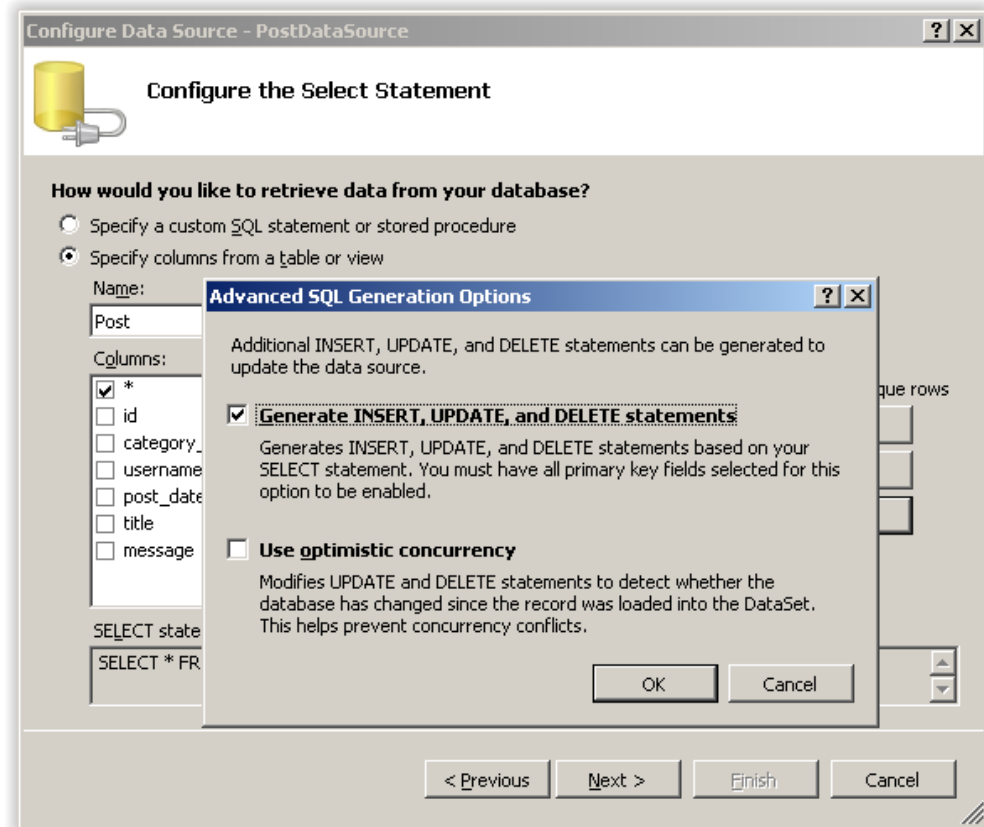


- Add a **FormView** and **SqlDataSource** to the LoggedInTemplate

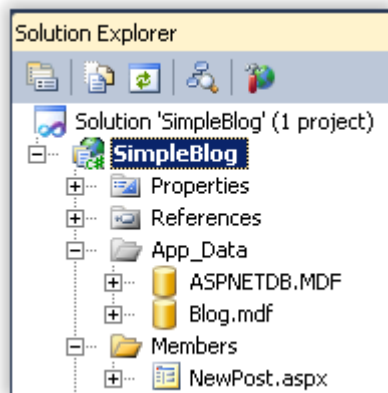
# Post.aspx Controls



- Set the FormView's **DefaultMode** to *Insert*
- Also generate SQL statements for the PostDataSource



# Security with Access Rules



- Add the Members folder
- NewPost.aspx is the same as Post.aspx, but without the LoginView

# Access to Members Folder

The screenshot shows the Microsoft ASP.NET Web Site Administration Tool interface. The title bar reads "ASP.NET Web Site Administration Tool" with a "How do I use this tool?" link and a question mark icon. Below the title bar are navigation tabs for "Home", "Security", "Application", and "Provider". The "Security" tab is active.

Instructions: "Use this page to manage access rules for your Web site. Rules are applied in order. The first rule that matches applies, and the permission in each rule overrides the permissions in all following rules. Use the **Move Up** and **Move Down** buttons to change the order of the selected rule."

Rules that appear dimmed are inherited from the parent and cannot be changed at this level.

**Manage Access Rules**

On the left is a tree view of the file system. The "Members" folder is selected and highlighted. Other folders visible include "App\_Data", "bin", "obj", "Debug", and "TempPE".

The main area displays a table of access rules for the "Members" folder:

Permission	Users and Roles	Delete
Allow	member	Delete
Allow	admin	Delete
Deny	[anonymous]	Delete
Allow	[all]	Delete

Below the table is a link: "Add new access rule".

On the right side of the table are two buttons: "Move Up" and "Move Down".

At the bottom right of the tool window is a "Done" button.