

Custom Templates for AJAX forms in Data Aquarium Applications

There are situations when form views rendered automatically by [Data Aquarium Framework](#) are not meeting your requirements. A simple and powerful technique allows you to specify custom form templates.

Custom Form Templates

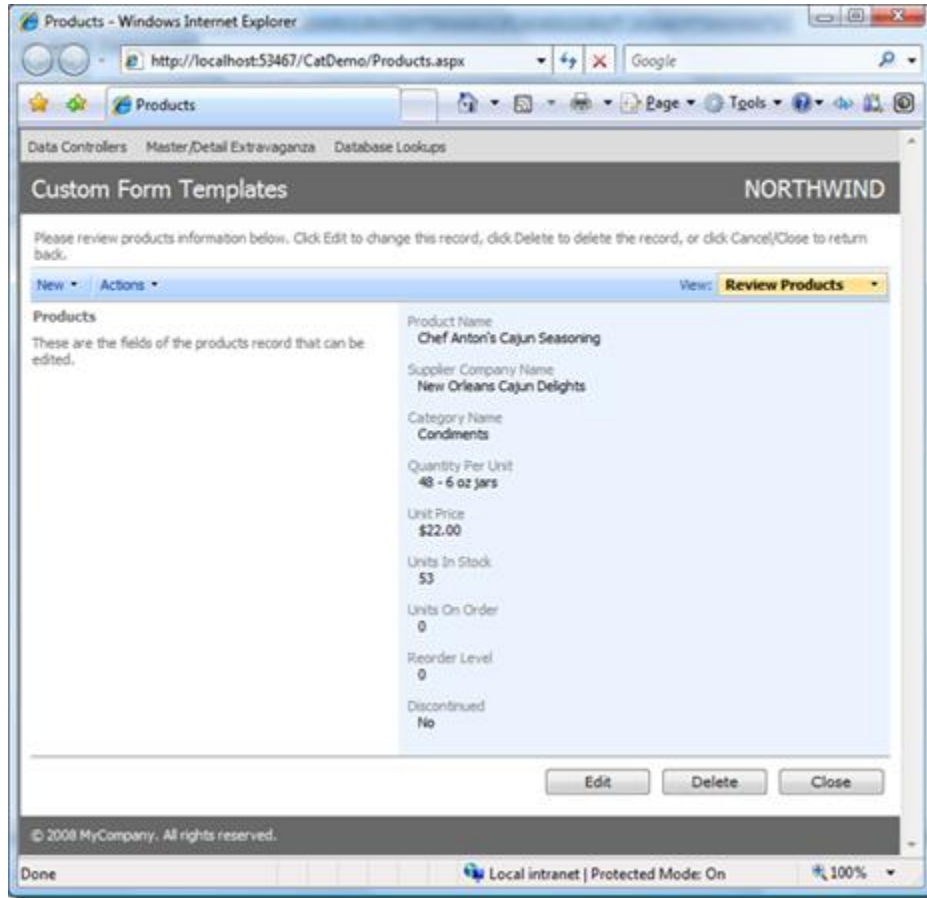
Generate a *Data Aquarium* project from *Northwind* database and create a new web form *Products.aspx* in the root of the web site. Change the form markup as shown below.

```
<%@ Page Language="C#" MasterPageFile="~/MasterPage.master"
AutoEventWireup="true"
    CodeFile="Products.aspx.cs" Inherits="Forms_Products" Title="Products" %>

<asp:Content ID="Content1" ContentPlaceHolderID="head" runat="Server">
</asp:Content>
<asp:Content ID="Content2" ContentPlaceHolderID="Header1Placeholder"
runat="Server">
    Custom Form Templates
</asp:Content>
<asp:Content ID="Content3" ContentPlaceHolderID="Header2Placeholder"
runat="Server">
    Northwind
</asp:Content>
<asp:Content ID="Content4" ContentPlaceHolderID="BodyPlaceholder"
runat="Server">
    <div id="Products" runat="server">
        </div>
        <aquarium:DataViewExtender ID="ProductsExtender" runat="server"
TargetControlID="Products"
            Controller="Products" />
```

```
</asp:Content>
```

View the new form in a browser and select any product in *grid* view.



A standard presentation with one *category* that contains all data fields is rendered.

We will break down the form data fields into two columns to make the form shorter.

Enter the following markup right after the *aquarium:DataViewExtender* control:

```
<div id="Products_editForm1" style="display: none">
  <table style="width: 700px">
    <tr>
      <td width="50%" valign="top">
        <div>
          {ProductName}
        </div>
      </td>
    </tr>
  </table>
</div>
```

```
<div>
    {SupplierID}
</div>
<div>
    {CategoryID}
</div>
<div>
    {Discontinued}
</div>
</td>
<td width="50%" valign="top">
    <div>
        {QuantityPerUnit}
    </div>
    <div>
        {UnitPrice}
    </div>
    <div>
        {UnitsInStock}
    </div>
    <div>
        {UnitsOnOrder}
    </div>
    <div>
        {ReorderLevel}
    </div>
</td>
</tr>
</table>
</div>
```

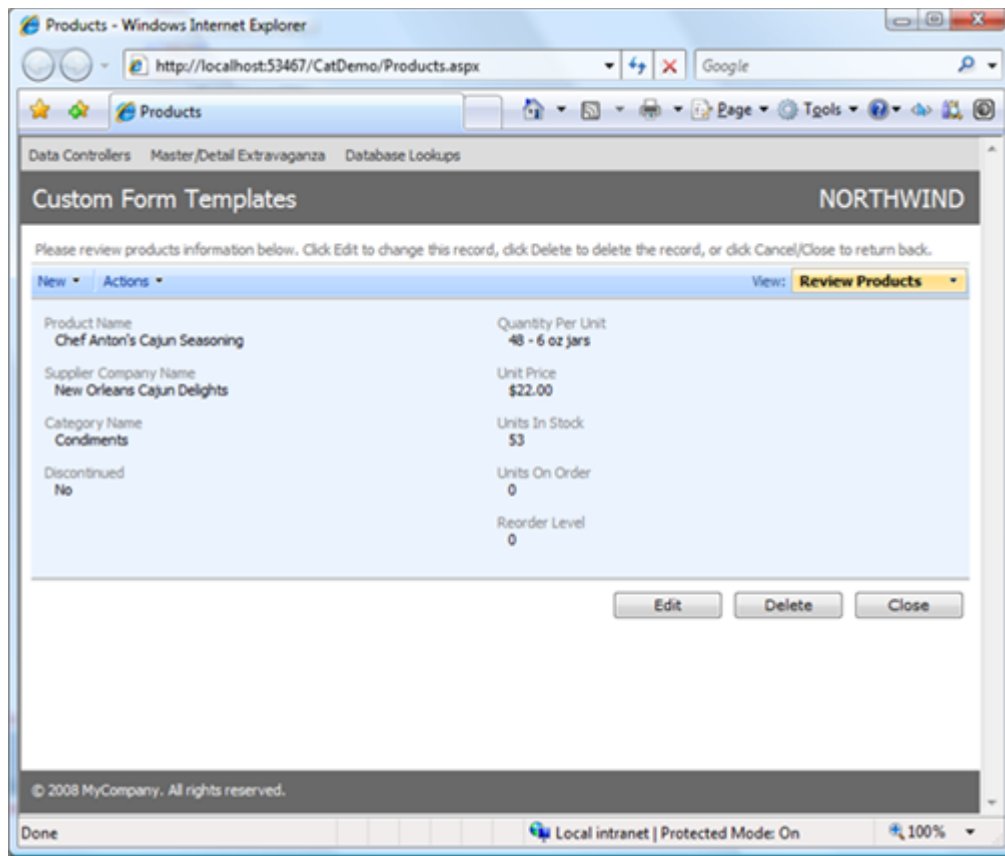
The important things here are *id* and *style* attributes of the main *div* element. The first attribute identifies a data controller descriptor and the view in the controller that must

be replaced with the template when this page is rendered. In this case we will replace the *editForm1* view whenever it is being rendered for *Products* controller.

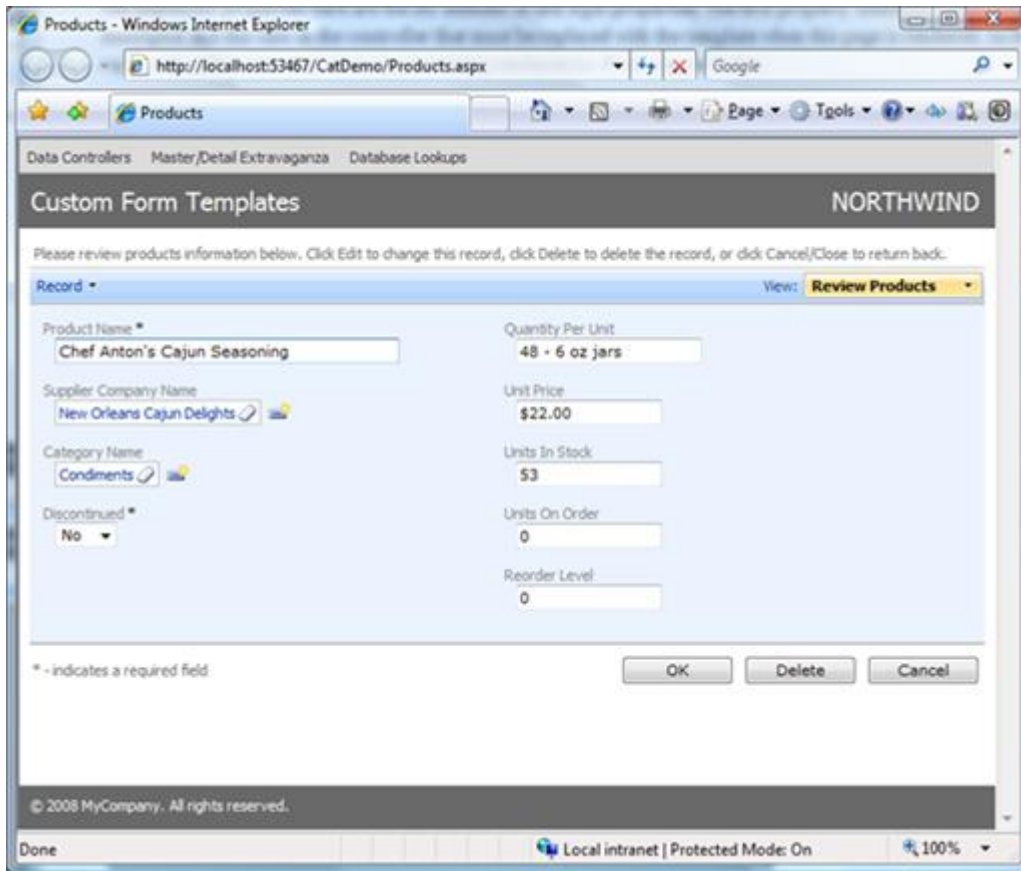
The style property with value *display:none* will hide the template from users.

The field names in the curly brackets are matched with the names of the data fields in the view *editForm1* that you can find in `~/Controllers/Products.aspx` data controller descriptor file.

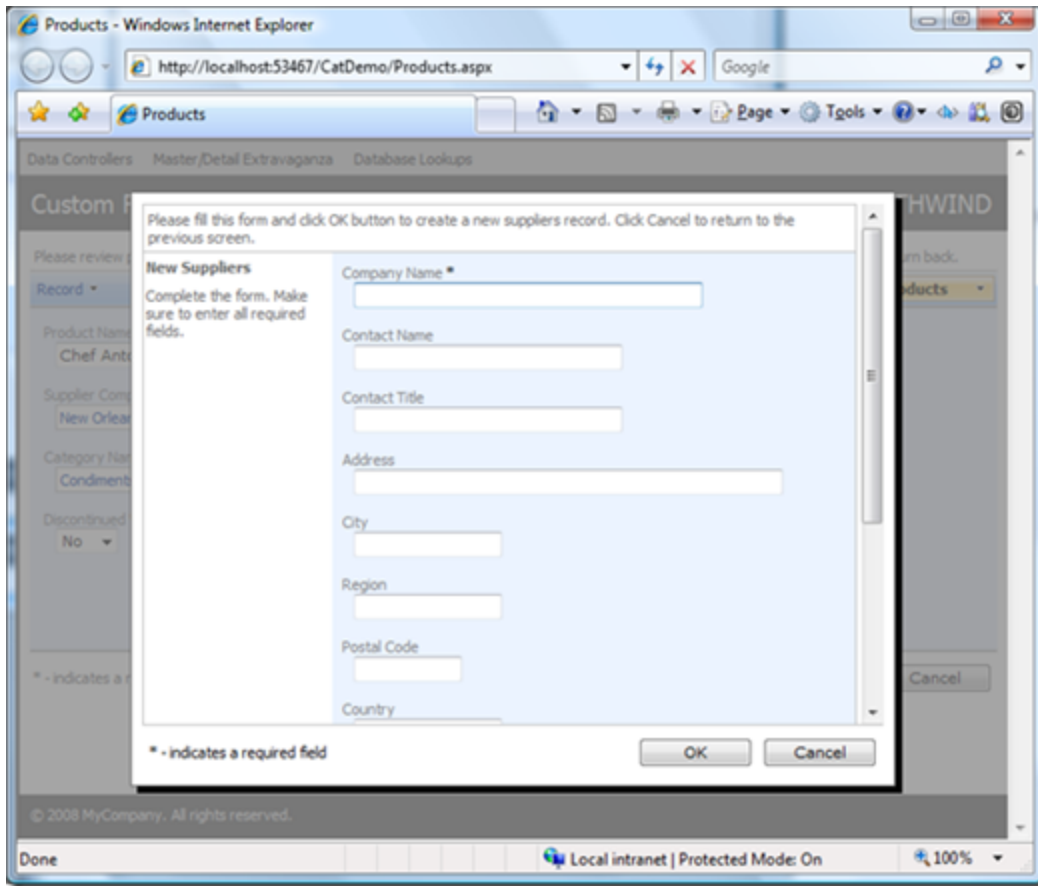
Refresh the page in a browser and select the same product again. A two-column presentation of form fields is rendered this time.



All great AJAX features of [Data Aquarium Framework](#) applications are available if you start editing data in the form. Click on the *Edit* button and the following will be rendered.



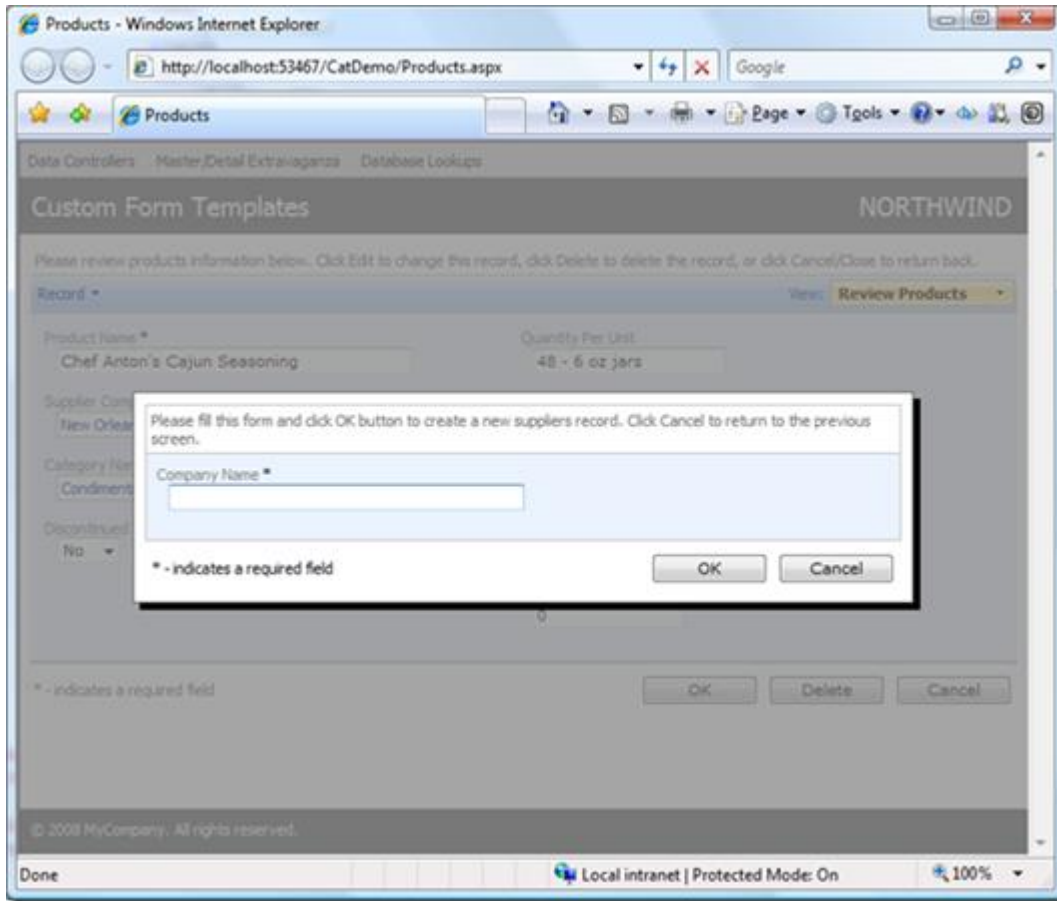
Templates are working in any data controller views rendered for displayed on the page. For example, click on *New Supplier* icon next to the *Supplier Company Name* field. Notice that a standard *New Supplier* form is displayed.



You can reduce this form to just one field if you insert the following markup right after *Products_editForm1* template.

```
<div id="Suppliers_createForm1" style="display: none">
    {CompanyName}
</div>
```

Refresh the page, select product, click on *Edit* button and click on *New Supplier* icon. A single-field form will show up.



Supplier form *createForm1* will render as shown on the picture only on the *Products.aspx* page.

If you want to customize the presentation of certain forms and have them displayed the same way on all pages of your application then you may find it useful to place relevant templates in web user controls and insert the user controls accordingly into the pages that require customization.

Here is an example of web user control *ProductTemplates.ascx* that defines a template for *editForm1* form view of *Products* data controller.

```
<%@ Control Language="C#" ClassName="ProductTemplates" %>
<div id="Products_editForm1" style="display: none">
  <table style="width: 700px">
    <tr>
      <td width="50%" valign="top">
```

```
<div>
    {ProductName}
</div>
<div>
    {SupplierID}
</div>
<div>
    {CategoryID}
</div>
<div>
    {Discontinued}
</div>
</td>
<td width="50%" valign="top">
    <div>
        {QuantityPerUnit}
    </div>
    <div>
        {UnitPrice}
    </div>
    <div>
        {UnitsInStock}
    </div>
    <div>
        {UnitsOnOrder}
    </div>
    <div>
        {ReorderLevel}
    </div>
</td>
</tr>
</table>
</div>
```


Change the markup of *Products.aspx* page as follows.

```
<%@ Page Language="C#" MasterPageFile="~/MasterPage.master"
AutoEventWireup="true"
    CodeFile="Products.aspx.cs" Inherits="Forms_Products" Title="Products" %>

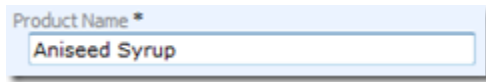
<%@ Register Src="ProductTemplates.ascx" TagName="ProductTemplates"
TagPrefix="uc1" %>
<asp:Content ID="Content1" ContentPlaceHolderID="head" runat="Server">
</asp:Content>
<asp:Content ID="Content2" ContentPlaceHolderID="Header1Placeholder"
runat="Server">
    Custom Form Templates
</asp:Content>
<asp:Content ID="Content3" ContentPlaceHolderID="Header2Placeholder"
runat="Server">
    Northwind
</asp:Content>
<asp:Content ID="Content4" ContentPlaceHolderID="BodyPlaceholder"
runat="Server">
    <div id="Products" runat="server">
        </div>
        <aquarium:DataViewExtender id="ProductsExtender" runat="server"
TargetControlId="Products"
            controller="Products" />
        <uc1:ProductTemplates ID="ProductTemplates1" runat="server" />
    </asp:Content>
```

Tag *uc1:ProductTemplates* will alter presentation of form view *editForm1* at runtime.

What's Next

If you do need to further customize the presentation of the fields in your *HTML* templates then consider using *CSS* stylesheets.

The standard layout displays a label above the field and the field has a slight padding on the left. Let's eliminate the label and remove the padding.

A screenshot of a web form field. The field is a light blue rounded rectangle with a thin border. Above the field, the text "Product Name *" is displayed in a small, dark font. Inside the field, the text "Aniseed Syrup" is entered in a dark font.

Create *CustomFormTemplates.css* stylesheet in the *~/App_Themes/MyCompany* folder and change it as shown in the next snippet. Notice that if you have changed the default namespace of your project then *MyCompany* folder shall be replaced with the name of your theme.

```
div.HiddenLabel .Header
{
    display:none;
}

div.HiddenLabel .Item
{
    font-weight:bold;
    margin-left:-8px;
}
```

Class *HiddenLabel* is our custom class. Classes *Header* and *Item* are defined in the *Aquarium.css* that you can find in the same theme folder. We will use *HiddenLabel* class to alter the presentation of the template in a browser. Change the placeholder for *ProductName* in the template of the view *editForm1* as follows.

```
<div class="HiddenLabel">
    {ProductName}
</div>
```

The simple addition of class in the *div* element will produce the following result when viewed in a web browser.

Please review products information below. Click Edit to change this record, click Delete to delete the record, or click Cancel/Close to return back.

New ▾	Actions ▾	View: Review Products ▾
Pâté chinois		Quantity Per Unit 24 boxes x 2 pies
Supplier Company Name Ma Maison		Unit Price \$24.00
Category Name Meat/Poultry		Units In Stock 115
Discontinued No		Units On Order 0
		Reorder Level 20

Still Not Enough

[Data Aquarium Framework](#) provides powerful template support to allow flexible customization of form presentation without losing any of the *AJAX* features.

There will certainly be some situations when form templates are not providing the flexibility that you need.

For example, you have to use a 3-rd party custom control or require some non-generic behavior of the form fields.

One option that is available to you is to code the custom logic in *Java Script*. Regardless of your level of experience that might not be the easiest approach.

A better option, which works great for both experienced and novice developers, it to rely on the standard *ASP.NET* controls and *asp:UpdatePanel* to provide a smooth *AJAX* style page refreshing in your web forms. [Data Aquarium Framework](#) will offer plenty of productivity features in this scenario as well.

The foundation of the development with standard controls and [Data Aquarium Framework](#) is *ControllerDataSource* component. This control provides a data source that can participate in any standard *ASP.NET* data binding to yield enormous gains in development process.

There is no data access code to write since the entire data engine of [Data Aquarium Framework](#) is at your service. This control provides all the benefits that you will find in applications based on *ObjectDataSource*, including made to measure paging, sorting, and filtering of data sets of unlimited size. Yet you don't have to write your own business objects, since *ControllerDataSource* is passing all the hard work to the framework.

At the same time you benefit from the centralized business logic that can be created with [custom action handlers](#).

Create a new page *ProductForm.aspx* in the root of your web site and add *ControllerDataSource* and *FormView* controls as shown in the sample code.

```
<%@ Page Language="C#" MasterPageFile="~/MasterPage.master"
AutoEventWireup="true"
    CodeFile="ProductForm.aspx.cs" Inherits="ProductForm" Title="Custom
Product Form" %>

<asp:Content ID="Content1" ContentPlaceHolderID="head" runat="Server">
</asp:Content>
<asp:Content ID="Content2" ContentPlaceHolderID="Header1Placeholder"
runat="Server">
    Product Form with Standard Controls
</asp:Content>
<asp:Content ID="Content3" ContentPlaceHolderID="Header2Placeholder"
runat="Server">
    Northwind
</asp:Content>
<asp:Content ID="Content4" ContentPlaceHolderID="BodyPlaceholder"
runat="Server">
    <aquarium:ControllerDataSource ID="cds1" runat="server"
DataController="Products" />
    <asp:FormView ID="FormView1" runat="server" AllowPaging="True"
DataSourceID="cds1"
        DataKeyNames="ProductID">
```

```

<EditItemTemplate>
  <table style="width: 500px">
    <tr>
      <td valign="top">
        <div style="padding-bottom: 8px;">
          Product Name:<br />
          <asp:TextBox ID="ProductNameTextBox"
runat="server" Text='<%# Bind("ProductName") %>' /></div>
        <div>
          Supplier Company Name:<br />
          <aquarium:DataViewLookup ID="SupplierLookup"
runat="server" DataController="Suppliers"
          DataValueField="SupplierID"
DataTextField="CompanyName" SelectedValue='<%# Bind("SupplierID") %>' />
        </div>
        <div>
          Category Name:<br />
          <aquarium:DataViewLookup ID="CategoriesLookup"
runat="server" DataController="Categories"
          DataValueField="CategoryID"
DataTextField="CategoryName" SelectedValue='<%# Bind("CategoryID") %>' />
        </div>
        <div>
          Discontinued:
          <asp:CheckBox ID="DiscontinuedCheckBox"
runat="server" Checked='<%# Bind("Discontinued") %>' /></div>
      </td>
      <td valign="top">
        <div>
          Quantity Per Unit:<br />
          <asp:TextBox ID="QuantityPerUnitTextBox"
runat="server" Text='<%# Bind("QuantityPerUnit") %>' /></div>
        <div>

```

```

        Unit Price:<br />
        <asp:TextBox ID="UnitPriceTextBox" runat="server"
Text='<%# Bind("UnitPrice") %>' /></div>
        <div>
            Units In Stock:<br />
            <asp:TextBox ID="UnitsInStockTextBox"
runat="server" Text='<%# Bind("UnitsInStock") %>' /></div>
        <div>
            Units On Order:<br />
            <asp:TextBox ID="UnitsOnOrderTextBox"
runat="server" Text='<%# Bind("UnitsOnOrder") %>' /></div>
        <div>
            ReorderLevel:<br />
            <asp:TextBox ID="ReorderLevelTextBox"
runat="server" Text='<%# Bind("ReorderLevel") %>' /></div>
    </td>
</tr>
</table>
    <asp:LinkButton ID="UpdateButton" runat="server"
CausesValidation="True" CommandName="Update"
        Text="Update" />
        &nbsp;<asp:LinkButton ID="UpdateCancelButton" runat="server"
CausesValidation="False"
        CommandName="Cancel" Text="Cancel" />
</EditItemTemplate>
<InsertItemTemplate>
    <table style="width: 500px">
        <tr>
            <td valign="top">
                <div>
                    Product Name:<br />
                    <asp:TextBox ID="ProductNameTextBox"
runat="server" Text='<%# Bind("ProductName") %>' /></div>

```

```
<div>
    Supplier Company Name:<br />
    <aquarium:DataViewLookup ID="SupplierLookup"
runat="server" DataController="Suppliers"
        DataValueField="SupplierID"
DataTextField="CompanyName" SelectedValue='<%# Bind("SupplierID") %>' />
</div>
<div>
    Category Name:<br />
    <aquarium:DataViewLookup ID="CategoriesLookup"
runat="server" DataController="Categories"
        DataValueField="CategoryID"
DataTextField="CategoryName" SelectedValue='<%# Bind("CategoryID") %>' />
</div>
</td>
<td valign="top">
    <div>
        Quantity Per Unit:<br />
        <asp:TextBox ID="QuantityPerUnitTextBox"
runat="server" Text='<%# Bind("QuantityPerUnit") %>' /></div>
    <div>
        Unit Price:<br />
        <asp:TextBox ID="UnitPriceTextBox" runat="server"
Text='<%# Bind("UnitPrice") %>' /></div>
    <div>
        Units InStock:<br />
        <asp:TextBox ID="UnitsInStockTextBox"
runat="server" Text='<%# Bind("UnitsInStock") %>' /></div>
    <div>
        Units On Order:<br />
        <asp:TextBox ID="UnitsOnOrderTextBox"
runat="server" Text='<%# Bind("UnitsOnOrder") %>' /></div>
    <div>
```

```

        Reorder Level:<br />
        <asp:TextBox ID="ReorderLevelTextBox"
runat="server" Text='<%# Bind("ReorderLevel") %>' /></div>
    </td>
</tr>
</table>
    <asp:LinkButton ID="InsertButton" runat="server"
CausesValidation="True" CommandName="Insert"
    Text="Insert" />
    &nbsp;<asp:LinkButton ID="InsertCancelButton" runat="server"
CausesValidation="False"
    CommandName="Cancel" Text="Cancel" />
</InsertItemTemplate>
<ItemTemplate>
    <table style="width: 500px">
        <tr>
            <td valign="top">
                <div style="padding-bottom: 8px;">
                    Product Name:<br />
                    <asp:Label ID="ProductNameLabel" runat="server"
Text='<%# Bind("ProductName") %>'
                        Font-Bold="true" /></div>
                <div style="padding-bottom: 8px;">
                    Supplier Company Name:<br />
                    <asp:Label ID="SupplierCompanyNameLabel"
runat="server" Text='<%# Bind("SupplierCompanyName") %>'
                        Font-Bold="true" /></div>
                <div style="padding-bottom: 8px;">
                    Category Name:<br />
                    <asp:Label ID="CategoryCategoryNameLabel"
runat="server" Text='<%# Bind("CategoryCategoryName") %>'
                        Font-Bold="true" /></div>
                <div style="padding-bottom: 8px;">

```



```

        Discontinued:
        <asp:CheckBox ID="DiscontinuedCheckBox"
runat="server" Checked='<%# Bind("Discontinued") %>'
            Font-Bold="true" Enabled="false" /></div>
    </td>
    <td valign="top">
        <div style="padding-bottom: 8px;">
            Quantity Per Unit:<br />
            <asp:Label ID="QuantityPerUnitLabel"
runat="server" Text='<%# Bind("QuantityPerUnit") %>'
            Font-Bold="true" /></div>
        <div style="padding-bottom: 8px;">
            Unit Price:<br />
            <asp:Label ID="UnitPriceLabel" runat="server"
Text='<%# Bind("UnitPrice") %>' Font-Bold="true" /></div>
        <div style="padding-bottom: 8px;">
            Units In Stock:<br />
            <asp:Label ID="UnitsInStockLabel" runat="server"
Text='<%# Bind("UnitsInStock") %>'
            Font-Bold="true" /></div>
        <div style="padding-bottom: 8px;">
            Units On Order:<br />
            <asp:Label ID="UnitsOnOrderLabel" runat="server"
Text='<%# Bind("UnitsOnOrder") %>'
            Font-Bold="true" /></div>
        <div style="padding-bottom: 8px;">
            Reorder Level:<br />
            <asp:Label ID="ReorderLevelLabel" runat="server"
Text='<%# Bind("ReorderLevel") %>'
            Font-Bold="true" />
        </div>
    </td>
</tr>

```

```
</table>
    <asp:LinkButton ID="EditButton" runat="server"
CausesValidation="False" CommandName="Edit"
        Text="Edit" />
    &nbsp;<asp:LinkButton ID="DeleteButton" runat="server"
CausesValidation="False" CommandName="Delete"
        Text="Delete" />
    &nbsp;<asp:LinkButton ID="NewButton" runat="server"
CausesValidation="False" CommandName="New"
        Text="New" />
</ItemTemplate>
</asp:FormView>
</asp:Content>
```

Despite the heavy customization that you can do with *FormView* control there is very little that needs to be done to enable the data access features. There is just one line that includes *ControllerDataSource* control in the page and makes the form capable of paging, inserting, updating, and deleting the data in the *products* table.

```
<aquarium:ControllerDataSource ID="cds1" runat="server"
DataController="Products" />
```

Also there are few instances of *DataViewLookup* control that bring in AJAX enabled data lookup capability in the standard *FormView* control.

Open the page in a browser and edit any product. The following user interface will be presented.

The screenshot shows a web browser window titled "Custom Product Form - Windows Internet Explorer". The address bar displays "http://localhost:53467/CatDemo/ProductForm.aspx". The browser's menu bar includes "Page", "Tools", and "Google". The page content is titled "Product Form with Standard Controls" and "NORTHWIND".

The form contains the following fields:

Product Name:	Quantity Per Unit:
<input type="text" value="Bura"/>	<input type="text" value="12 - 200 ml jars"/>
Supplier Company Name:	Unit Price:
<input type="text" value="Tokyo Traders"/>	<input type="text" value="31.0000"/>
Category Name:	Units In Stock:
<input type="text" value="Seafood"/>	<input type="text" value="31"/>
Discontinued: <input type="checkbox"/>	Units On Order:
	<input type="text" value="0"/>
	ReorderLevel:
	<input type="text" value="0"/>

Below the form, there are "Update" and "Cancel" buttons, and a pagination control showing "1 2 3 4 5 6 7 8 9 10 ...".

At the bottom of the page, there is a copyright notice: "© 2008 MyCompany. All rights reserved." and a status bar showing "Local intranet | Protected Mode: On" and "100%".