



Universiti
Malaysia
PAHANG
Engineering • Technology • Creativity

BCS 2203 | WEB APPLICATION DEVELOPMENT

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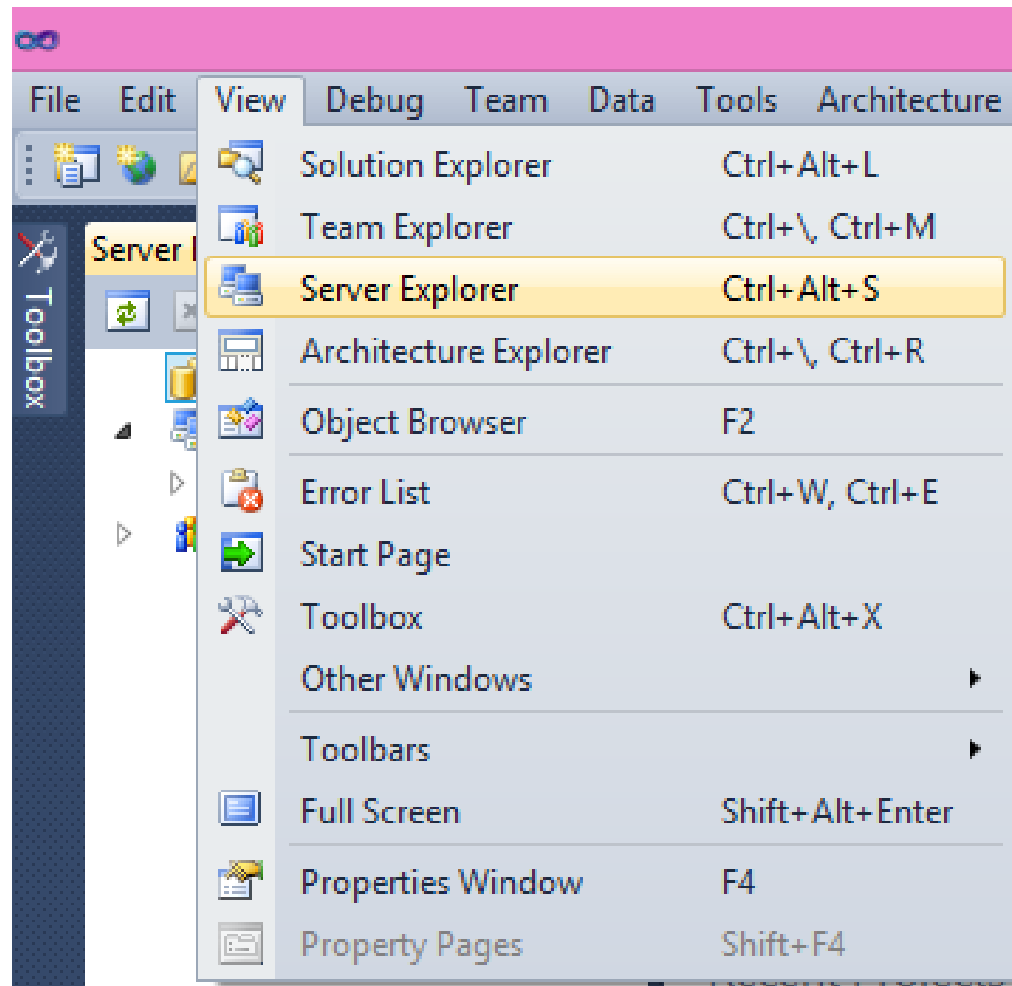
AL-FATIHAH

COURSE OUTCOMES

- Associating data web controls with data source controls
- Using the GridView and DetailsView controls
- Customizing the appearance of the GridView and DetailsView controls

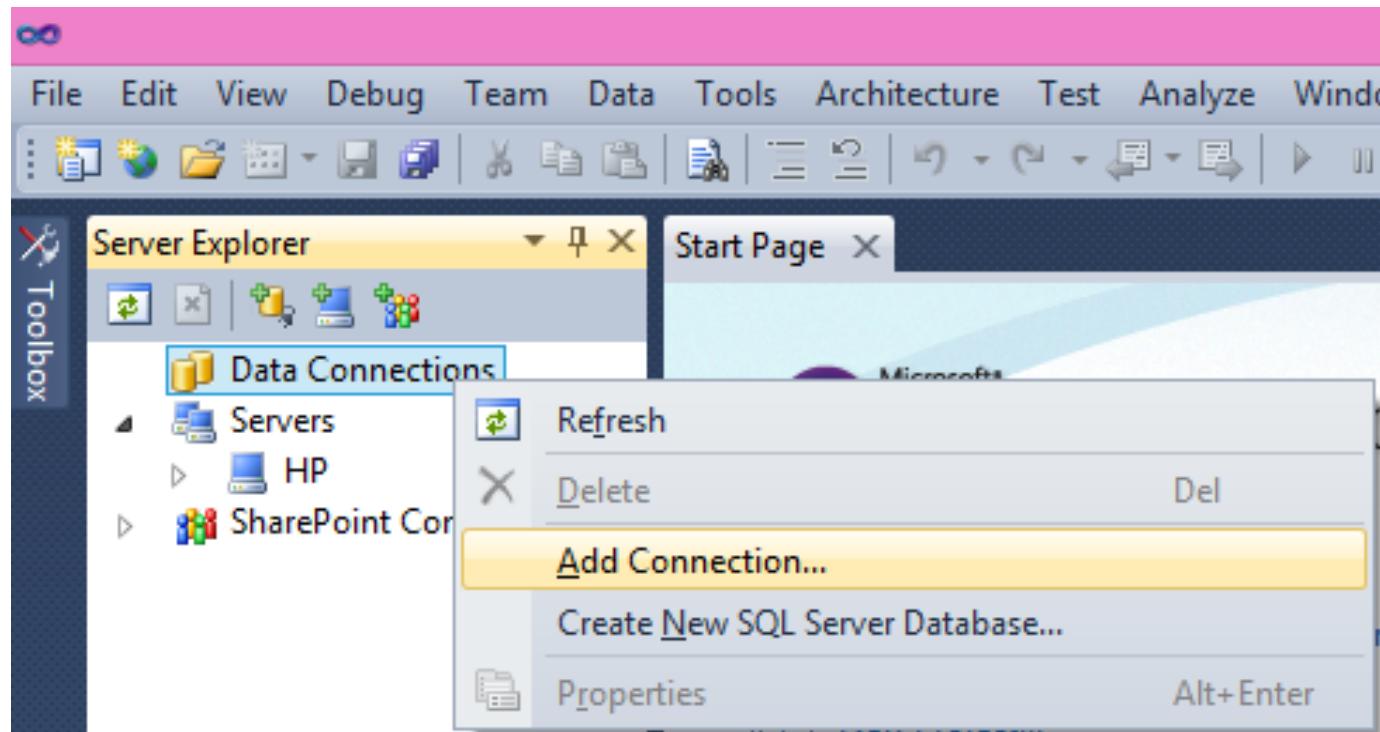
Creating A Database

1. Microsoft Visual Studio, select View | Server Explorer.

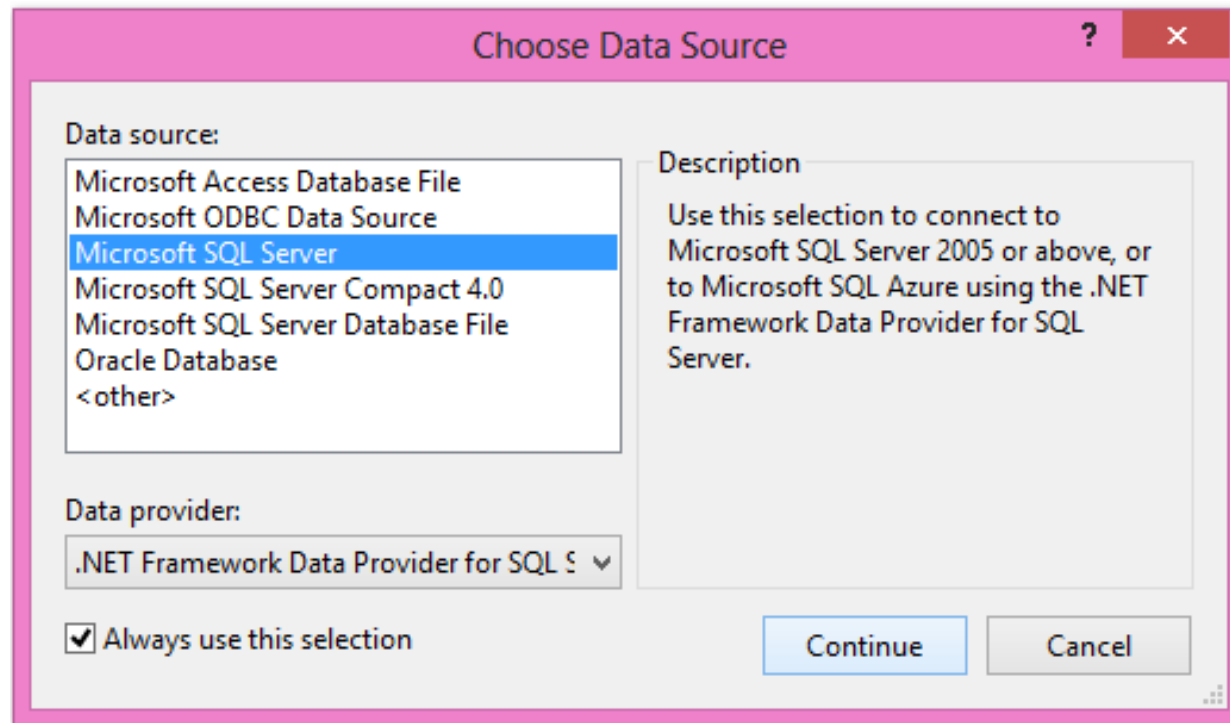


CHAPTER 7| WORKING WITH DATABASES

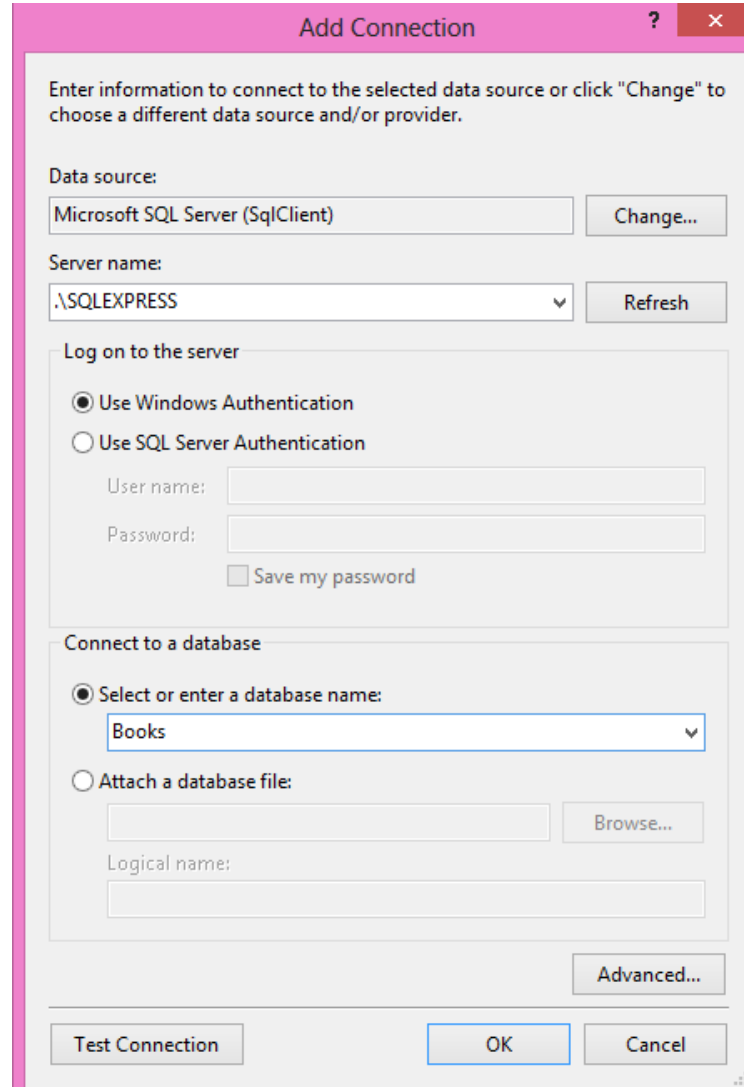
Right click on Data Connections and click Add Connection...



2. In the Choose Data Source dialog, select Microsoft SQL Server and select Continue.



3. In the Add Connection dialog, enter ".\SQLEXPRESS" for your Server Name, and enter "Books" as the name for your new database.



Add Connection ? x

Enter information to connect to the selected data source or click "Change" to choose a different data source and/or provider.

Data source:
Microsoft SQL Server (SqlClient) Change...

Server name:
.\SQLEXPRESS Refresh

Log on to the server

☒ Use Windows Authentication
☐ Use SQL Server Authentication

User name:
Password:
☐ Save my password

Connect to a database

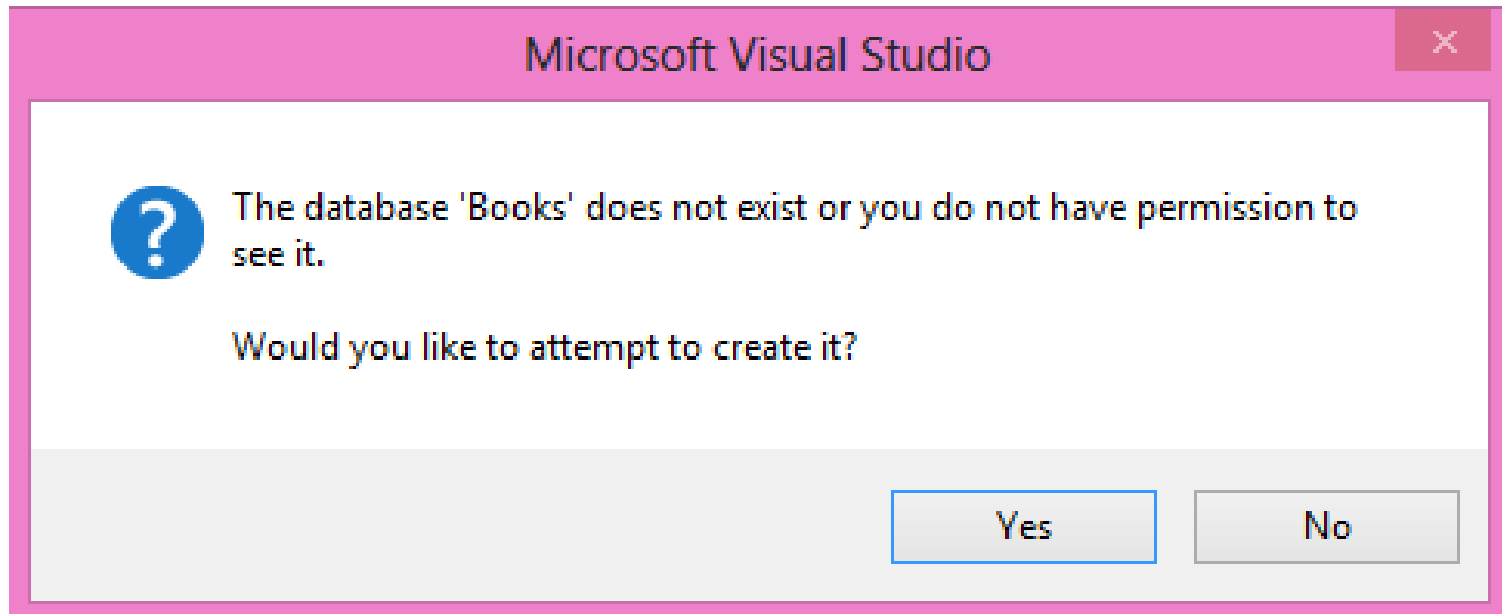
☒ Select or enter a database name:
Books ▼

☐ Attach a database file:
 Browse...
Logical name:

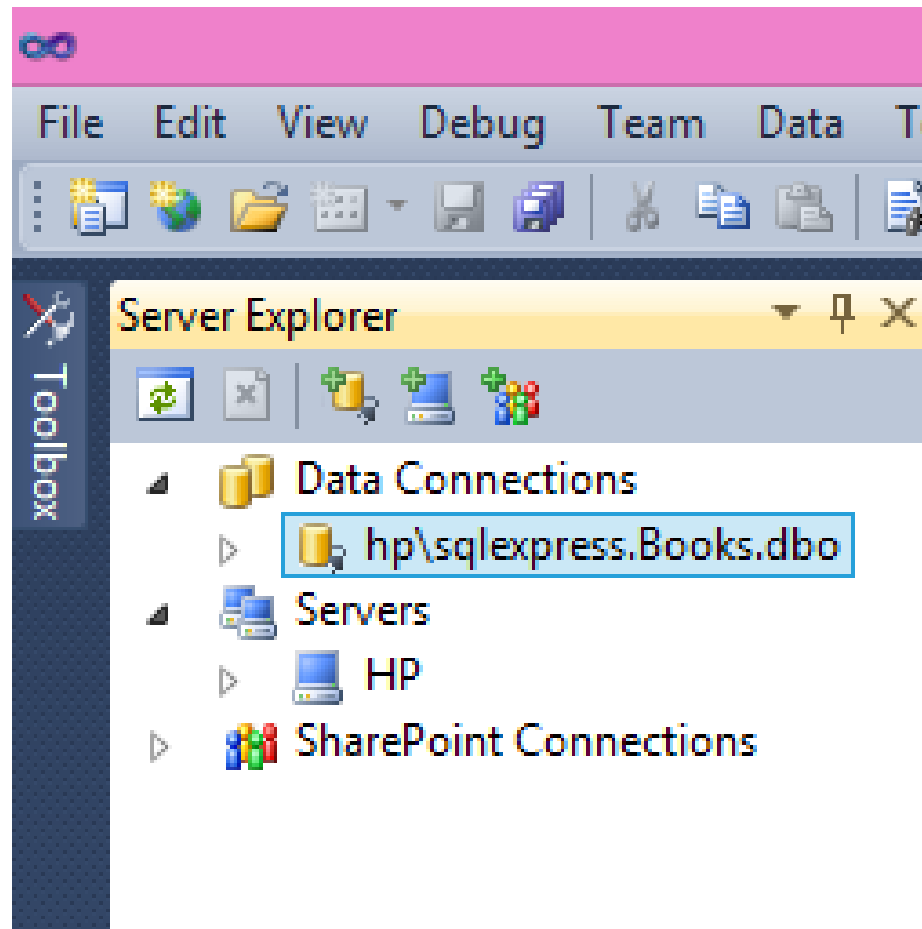
Advanced...

Test Connection OK Cancel

4. Click OK and you'll be asked if you want to create that database. Select yes.

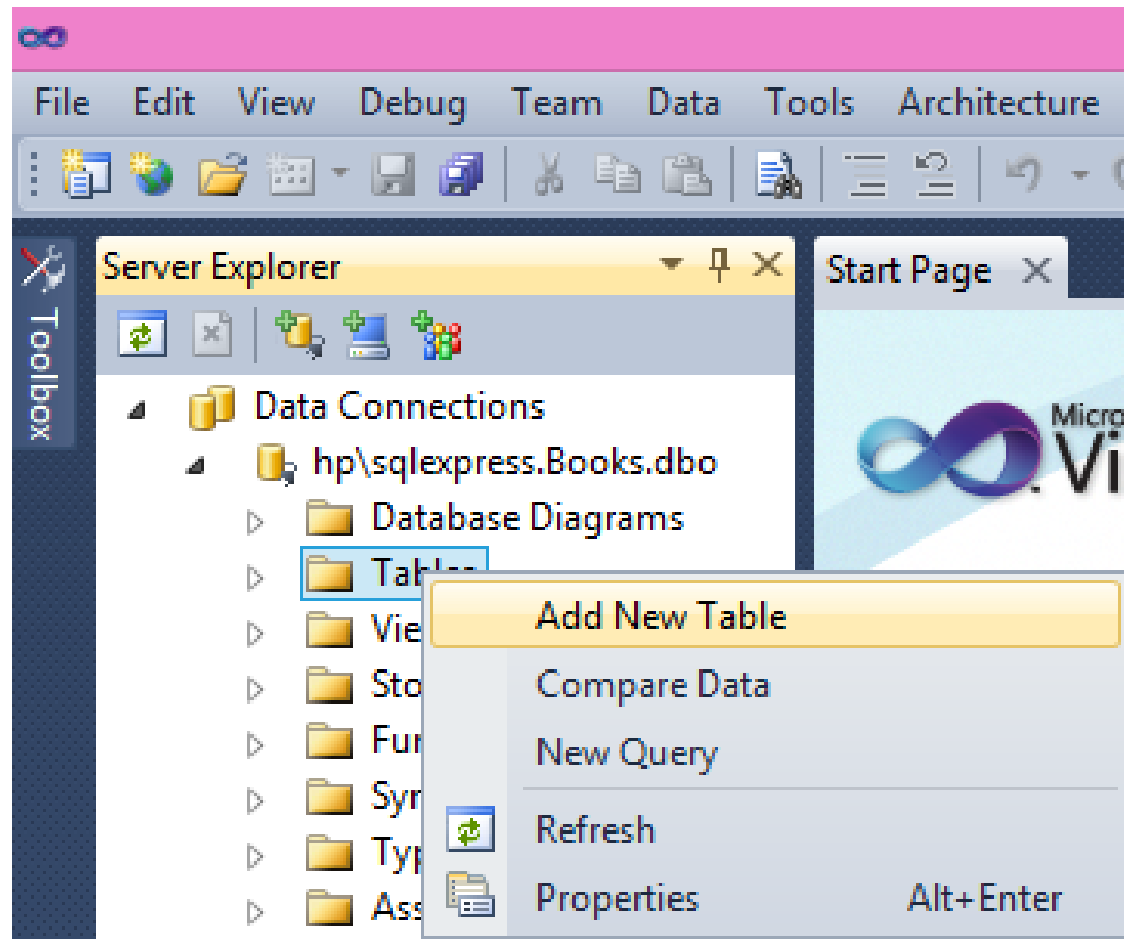


5. Now you've got an empty database in Server Explorer.




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6. Right click on Tables and click Add Table. The Table Designer will appear. Add columns for Id, Title, ReleaseDate, Genre, and Price. Right click on the isbn column and click set Primary Key. Here's what my design areas looks like.



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dbo.Book: Table(he...\\sqlexpress.Books)* X Movie: Query(herwan\\sql

	Column Name	Data Type	Allow Nulls
	isbn	nvarchar(50)	<input type="checkbox"/>
	title	nvarchar(50)	<input type="checkbox"/>
	author	nvarchar(50)	<input type="checkbox"/>
	year	nvarchar(50)	<input type="checkbox"/>
	publisher	nvarchar(50)	<input type="checkbox"/>

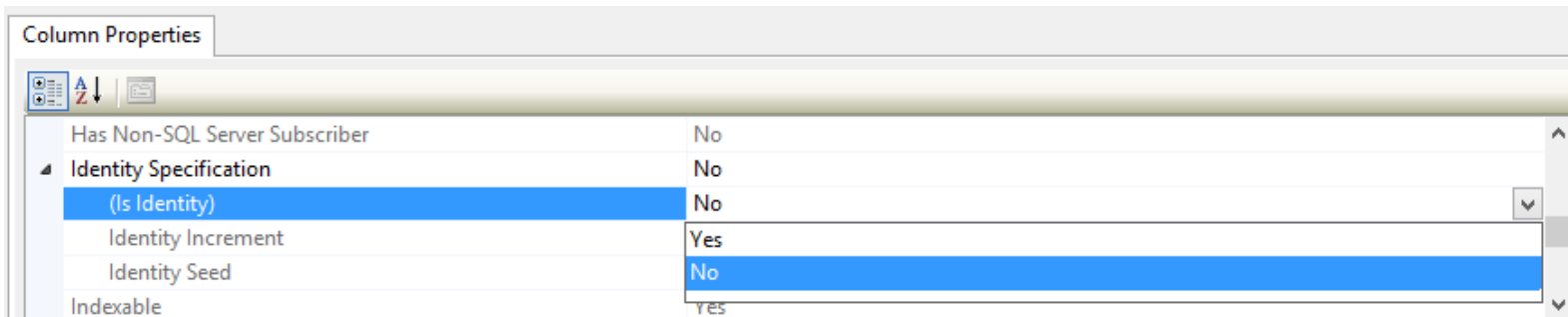
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***This step is required ONLY IF you want to set the PK as auto increment (for this case, your PK must be set to int)

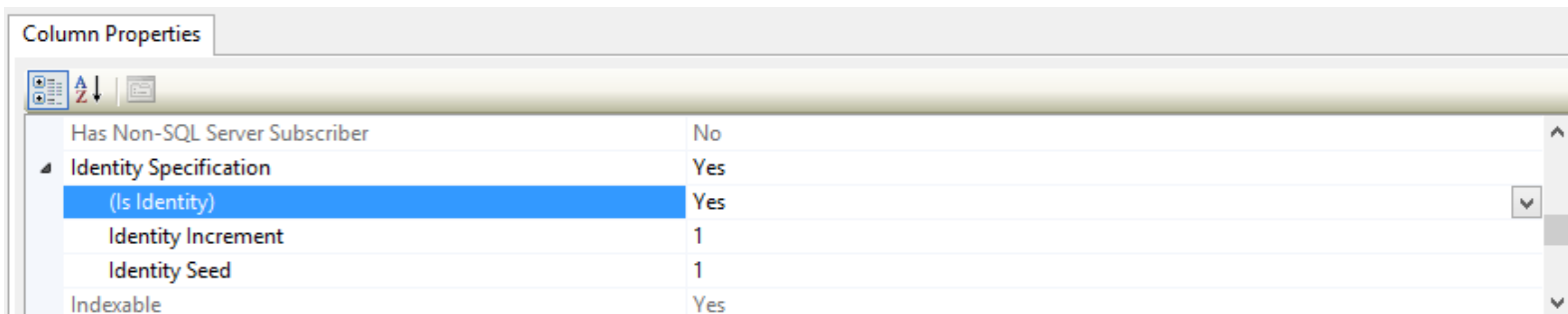
Example, the PK column is id: select the id column and under Column Properties below change "Identity Specification" to "Yes."

Primary Key should be UNIQUE but not necessarily need to be auto_increment. Sometimes, the primary key is set to auto increment because it is easy to handle.

Example: Some bank account number which is the mixture and string and digit is used as primary key for the table account. It is not set as auto_increment.

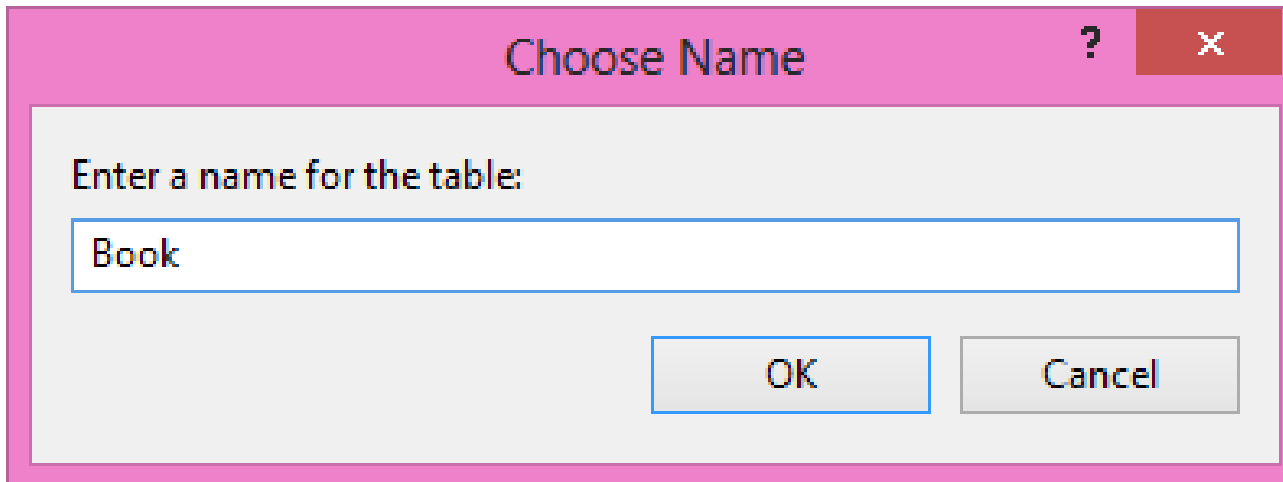


Column Properties	
Has Non-SQL Server Subscriber	No
Identity Specification	No
(Is Identity)	No
Identity Increment	Yes
Identity Seed	No
Indexable	Yes



Column Properties	
Has Non-SQL Server Subscriber	No
Identity Specification	Yes
(Is Identity)	Yes
Identity Increment	1
Identity Seed	1
Indexable	Yes

8. When you've got it done, click the Save icon in the toolbar or select File | Save from the menu, and name your table "**Book**" (singular). We've got a database and a table!



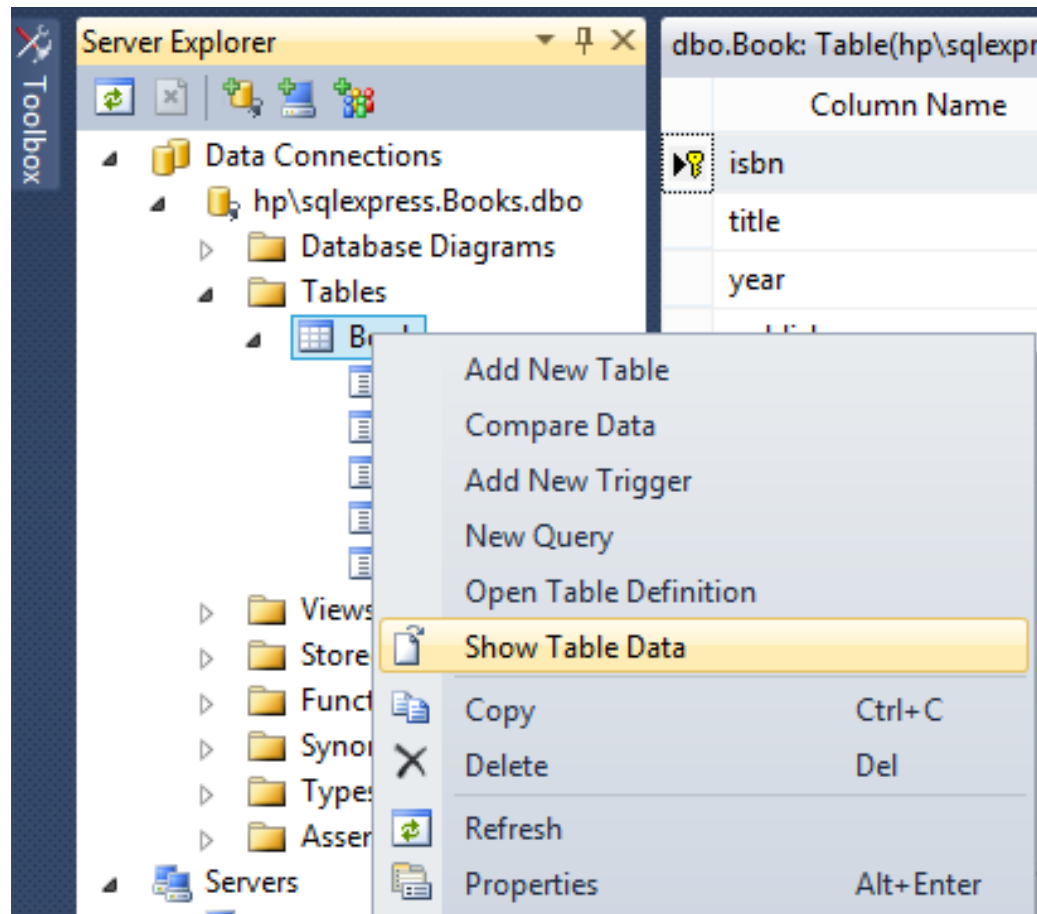
Choose Name ? X

Enter a name for the table:

Book

OK Cancel

9. Go back to Server Explorer and right click the Movie table, then select "Show Table Data."

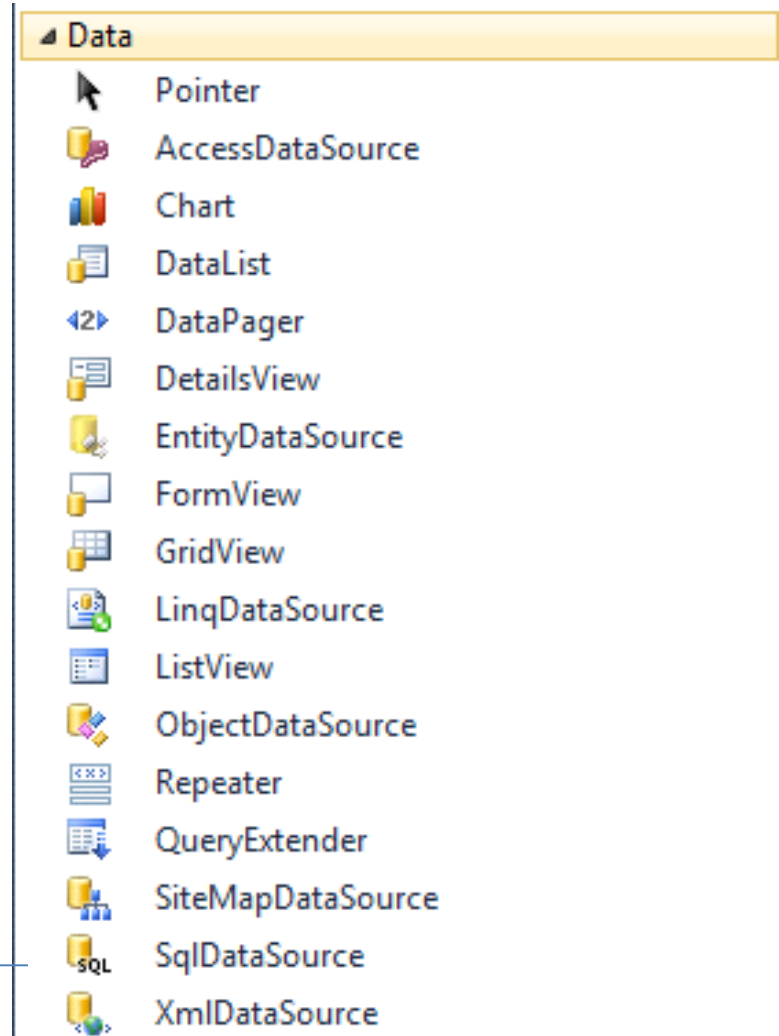


Enter a few books so our database has some data.

	isbn	title	author	year	publisher
	1	ASP.NET	Scott	2013	SAMS
	2	Visual Basic	James	2010	SAMS
	3	Visual C#	Mitchell	2014	SAMS
►*	<i>NULL</i>	<i>NULL</i>	<i>NULL</i>	<i>NULL</i>	<i>NULL</i>

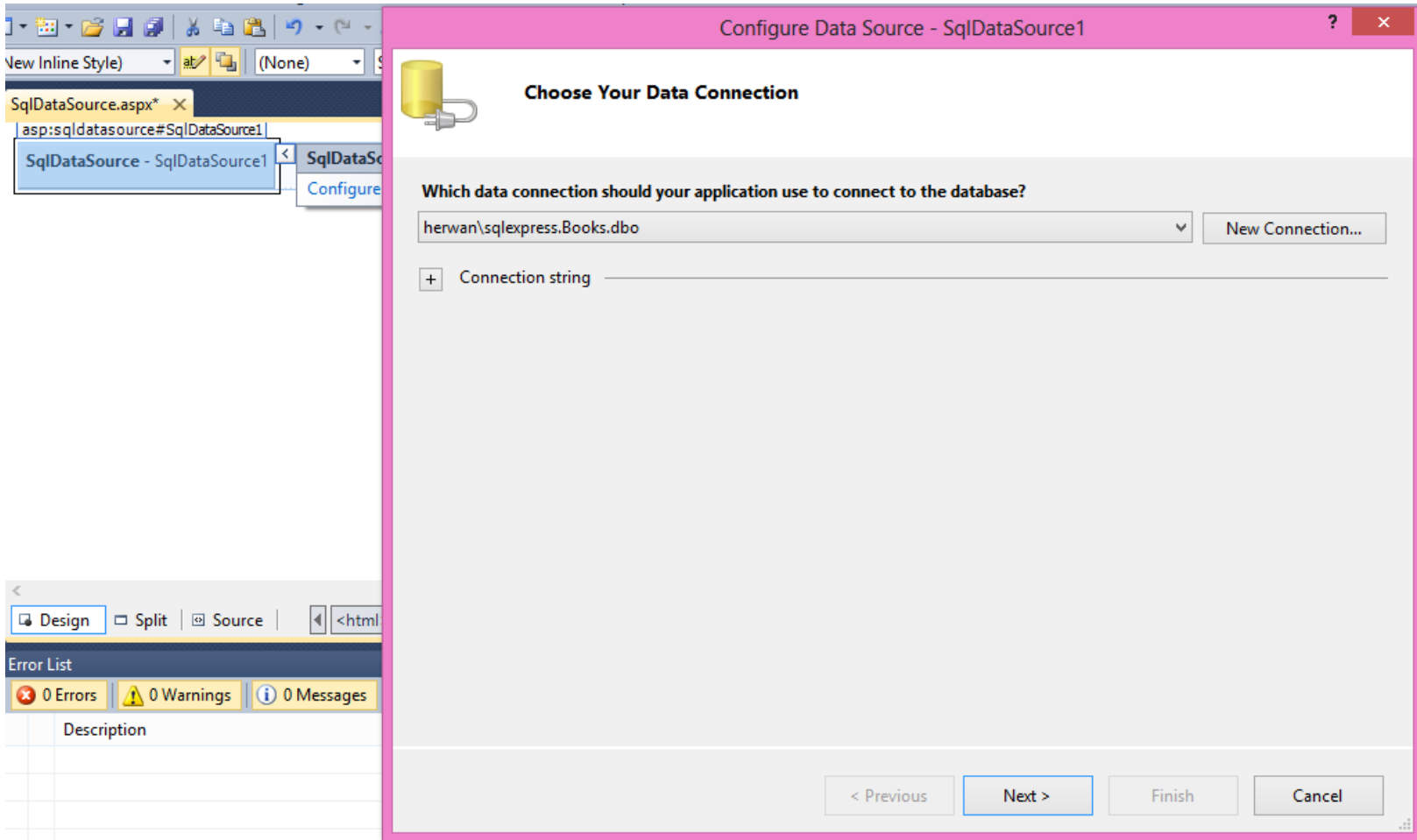
Accessing Data with the Data Source Control

- Asp.NET includes 7 data source controls.
- Each of them serves different function.




We will use the SqlDataSource control

Drag & Drop SqlDataSource – Configure Data Source – Select your Database – Next –
Check the check box: Yes, save this connection as - Next



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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:

Book

Columns:

☒ *
☐ isbn
☐ title
☐ author
☐ year
☐ publisher

☐ Return only unique rows

WHERE...

ORDER BY...

Advanced...

SELECT statement:

SELECT * FROM [Book]

< Previous Next > Finish Cancel

Select the Specify columns from a table or view

Select "Book" table from the drop-down list


Check the * check box to return all columns

The SqlDataSource control crafts the appropriate SELECT statement

Then, click Next

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Configure Data Source - SqlDataSource1

 **Test Query**

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

isbn	title	author	year	publisher
1	ASP.NET	Scott	2013	SAMS
2	Visual Basic	James	2010	SAMS
3	Visual C#	Mitchell	2014	SAMS

Test Query

SELECT statement:

SELECT * FROM [Book]

< Previous

Next >

Finish

Cancel

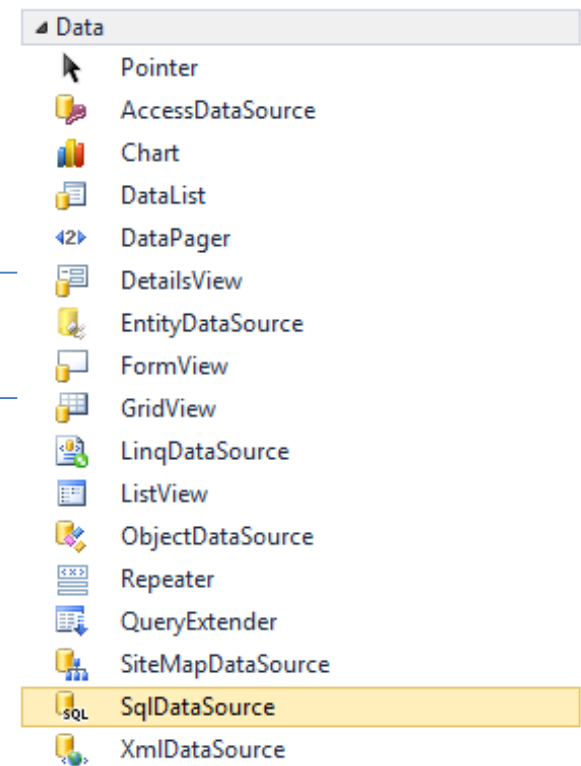
Displaying Data with the Data Web Controls

Displaying data in an ASP.NET page involves two classes of Web controls:

1. First, a data source control is used to access the data
2. Next, a data Web control is employed to display the data retrieved by the data source control

The DetailsView control

The GridView control



Now, drag and drop GridView control to the SqlDataSource.aspx -

SqlDataSource.aspx* X

SqlDataSource - SqlDataSource1

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) ▼
 - (None)
 - SqlDataSource1
 - <New data source...>
- Edit Columns...
- Add New Column...
- Edit Templates

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Smart Tag – Choose Data Source – Feel free to check the Check Boxes – Run and see the output

SqlDataSource.aspx* X

SqlDataSource - SqlDataSource1

asp:gridview#GridView1

	isbn	title	author	year	publisher
Select 0	abc	abc	abc	abc	abc
Select 1	abc	abc	abc	abc	abc
Select 2	abc	abc	abc	abc	abc
Select 3	abc	abc	abc	abc	abc
Select 4	abc	abc	abc	abc	abc
Select 5	abc	abc	abc	abc	abc
Select 6	abc	abc	abc	abc	abc
Select 7	abc	abc	abc	abc	abc
Select 8	abc	abc	abc	abc	abc
Select 9	abc	abc	abc	abc	abc

GridView Tasks

Auto Format...

Choose Data Source: SqlDataSource1

Configure Data Source...

Refresh Schema

Edit Columns...

Add New Column...

☒ Enable Paging

☒ Enable Sorting

☒ Enable Selection

Edit Templates



SqlDataSource.aspx* X

SqlDataSource - SqlDataSource1

asp:gridview#GridView1

	isbn	title	author	year	publisher
Select 0	abc	abc	abc	abc	abc
Select 1	abc	abc	abc	abc	abc
Select 2	abc	abc	abc	abc	abc
Select 3	abc	abc	abc	abc	abc
Select 4	abc	abc	abc	abc	abc
Select 5	abc	abc	abc	abc	abc
Select 6	abc	abc	abc	abc	abc
Select 7	abc	abc	abc	abc	abc
Select 8	abc	abc	abc	abc	abc
Select 9	abc	abc	abc	abc	abc

1 2

To summarize:


- Data source controls serve as a bridge between the ASP.NET page and the database.
- That is, a data source control **ONLY** retrieve database data, and **DOES NOT** have any capabilities for displaying the retrieved data on the page.
- To display the data, we need to use and additional Web controls, such as GridView, DetailsView, CheckBoxLayout, DropDownList and so on.

Deleting, Inserting and Editing Data

- Adding support for insert, updates and deletions with the SqlDataSource control is as easy as checking box.
- Create a new ASP.NET page name DeleteUpdate.aspx – add a SqlDataSource control – configure it by selecting the appropriate database or connection string in the first step – Configure the Select Statement screen
- Make sure that:
 - ✓ The Book table is selected
 - ✓ The * option is selected to retrieve all columns from the table
 - ✓ To set up the SqlDataSource to support insert, delete and update, click the Advanced button (see next slide)

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Configure Data Source - SqlDataSource1

 **Configure the Select Statement**

How would you like to retrieve data from your database?

☐ Specify a command text and parameters

☒ Specify columns and table

Name:

Columns:

- ☒ *
- ☐ isbn
- ☐ title
- ☐ author
- ☐ year
- ☐ publish

SELECT statement text box: `SELECT * FROM [Book]`

Advanced SQL Generation Options

Additional INSERT, UPDATE, and DELETE statements can be generated to update the data source.

☒ **Generate INSERT, UPDATE, and DELETE statements**

Generates INSERT, UPDATE, and DELETE statements based on your SELECT statement. You must have all primary key fields selected for this option to be enabled.

☐ **Use optimistic concurrency**

Modifies UPDATE and DELETE statements to detect whether the database has changed since the record was loaded into the DataSet. This helps prevent concurrency conflicts.

OK Cancel

< Previous Next > Finish Cancel

- Then, as usual, add a GridView – choose data source – you will see the checkboxes for insert, delete and update are available – run and test the output

DeleteUpdate.aspx X SqlDataSource.aspx

SqlDataSource - SqlDataSource1
asp:gridview#GridView1

	<u>isbn</u>	<u>title</u>	<u>author</u>	<u>year</u>	<u>publisher</u>
Edit Delete	Databound	Databound	Databound	Databound	Databound
Edit Delete	Databound	Databound	Databound	Databound	Databound
Edit Delete	Databound	Databound	Databound	Databound	Databound
Edit Delete	Databound	Databound	Databound	Databound	Databound
Edit Delete	Databound	Databound	Databound	Databound	Databound
Edit Delete	Databound	Databound	Databound	Databound	Databound
Edit Delete	Databound	Databound	Databound	Databound	Databound
Edit Delete	Databound	Databound	Databound	Databound	Databound
Edit Delete	Databound	Databound	Databound	Databound	Databound

1 2

GridView Tasks

Auto Format...

Choose Data Source: SqlDataSource1

Configure Data Source...

Refresh Schema

Edit Columns...

Add New Column...

Move Column Left

Remove Column

☒ Enable Paging

☒ Enable Sorting

☒ Enable Editing

☒ Enable Deleting

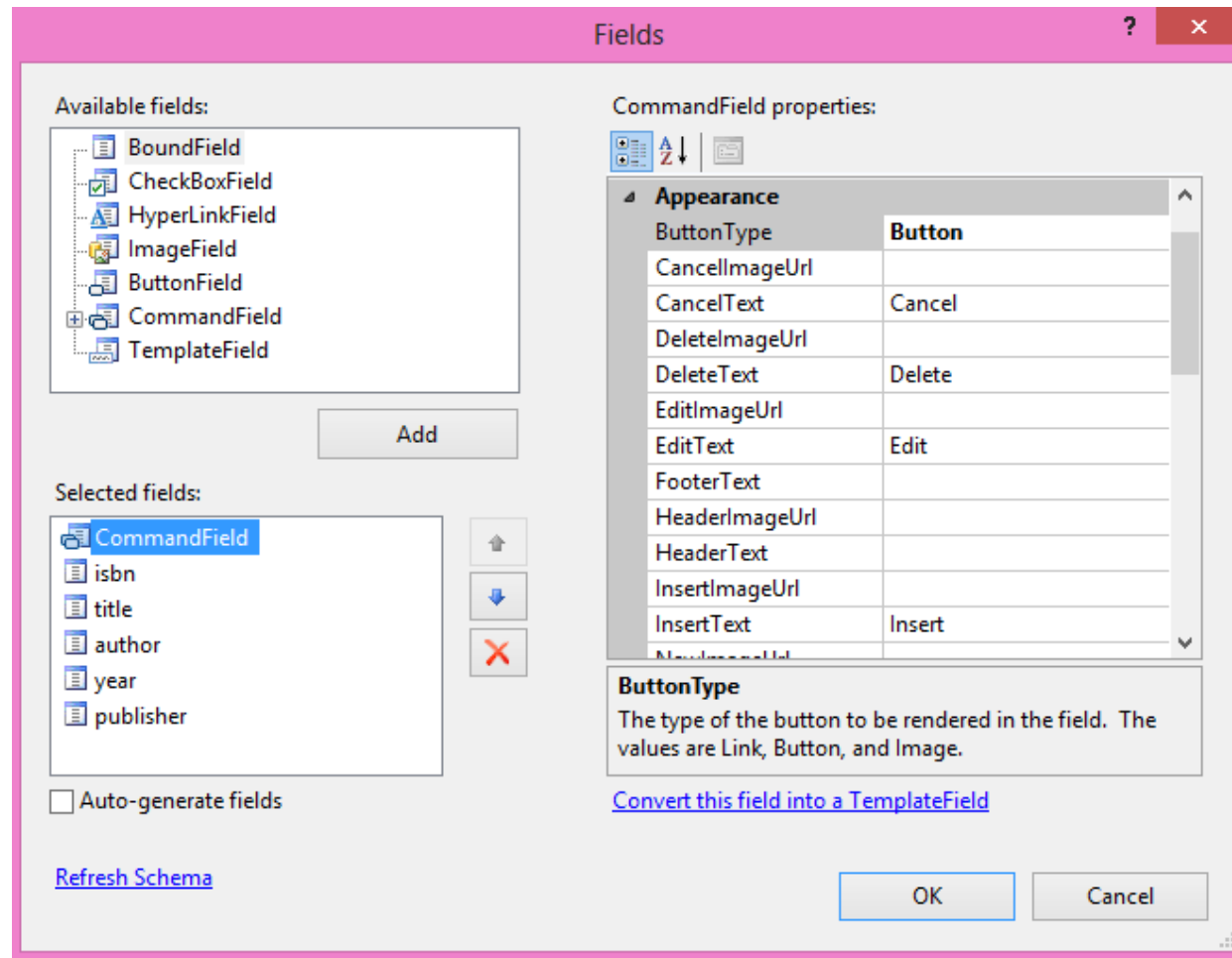
☐ Enable Selection

Edit Templates

Remember!

- The Generate Insert, Update and Delete Statements checkbox is selectable ONLY IF the columns you selected in the Configure the Select Statement screen include the table's primary key.
- In our example, the isbn column must be included, either by selecting * or by selecting isbn explicitly

Click the GridView smart tag – Edit Columns – Click CommandField – Change the property of Button Type to Button- run and see the output



Inserting Data with the DetailsView

The steps is quite similar to adding editing and deleting support to GridView. In addition to inserting, the DetailsView also offers editing and deleting capabilities. Feel free to explore!

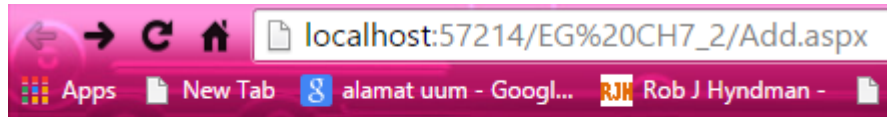
Recap:

1. Add SqlDataSource – Configure Data Source – Choose Connection String from the Drop Down List – Next – In the Configure the Select Statement Dislog Box [Click the Radio Button ‘Specify Columns from a table or view’, check the * checkbox, click button Advanced - check “Generate Insert, Update and Delete Statements” – OK – Next – Text Query

Then

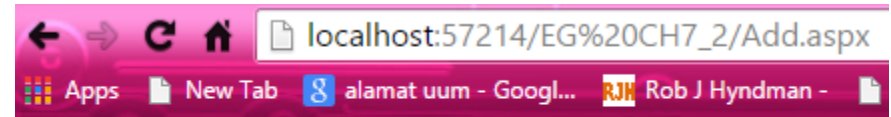
1. Add DetailsView Control – Choose Data Source – Check the Enable Inserting checkbox

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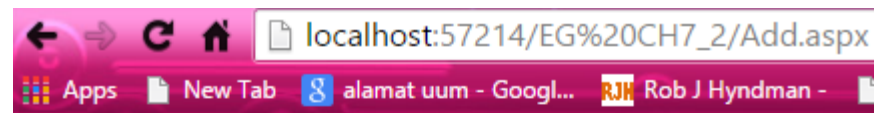
isbn	1
title	ASP.NET
author	Scott
year	2013
publisher	SAMS
New	

Click New



title	Biologically Inspired
author	Wahde
year	2010
publisher	WIT
Insert Cancel	

Click Insert



isbn	4
title	Biologically Inspired
author	Wahde
year	2010
publisher	WIT
New	
1 2 3 4	

Go to the last page

Binding Data to a List Web Control

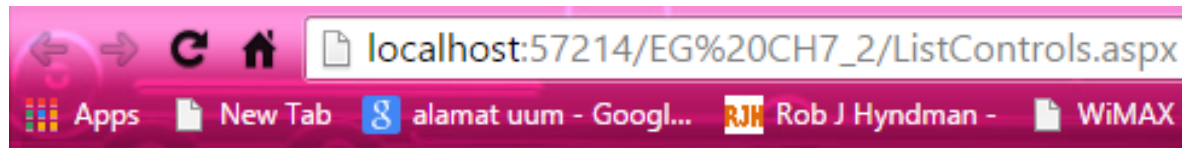
Add a new ASP.NET page named LkistControls.aspx – as usual, add the SqlDataSource control – However, this time, you don't have to configure

The SqlDataSource control to include the INSERT, UPDATE and DELETE statements.

Next, drag and drop the DropDownList, CheckBoxList and RadioButtonList.

Each of these list Web controls has a smart tag with Choose Data Source Link.

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ASP.NET ▼

- ☐ ASP.NET
- ☐ Visual Basic.Net
- ☐ Visual C#
- ☐ Biologically Inspired

- ☐ ASP.NET
- ☐ Visual Basic.Net
- ☐ Visual C#
- ☐ Biologically Inspired

The Benefits of Dynamically Populating a List Control

Static

If there are changes to the items to be displayed in the future, you must visit each and every page that uses this data and update the list control appropriately

Dynamic

You can just update the database table from which the items are retrieved and you're done!

- The GridView control shows all the record from its data source at once.
- DetailsView control show the record just one at a time.
- Both GridView and DetailsView controls can be used to delete and edit existing data
- Only DetailsView control can be used to insert records as well.

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To be continued at Chapter 8...