



INTERNET & WEB
APPLICATION DEVELOPMENT
SWE 444

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Module 5.6: More About Web Controls

Dr. El-Sayed El-Alfy

Computer Science Department
King Fahd University of Petroleum and Minerals
alfy@kfupm.edu.sa

Objectives/Outline

• Objectives

- Learn how to display data from a data source in a tabular format using GridView
- Learn to use templates, ListView and Repeater

• Outline

- GridView Control
- Data Templates
- ListView Control
- Repeater Control

GridView

- A control that displays data from a data source (e.g., a database) in tabular format
- GridView is a successor to the v1.x DataGrid with some functionality improvements
 - ability to take advantage of specific capabilities of ASP.NET data source controls
 - Unlike v1.x DataGrid, the GridView control can automatically handle simple operations such as paging, sorting, editing or deleting data (without requiring a page developer to write custom code)
 - the ability to define multiple primary key fields, and some UI customization improvements, such as new field types and templating options.
 - It also exposes a new model for page developers to handle or cancel events.

Demonstration: GridView-SqlDataSource

au_id	au_lname	au_fname	phone	address	city	state	zip	contract
172-32-1176	survex3	huber	203034044311	202 Yahoo d	Bangalore	Va	88888	<input type="checkbox"/>
213-46-8915	DFHG	saas1	3232	sa	saaaaa	CA	34234	<input type="checkbox"/>
238-95-7766	puentes	faltonas	555	Common Wealth	Santa MartaX	WI		<input checked="" type="checkbox"/>
238-95-7777	ASwreter	peach	262-5022	1234 anywhere st	west bend	WI		<input checked="" type="checkbox"/>
267-41-2394	Zakixds	Olleg	132131	Âboulevarden 43	New Delhi		22228	<input type="checkbox"/>
274-80-9391	Tuan5rm	Vietnam	123-456-7890	123456 abc st.	marseille	SW	12345	<input type="checkbox"/>
409-56-7008	Tuan	Viet	92874389274	3123 xyz st.	HaNoi	S	23131	<input checked="" type="checkbox"/>
427-17-2319	555	Joã	226183505	someAddress	Solbjerg	AZ	17012	<input type="checkbox"/>
472-27-2349	mark1321	James	557-123-1234	123 NW 12 Ave12	Schaumburg	IN	78229	<input type="checkbox"/>
486-29-1786	Kumartje	Mohan	974-2046	wwqqwSome Street	xyz	IN	19101	<input checked="" type="checkbox"/>
648-92-1872	Arunesanssss	di	9944712134	10 45th	Planoirr		99559	<input type="checkbox"/>
672-71-3249	Disorona	OnTheRocks	555-4563	123 Main St.	SomeCity		99999	<input type="checkbox"/>
712-45-1867	Olsson	Daljeet	4444	700 James Bond Street	okok		22222	<input checked="" type="checkbox"/>
722-51-5454	cccc	Raul	212 678 8900	Test Address	Barranquilla		10000	<input checked="" type="checkbox"/>
724-80-9391	fdgdfgv	Stefan	33we2we	mendof	xxxxx		92244	<input checked="" type="checkbox"/>
756-30-7391	sfsd	Coney	mhbkh	hfhfhg1344	urumiye			<input type="checkbox"/>
807-91-6654	Zindani	Raveesh	12 022667513	Guaytacama	Monda		19945	<input checked="" type="checkbox"/>
846-92-7186	Ravel	Shankar	996-335798	Chicago Cubs 191	Sacrament	11112	11111	<input checked="" type="checkbox"/>

Example taken from <http://quickstarts.asp.net/quickstartv20/aspnet/doc/ctrlref/data/gridview.aspx>

Demonstration (cont.)

GridViewSimple_cs.aspx

```
<%@ Page Language="C#" %>
<html >
<head runat="server">
  <title>GridView Bound to SqlDataSource</title>
</head>
<body>
  <form id="form1" runat="server">
    <asp:GridView ID="GridView1"
      DataSourceID="SqlDataSource1" runat="server" />

    <asp:SqlDataSource ID="SqlDataSource1" runat="server"
      SelectCommand="SELECT [au_id], [au_lname],
        [au_fname], [phone], [address], [city], [state],
        [zip], [contract] FROM [authors]"
      ConnectionString="<%$ ConnectionStrings:Pubs %>" />
  </form>
</body>
</html >
```

Needs to be defined
in Web.config file

GridView Columns Collection

- In the preceding example, the GridView control reflected against the fields of the data records returned by SqlDataSource in order to dynamically generate the columns of the grid.
- You can use **BoundField** and **CheckBoxField** objects in GridView's **Columns** collection to specify exactly which columns to display and their relative order, explicit column fields
- Other field types that can be assigned to this collection are **ImageField**, **HyperLinkField**, **CommandField**, **ButtonField**, and **TemplateField**.
- The following example demonstrates the use of BoundField and CheckBoxField.

Demonstration: BoundField & CheckBoxField

ID	Last Name	First Name	Phone	Address	City	State	Zip Code	Contract
172-32-1176	asdfg	huber	203034044311	202 Yahoo d	Bangalore	Va	88888	<input type="checkbox"/>
213-46-8915	crackel	saas1	3232	sa	saaaaa	CA	34234	<input type="checkbox"/>
238-95-7766	puentes	faltonas	555	Common Wealth	Santa MartaX	WI		<input checked="" type="checkbox"/>
238-95-7777	ASwrrer	peach	262-5022	1234 anywhere st	west bend	WI		<input checked="" type="checkbox"/>
267-41-2394	Zakixds	Olleg	132131	Åboulevarden 43	New Delhi		22228	<input type="checkbox"/>
274-80-9391	TuanSrm	Vietnam	123-456-7890	123456 abc st.	marseille	SW	12345	<input type="checkbox"/>
409-56-7008	Tuan	Viet	92874389274	3123 xyz st.	HaNoi	S	23131	<input checked="" type="checkbox"/>
427-17-2319	555	Joã	226183505	someAddress	Solbjerg	AZ	17012	<input type="checkbox"/>
472-27-2349	mark1321	James	557-123-1234	123 NW 12 Ave12	Schaumburg	IN	78229	<input type="checkbox"/>
486-29-1786	Kumartje	Mohan	974-2046	wwqqwSome Street	xyz	IN	19101	<input checked="" type="checkbox"/>
648-92-1872	Arunesanssss	di	9944712134	10 45th	Planoirr		99559	<input type="checkbox"/>
672-71-3249	Disorona	OnTheRocks	555-4563	123 Main St.	SomeCity		99999	<input type="checkbox"/>
712-45-1867	Olsson	Daljeet	4444	700 James Bond Street	okok		22222	<input checked="" type="checkbox"/>
722-51-5454	cccc	Raul	212 678 8900	Test Address	Barranquilla		10000	<input checked="" type="checkbox"/>
724-80-9391	fdgdfgv	Stefan	33we2we	mendof	xxxxx		92244	<input checked="" type="checkbox"/>
756-30-7391	sfsd	Coney	mhbkh	hfhfhg1344	urumiye			<input type="checkbox"/>
807-91-6654	Zindani	Raveesh 12	022667513	Guaytacama	Monda		19945	<input checked="" type="checkbox"/>
846-92-7186	Ravel	Shankar	996-335798	Chicago Cubs 191	Sacrament1112		11111	<input checked="" type="checkbox"/>
899-46-2035	vemb	That	666	frog	larb		00964	<input checked="" type="checkbox"/>
998-72-3567	jeezy 222	young	6 877699	1055 maple drive 123dfd	Montecito		44547	<input checked="" type="checkbox"/>

Demonstration (cont.)

```

<%@ Page Language="C#" %>
<html >
<head id="Head1" runat="server">
<title>GridView Bound Fields</title>
</head>
<body>
<form id="form1" runat="server">
<asp:GridView ID="GridView1" DataSourceID="SqlDataSource1"
AutoGenerateColumns="False" runat="server">
<Columns>
<asp:BoundField HeaderText="ID" DataField="au_id" ReadOnly="true" />
<asp:BoundField HeaderText="Last Name" DataField="au_lname" />
<asp:BoundField HeaderText="First Name" DataField="au_fname" />
<asp:BoundField HeaderText="Phone" DataField="phone" />
<asp:BoundField HeaderText="Address" DataField="address" />
<asp:BoundField HeaderText="City" DataField="ci_ty" />
<asp:BoundField HeaderText="State" DataField="state" />
<asp:BoundField HeaderText="Zip Code" DataField="zi_p" />
<asp:CheckBoxField HeaderText="Contract" DataField="contract" />
</Columns>
</asp:GridView>
<asp:SqlDataSource ID="SqlDataSource1" runat="server"
SelectCommand="SELECT [au_id], [au_lname], [au_fname], [phone],
[address], [ci_ty], [state], [zi_p], [contract] FROM [authors]"
ConnectionString="<%= $ConnectionString: Pubs %>" />
</form>
</body>
</html >

```

GridView Sorting

- An advantage of GridView control over other data-bound controls is its ability to automatically take advantage of data source capabilities.
- E.g. instead of relying on page code to manually sort or page data, the GridView control can perform these operations automatically as long as the data source is configured to support these operations.
- The following example shows a GridView control with sorting enabled.

Demonstration: Sorting

ID	Last Name	First Name	Phone	Address	City	State	Zip Code	Contract
172-32-1176	asdfg	huber	203034044311	202 Yahoo d	Bangalore	Va	88888	<input type="checkbox"/>
213-46-8915	crackel	saas1	3232	sa	saaaaa	CA	34234	<input type="checkbox"/>
238-95-7766	puentes	faltonas	555	Common Wealth	Santa MartaX	WI	99999	<input type="checkbox"/>
ID	Last Name	First Name	Phone	Address	City	State	Zip Code	Contract
172-32-1176	asdfg	huber	203034044311	202 Yahoo d	Bangalore	Va	88888	<input type="checkbox"/>
722-51-5454	cccc	Raul	212 678 8900	Test Address	Barranquilla		10000	<input checked="" type="checkbox"/>
409-56-7008	Tuan	Viet	92874389274	3123 xyz st.	HaNoi	S	23131	<input checked="" type="checkbox"/>
899-46-2035	vemb	That	666	froa	larb		00964	<input checked="" type="checkbox"/>
ID	Last Name	First Name	Phone	Address	City	State	Zip Code	Contract
807-91-6654	Zindani	Raveesh	12 022667513	Guaytacama	Monda		19945	<input checked="" type="checkbox"/>
274-80-9391	Tuan5rm	Vietnam	123-456-7890	123456 abc st.	marseille	SW	12345	<input type="checkbox"/>
267-41-2394	Zakixds	Olleg	132131	Åboulevarden 43	New Delhi		22228	<input type="checkbox"/>
172-32-1176	asdfg	huber	203034044311	202 Yahoo d	Bangalore	Va	88888	<input type="checkbox"/>
722-51-5454	cccc	Kaul	212 678 8900	Test Address	Barranquilla		10000	<input checked="" type="checkbox"/>
427-17-2319	555	Joã	226183505	someAddress	Solbjerg	AZ	17012	<input type="checkbox"/>
238-95-7777	ASwreter	peach	262-5022	1234 anywhere st	west bend	WI		<input checked="" type="checkbox"/>
213-46-8915	crackel	saas1	3232	sa	saaaaa	CA	34234	<input type="checkbox"/>
724-80-9391	fdgdfgv	Stefan	33we2we	mendof	xxxxx		92244	<input checked="" type="checkbox"/>
712-45-1867	Olsson	Daljeet	4444	700 James Bond Street	okok		22222	<input checked="" type="checkbox"/>
238-95-7766	puentes	faltonas	555	Common Wealth	Santa MartaX	WI		<input checked="" type="checkbox"/>
672-71-3249	Disorona	OnTheRocks	555-4563	123 Main St.	SomeCity		99999	<input type="checkbox"/>

Demonstration: Sorting

```
...
<asp:GridView ID="GridView1" AllowSorting="true" runat="server"
    DataSourceID="SqlDataSource1" AutoGenerateColumns="False">
<Columns>
<asp:BoundField HeaderText="ID" DataField="au_id" SortExpression="au_id" />

<asp:BoundField HeaderText="Last Name" DataField="au_lname"
    SortExpression="au_lname" />

<asp:BoundField HeaderText="First Name" DataField="au_fname"
    SortExpression="au_fname" />

<asp:BoundField HeaderText="Phone" DataField="phone" SortExpression="phone" />

<asp:BoundField HeaderText="Address" DataField="address"
    SortExpression="address" />

<asp:BoundField HeaderText="City" DataField="city" SortExpression="city" />

<asp:BoundField HeaderText="State" DataField="state" SortExpression="state" />

<asp:BoundField HeaderText="Zip Code" DataField="zip" SortExpression="zip" />

<asp:CheckBoxField HeaderText="Contract" SortExpression="contract"
    DataField="contract" />
</Columns>
</asp:GridView>
...
```

GridView Paging

- When there is too much data to display in one screen, you can use automatic paging
- To enable paging UI in the GridView, set the **AllowPaging** property to true.
- Use **PageSize** to control the number of records displayed
- The GridView can automatically page over any return value from a data source that supports the **ICollection** interface.
- The DataView returned by SqlDataSource when in DataSet mode supports this interface, so GridView can page over the result.
- When in DataReader mode, the GridView cannot page over the data returned by SqlDataSource.
- The following example demonstrates the GridView paging UI against a SqlDataSource in DataSet mode

Demonstraton: Paging

ID	Last Name	First Name	Phone	Address	City	State	Zip Code	Contract
172-32-1176	asdfg	huber	203034044311	202 Yahoo d	Bangalore	Va	88888	<input type="checkbox"/>
213-46-8915	crackel	saas1	3232	sa	saaaaa	CA	34234	<input type="checkbox"/>
238-95-7766	puentes	faltonas	555	Common Wealth	Santa MartaX	WI		<input checked="" type="checkbox"/>
238-95-7777	ASwrrerer	peach	262-5022	1234 anywhere st	west bend	WI		<input checked="" type="checkbox"/>
267-41-2394	Zakixds	Olleg	132131	Åboulevarden 43	New Delhi		22228	<input type="checkbox"/>
274-80-9391	Tuan5rm	Vietnam	123-456-7890	123456 abc st.	marseille	SW	12345	<input type="checkbox"/>
409-56-7008	Tuan	Viet	92874389274	3123 xyz st.	HaNoi	S	23131	<input checked="" type="checkbox"/>
427-17-2319	555	Joã	226183505	someAddress	Solbjerg	AZ	17012	<input type="checkbox"/>
472-27-2349	mark1321	James	557-123-1234	123 NW 12 Ave12	Schaumburg	IN	78229	<input type="checkbox"/>
486-29-1786	Kumartje	Mohan	974-2046	wwqqwSome Street xyz		IN	19101	<input checked="" type="checkbox"/>

1 2

Demonstration (cont.)

```
...
<asp:GridView ID="GridView1" AllowSorting="true" AllowPaging="true"
runat="server" DataSourceID="SqlDataSource1" AutoGenerateColumns="False">
  <Columns>
    <asp:BoundField HeaderText="ID" DataField="au_id" SortExpression="au_id" />

    <asp:BoundField HeaderText="Last Name" DataField="au_lname"
SortExpression="au_lname" />

    <asp:BoundField HeaderText="First Name" DataField="au_fname"
SortExpression="au_fname" />

    <asp:BoundField HeaderText="Phone" DataField="phone" SortExpression="phone" />

    <asp:BoundField HeaderText="Address" DataField="address"
SortExpression="address" />

    <asp:BoundField HeaderText="City" DataField="city" SortExpression="city" />

    <asp:BoundField HeaderText="State" DataField="state" SortExpression="state" />

    <asp:BoundField HeaderText="Zip Code" DataField="zip" SortExpression="zip" />

    <asp:CheckBoxField HeaderText="Contract" SortExpression="contract"
DataField="contract" />
  </Columns>
</asp:GridView>
...
```

GridView Paging and Sorting Callbacks

- GridView also supports a special mode for paging and sorting that takes advantage of client-side callbacks to the server to obtain data for the new page or newly sorted data.
 - i.e. sorting and paging will happen without page refresh
- To enable this feature, set the **EnableSortingAndPagingCallbacks** property to true.
- Notice that when a page or sort operation is performed, the page does not need to postback in order to retrieve new values (although a client script callback to the server is made).
- This feature is not supported when the GridView contains templated fields.
- Showing a Select button in a CommandField is also not supported when this feature is enabled.

Demonstration: Paging and Sorting Callbacks

au_id	au_lname	au_fname	state
172-32-1176	asdfg	huber	Va
213-46-8915	crackel	saas1	CA
238-95-7766	puentes	faltonas	WI
238-95-7777	ASwrrerer	peach	WI
267-41-2394	Zakixds	Olleg	
274-80-9391	TuanSrm	Vietnam	
409-56-7008	Tuan	Viet	
427-17-2319	555	Joã	
472-27-2349	mark1321	James	
486-29-1786	Kumartje	Mohan	
12			

au_id	au_lname	au_fname	state
648-92-1872	Arunesanssss	di	
672-71-3249	Disorona	OnTheRocks	
712-45-1867	Olsson	Daljeet	
722-51-5454	cccc	Raul	
724-80-9391	fdgdfgv	Stefan	
756-30-7391	sfsd	Coney	
807-91-6654	Zindani	Raveesh 12	
846-92-7186	Ravel	Shankar	
899-46-2035	vemb	That	
998-72-3567	jeezy 222	young	
12			

Demonstration (cont.)

```
...
<asp:GridView AllowPaging="True" AllowSorting="True" AutoGenerateColumns="False"
    DataKeyNames="au_id" DataSourceID="SqlDataSource1"
    EnableSortingAndPagingCallbacks="True" ID="GridView1" runat="server">
<Columns>

<asp:BoundField DataField="au_id" HeaderText="au_id" ReadOnly="True"
    SortExpression="au_id" />
<asp:BoundField DataField="au_lname" HeaderText="au_lname"
    SortExpression="au_lname" />
<asp:BoundField DataField="au_fname" HeaderText="au_fname"
    SortExpression="au_fname" />
<asp:BoundField DataField="state" HeaderText="state" SortExpression="state" />

</Columns>

</asp:GridView>

<asp:SqlDataSource ConnectionString="<%= $ConnectionString: Pubs %>"
    ID="SqlDataSource1" runat="server" SelectCommand="SELECT [au_id], [au_lname],
    [au_fname], [state] FROM [authors]">

</asp:SqlDataSource>
...
```

GridView Updating

- Just like sorting and paging, the GridView control can also automatically render UI for modifying data through Update and Delete operations, provided the associated data source is configured to support these capabilities.
- The SqlDataSource control supports Update operations when its **UpdateCommand** property is set and Delete operations when its **DeleteCommand** property is set to a valid update or delete command or stored procedure.
 - The UpdateCommand or DeleteCommand should contain parameter placeholders for each value that will be passed by the GridView control.
- To enable the UI in the GridView for Updates or Deletes,
 - you can either set the **AutoGenerateEditButton** and **AutoGenerateDeleteButton** properties to true,
 - or you can add a **CommandField** to the GridView control and enable its **ShowEditButton** and **ShowDeleteButton** properties.
- The GridView supports editing or deleting one row at a time.
- For editing, the user places the row in edit mode by clicking the **Edit** button, and then confirms the **Update** by clicking the Update button while the row is in edit mode.
- The user can also click the **Cancel** button to abort the edit operation and return to read-only mode. The following example shows the a GridView and SqlDataSource configured for updating data rows.

GridView Updating (cont.)

- An important property that plays a special role in Update and Delete operations is the **DataKeyNames** property.
- This property is typically set to the names of fields from the data source that are part of a primary key used to match a given row in the data source.
- Multiple keys are comma-separated when specifying this property declaratively, although it is common to only have one primary key field.
- The values of fields specified by the DataKeyNames property are round-tripped in viewstate for the sake of retaining original values to pass to an Update or Delete operation, even if that field is not rendered as one of the columns in the GridView control.
- When the GridView invokes the data source Update or Delete operation, it passes the values of these fields to the data source in a special Keys dictionary, separate from the Values dictionary that contains new values entered by the user while the row is in edit mode (for update operations).
- The contents of the Values dictionary are obtained from the input controls rendered for the row in edit mode.
- To exclude a value from this dictionary, set the **ReadOnly** property to true on the corresponding **BoundField** in the Column collection. If you are using the GridView designer in Visual Studio, the ReadOnly property is set to true for primary key fields by default.

Demonstration

```
...
<asp:GridView ID="GridView1" AllowSorting="true" AllowPaging="true"
Runat="server" DataSourceID="SqlDataSource1" AutoGenerateEditButton="true"
DataKeyNames="au_id" AutoGenerateColumns="False">
  <Columns>
    <asp:BoundField ReadOnly="true" HeaderText="ID" DataField="au_id"
SortExpression="au_id" />
    <asp:BoundField HeaderText="Last Name" DataField="au_lname"
SortExpression="au_lname" />
    <asp:BoundField HeaderText="First Name" DataField="au_fname"
SortExpression="au_fname" />
    <asp:BoundField HeaderText="Phone" DataField="phone" SortExpression="phone" />
    <asp:BoundField HeaderText="Address" DataField="address" SortExpression="address"
/>
    <asp:BoundField HeaderText="City" DataField="city" SortExpression="city" />
    <asp:BoundField HeaderText="State" DataField="state" SortExpression="state" />
    <asp:BoundField HeaderText="Zip Code" DataField="zip" SortExpression="zip" />
    <asp:CheckBoxField HeaderText="Contract" SortExpression="contract"
DataField="contract" />
  </Columns>
</asp:GridView>

<asp:SqlDataSource ID="SqlDataSource1" Runat="server"
SelectCommand="SELECT [au_id], [au_lname], [au_fname], [phone], [address],
[city], [state], [zip], [contract] FROM [authors]"
UpdateCommand="UPDATE [authors] SET [au_lname] = @au_lname, [au_fname] =
@au_fname, [phone] = @phone, [address] = @address, [city] = @city, [state] =
@state, [zip] = @zip, [contract] = @contract WHERE [au_id] = @au_id"
ConnectionString="<%= ConnectionStrings: Pubs %>" />
...
```

Templates

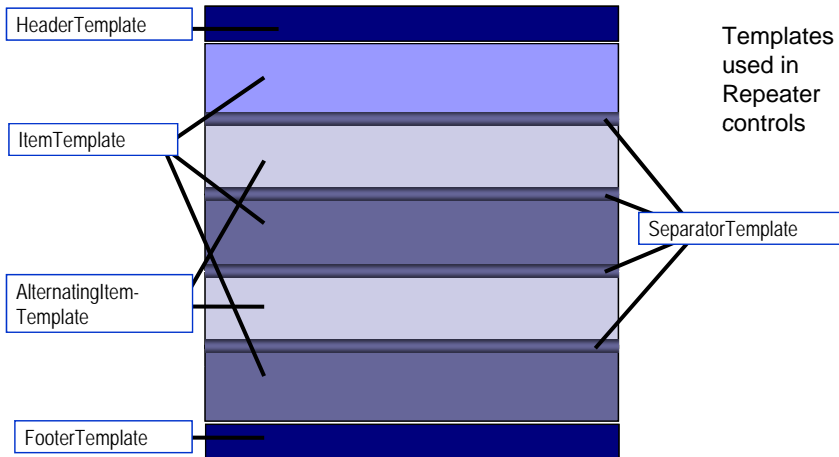
- Web controls can be customized by setting properties or by using CSS styles
 - With styles, the control's layout remains unchanged in its structure but can be modified in its appearance.
- Templates provide another powerful way to customize the display of a server control
- An ASP.NET template is a mix of HTML elements and ASP.NET controls that make up the layout for a particular area of the control
 - Not just specifying formatting and style for a column
- Styles and templates are not mutually exclusive.
 - You can use styles and templates together, or use them separately to control the appearance of the elements defined within your templates
- With data binding, templates specify a set of markup (HTML or server controls) for each bound piece of data
- However, templates are not limited to data binding
 - No fixed set of templates
 - Controls may define their own and expose any number of them

Templates (cont.)

- Standard templates for list-bound controls

Template Name	Description
ItemTemplate	Defines the content and layout of items within the list. Rendered once for each row in the data source. Required.
AlternatingItemTemplate	If defined, the AlternatingItemTemplate determines the content and layout of alternating items. If not defined, ItemTemplate is used.
SeparatorTemplate	If defined, the SeparatorTemplate is rendered between items (and alternating items). rendered between each row. If not defined, a separator is not rendered.
HeaderTemplate	If defined, the HeaderTemplate determines the content and layout of the list header. Rendered once before all data bound rows. If not defined, header is not rendered.
FooterTemplate	If defined, the FooterTemplate determines the content and layout of the list footer. Rendered once, after all data bound rows. If not defined, footer is not rendered.

Templates (cont.)



Data Binding in Templates

- Templates need to access the bound data
- Container is an alias for the template's containing control
- DataItem is an alias for the current row of the datasource
- DataBinder.Eval is a utility function provided to retrieve and format data within a template

```
<%# DataBinder.Eval(Container.DataItem, "price", "{0}") %>
```

Repeater and DataList Controls

- Repeater and DataList controls are templated controls
 - They give greater flexibility over the rendering of list-like data
- The repeater control just iterates over the bound data, rendering the `ItemTemplate` once for each item in the `DataSource` collection
 - A general-purpose iterator
 - Does not render anything beside the elements contained in the template
- DataList renders additional elements, like table rows and cells and spans containing style attributes
 - Enables end-users to exactly control the structure and layout of each item within the list (using the `ItemTemplate` property)

Repeater Control

- Provides simple output of a list of items
- No inherent visual form (i.e. has no built-in layout or styles)
 - Templates provide the visual form by explicitly declaring all HTML layout, formatting, and style tags within the templates of the control
- No paging
- Can provide templates for separators
- Not updateable

Repeater Control

```
<asp: Repeater id="repLi st" runat="server">
<templ ate name="HeaderTempl ate">
  <tabl e>
    <tr><td>Ti tle</td><td>Type</td></tr>
  </templ ate>

  <templ ate name="I temTempl ate">
    <tr>
      <td><%=# DataBi nder. Eval (Contai ner. Datal tem, "ti tle_id") %></td>
      <td><%=# DataBi nder. Eval (Contai ner. Datal tem, "type") %></td>
    </tr>
  </templ ate>

  <templ ate name="FooterTempl ate">
    </tabl e>
  </templ ate>
</asp: Repeater>
```

DataLi st Control

- Provides list output with editing
- Default look is a table
- Customized via templates
- Directional rendering (horizontal or vertical)
 - Using RepeaterColumns and RepeaterDirection (similar to background-repeat in CSS)
- Updateable
- No paging

DataList Control

```
void Page_Load(object s, EventArgs e) {
    myDataGrid.DataSource = GetSampleData();
    myDataGrid.DataBind();
}

<asp:DataList id="myDataList" runat="server">
  <template name="itemtemplate">
    <b>Title id: </b>
    <%# DataBinder.Eval(Container.DataItem, "title_id") %>
    <br> <b>Title: </b>
    <%# DataBinder.Eval(Container.DataItem, "title") %>
  </template>
</asp:DataList>
```

Q & A



References

- H. M. Deitel, P. J. Deitel, and A. B. Goldberg, *Internet and World Wide Web How to Program*, 4/e, Pearson Education Inc., 2008.
- Some useful links with examples and other resources:
 - <http://msdn.microsoft.com/net/aspnet/default.asp>
 - [Design Templates http://msdn.microsoft.com/en-us/asp.net/aa336613.aspx](http://msdn.microsoft.com/en-us/asp.net/aa336613.aspx)
 - The Official Microsoft ASP.NET Site www.asp.net
 - ASP.NET Quickstart Tutorials
 - <http://quickstarts.asp.net/QuickStartv20/aspnet/doc/ctrlref/data/default.aspx>
 - <http://quickstarts.asp.net/QuickstartV20/aspnet/>
 - <http://samples.gotdotnet.com/quickstart/aspplus/>
 - W3School ASP.NET Tutorial
 - <http://www.w3schools.com/ASPNET/default.asp>
 - ASP.NET at wikipedia <http://en.wikipedia.org/wiki/ASP.NET>
 - <http://www.asptoday.com/>
 - <http://www.aspfree.com/>
 - <http://www.devx.com/dotnet/>
 - <http://msdn.microsoft.com>
 - Understanding Templates in ASP.NET
 - <http://msdn.microsoft.com/en-us/magazine/cc301573.aspx>
 - Several Online Presentations