Venky

ASP.Net 2.0 Training

ASP.Net Tutorial

Step by Step instructions with plenty of pictures. Learn to create ASP.Net websites using Visual Studio quickly and easily. Visual Studio makes creating database connected websites easier than ever. Connection your website to SQL Server or Access sometimes without writing any code. Learn ASP.Net online for free. Learn how to do it in code as well as how to do it the EASY way.

ASP.Net Training

Not just code examples, but step by step training in ASP.Net
ASP.Net is Microsoft's latest version of ASP
All the controls are covered in detail
Including the data bound controls

ADO.Net tutorial

Currently I have tutorials for the data Bound controls but I also plan to add complete ADO.Net training and tutorials.

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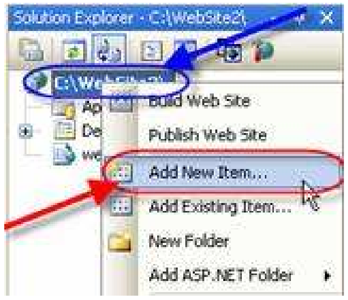
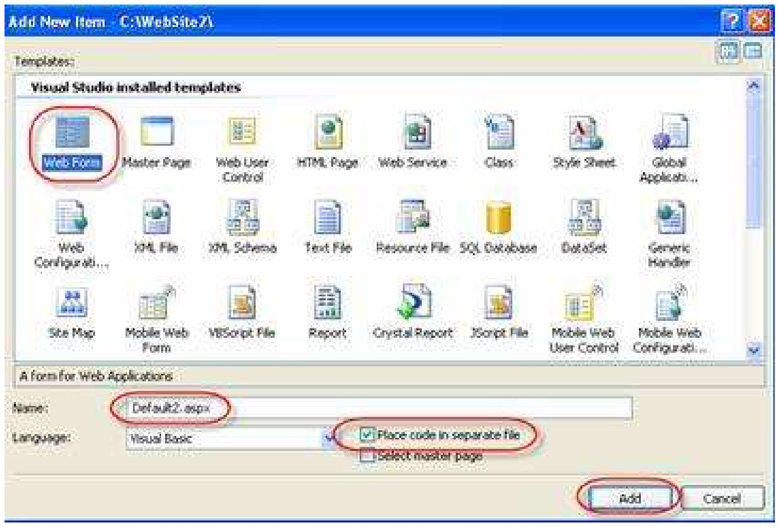
Visual Studio File Management

Solution Explorer:

- Solution explorer contains all your files in your website
- Right click on project name and you can:
  - add new item
  - add existing item
  - add a new folder
  - Add an ASP.Net folder
- Select *Add new item*



- Select web form for a new ASP.net page
- Notice all the other types of files available
- Name your new file
- Check or uncheck Place code in separate file
- This will either place the programming logic in a code behind or put it all in one file
- Click Add



Name: Default2.aspx

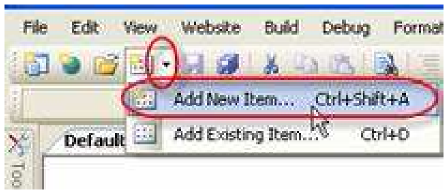
Language: Visual Basic

[✓] Place code in separate file

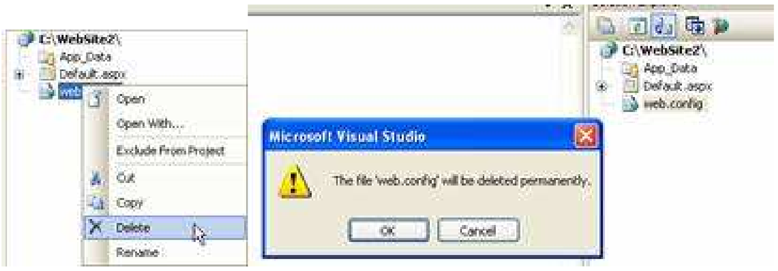
[ ] Select master page

Add a new item from toolbar:

- Select the drop down arrow on the toolbar shown.
- Select Add new item or Add existing item
- Select Add new item or Add existing item

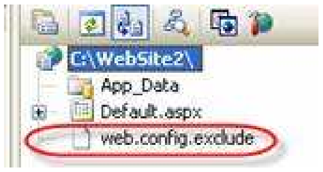


Add Existing item
This can be used to add images and other files created in another program
Remove items from project:
• Highlight it and delete on keyboard- erases the file
• Right click file and select delete

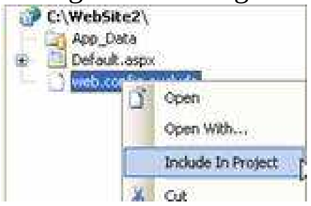


The file 'web.config' will be deleted permanently.

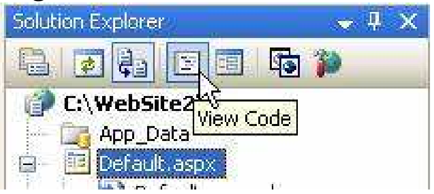
Exclude from Project:
• Right click and exclude from project
• This does not delete the actual file



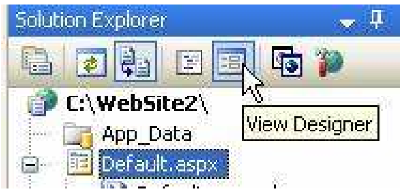
You can use the file again by right-clicking and selecting Include in Project

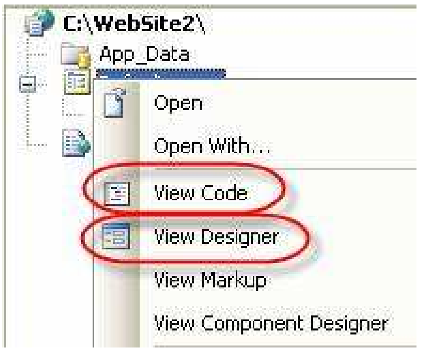


Open a File in Code View or Design View:



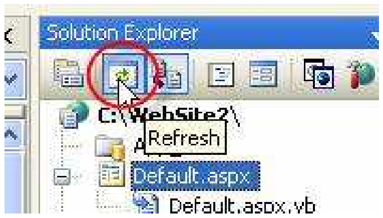
• right click file in solution explorer and select view code or select code view button



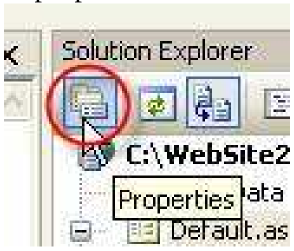


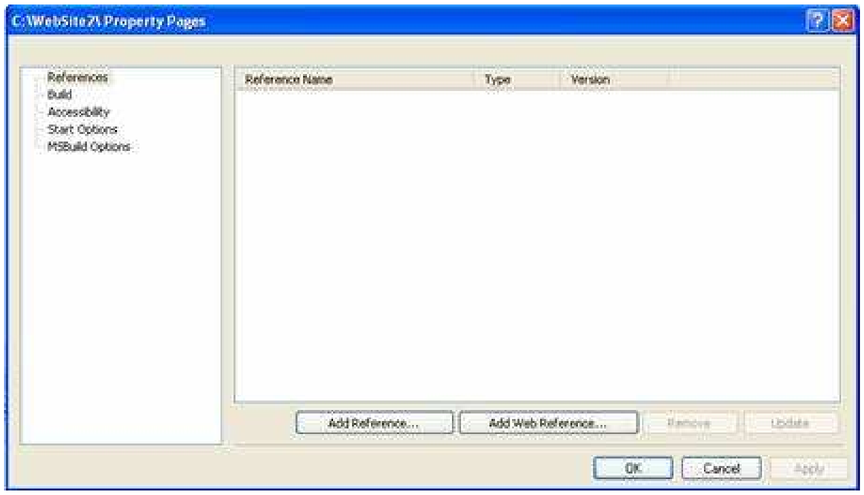
You can also double click the file in the solution explorer to view it in design view

Refresh Button

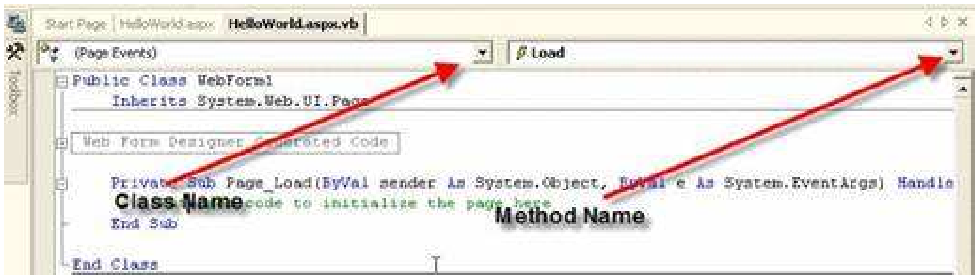


Properties window:
Setting project properties:
• Select the project within solution explorer and properties show up in the properties panel
• Right click on projects title and select properties





Use this dialog box for advanced property settings of your web site project
You can also set properties in the Properties Window while selecting the project name
Code View
• In code view you can access any class by the first dropdown
• You can reference any method and events from the second dropdown



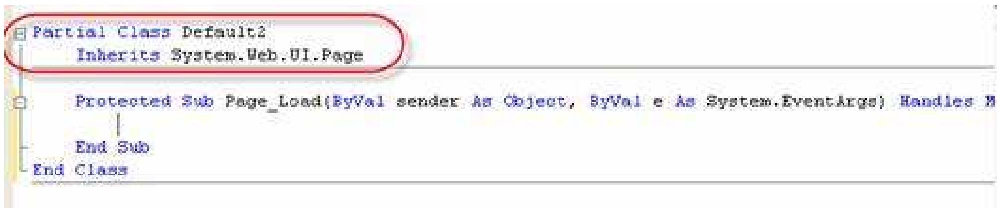
```
Public Class WebForm1
    Inherits System.Web.UI.Page

Web Form Designer Generated Code

    Private Sub Page_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handle
        code to initialize the page here
    End Sub

End Class
```

ASP.Net 2.0 uses partial classes so you no longer have to include lines of generated code in all your files

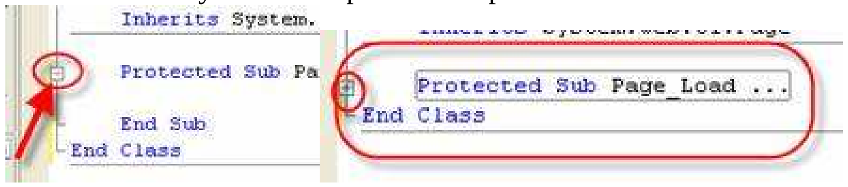


```
Partial Class Default2
    Inherits System.Web.UI.Page

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs) Handles M

    End Sub
End Class
```

All code blocks have the ability to be collapsed and expanded:



```
    Inherits System.

    Protected Sub Pa

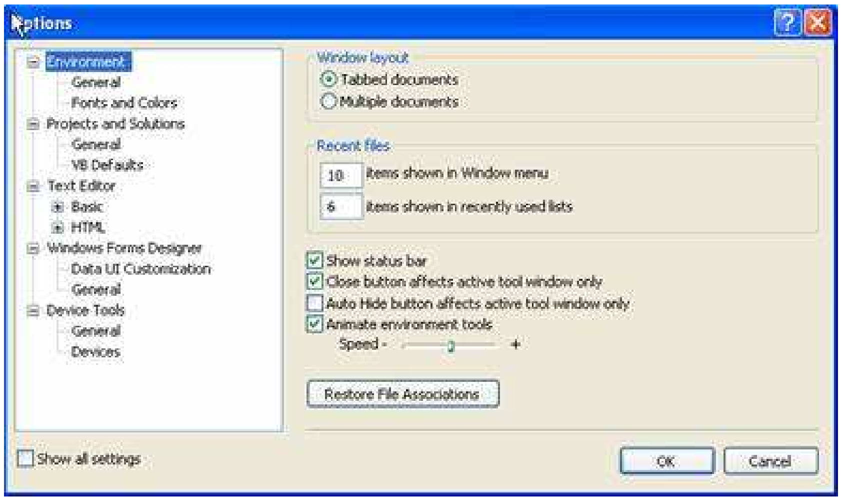
    End Sub
End Class
```

```
    Protected Sub Page_Load ...
End Class
```

Select from MENU:
Tools
Options

General

• You can switch from a tabbed or MDI Window view



Window layout
(●) Tabbed documents
( ) Multiple documents

Recent files
10 items shown in Window menu
6 items shown in recently used lists

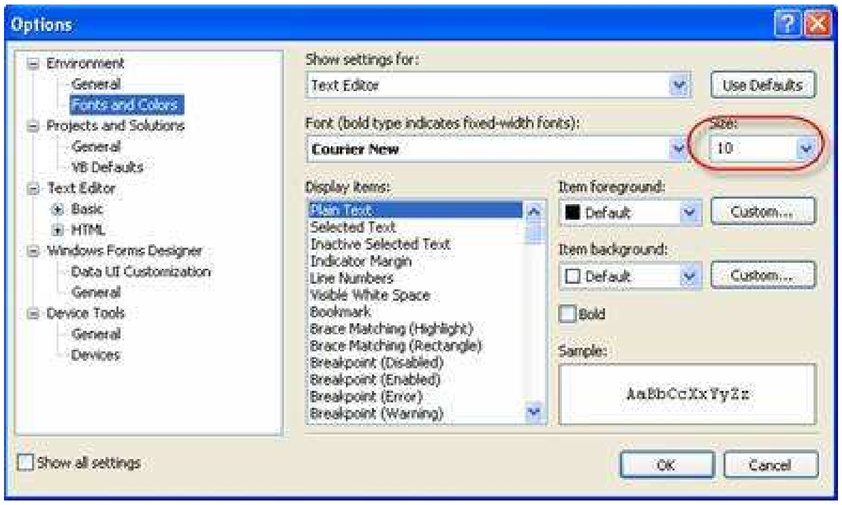
☑ Show status bar
☑ Close button affects active tool window only
☐ Auto Hide button affects active tool window only
☑ Animate environment tools
Speed - +

☐ Show all settings

Environment

• Fonts and Colors

• Can change size and fonts of code



Show settings for: Text Editor

Font (bold type indicates fixed-width fonts): **Courier New**

Size: 10

Display items:
Plain Text
Selected Text
Inactive Selected Text
Indicator Margin
Line Numbers
Visible White Space
Bookmark
Brace Matching (Highlight)
Brace Matching (Rectangle)
Breakpoint (Disabled)
Breakpoint (Enabled)
Breakpoint (Error)
Breakpoint (Warning)

Item foreground: Default

Item background: Default

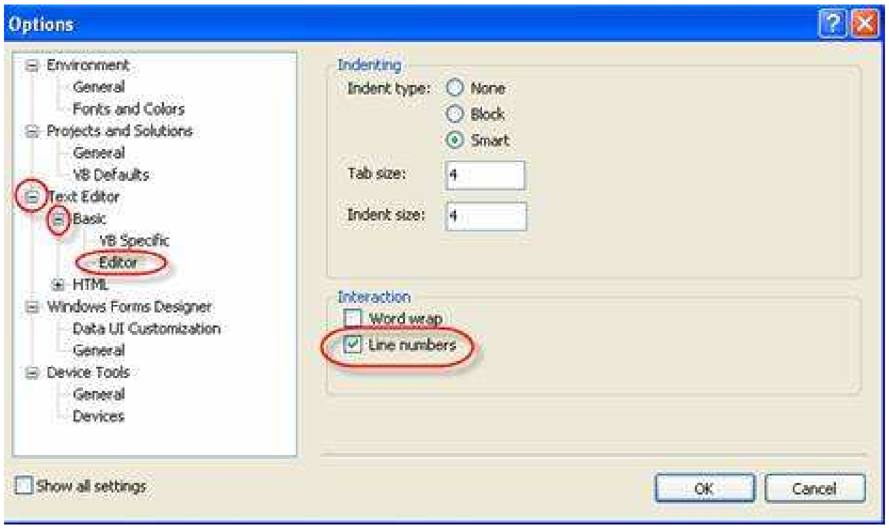
☐ Bold

Sample: AaBbCcXxYyZz

☐ Show all settings

Text Editor

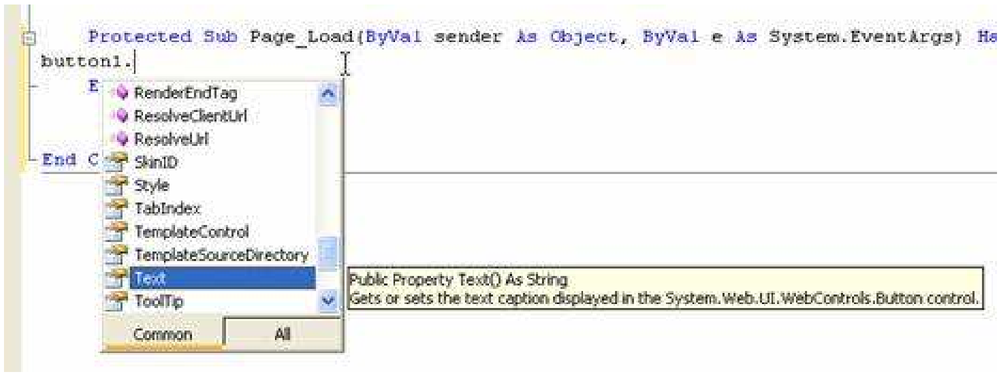
• You can turn line numbering on or off



Indenting
Indent type: None Block [✓ Smart]
Tab size: 4
Indent size: 4

Interaction
Word wrap
[✓ Line numbers]

Intellisense
• While typing code Visual Studio will add a pop up box when you click the dot



```
    Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs) Ha
button1.
    E
End C
```

Public Property Text() As String
Gets or sets the text caption displayed in the System.Web.UI.WebControls.Button control.

ASP: Image

- The Image control is used to display an image.

Property	Description
AlternateText	An alternate text for the image
Enabled	Specifies whether this control is enabled
Font	Specifies the font for the alternate text
id	A unique id for the control
ImageAlign	Specifies the alignment of the image. Legal values are: • NotSet ,AbsBottom, AbsMiddle, BaseLine, Bottom • Left, Middle, Right, TextTop, Top
ImageUrl	The URL of the image to display for the link
Runat	Specifies that the control is a server control. Must be set to "server"

Download the following image:http://www.morosko.com/comics1.gif save it to the c:\inetpub\wwwroot directory

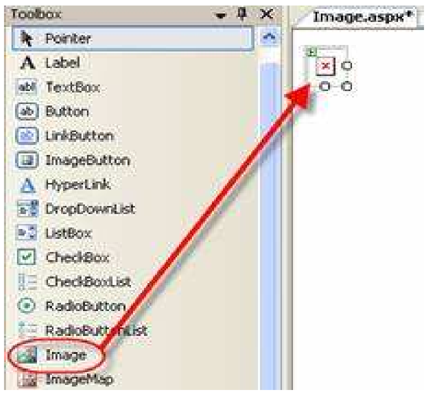
```
<html><body>
<form runat="server">
<asp:Image runat="server" AlternateText="Ad" ImageUrl=" comics1.gif " />
</form></body>
</html>
```

Save as: ImageEx.aspx

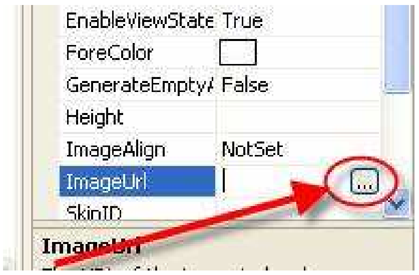
Alternative Method

Try this in Visual Studio:

- Open Visual Studio->Add a new web form->Name it *ImageEx.aspx*
- Add an Image control



- In the properties window change the AlternateText property to *Ad*
- Add an existing item and select the comics1.gif file
- Select the image control again
- Click on the ellipsis in the imageURL property



EnableViewState	True
ForeColor	
GenerateEmpty/	False
Height	
ImageAlign	NotSet
ImageUrl	
SkinID	

ImageUrl

- Add the Comics1.gif image file
- Test it

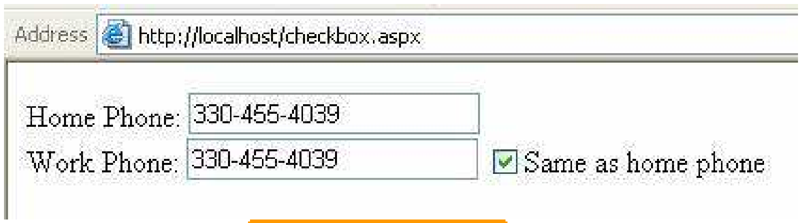
Checkbox

- The CheckBox control is used to display a check box.

Property	Description
AutoPostBack	A Boolean value that specifies whether the form should be posted immediately after the Checked property has changed or not. Default is false
Checked	A Boolean value that specifies whether the check box is checked or not
id	A unique id for the control
OnCheckedChanged	The name of the function to be executed when the Checked property has changed
runat	Specifies that the control is a server control. Must be set to "server"
Text	The text next to the check box
TextAlign	On which side of the check box the text should appear (right or left)

```
<script  runat="server">
  Sub Check(sender As Object, e As EventArgs)
    if check1.Checked then
         work.Text=home.Text
    else
         work.Text=""
    end if
  End Sub
</script>
<html>
<body>
<form runat="server">
<p>Home Phone:
<asp:TextBox id="home" runat="server" />
<br />
Work Phone:
<asp:TextBox id="work" runat="server" />
<asp:CheckBox id="check1" Text="Same as home phone" TextAlign="Right"
AutoPostBack="True" OnCheckedChanged="Check" runat="server" />
</p>
</form>
</body>
</html>
```

Save as: Checkbox.aspx

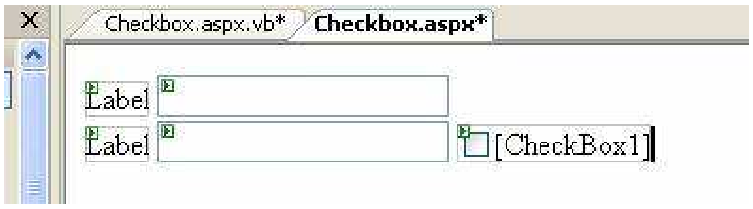


Home Phone: 330-455-4039
Work Phone: 330-455-4039 ☑ Same as home phone

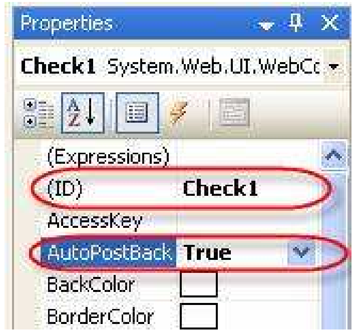
Alternative Method

Try This in Visual Studio:

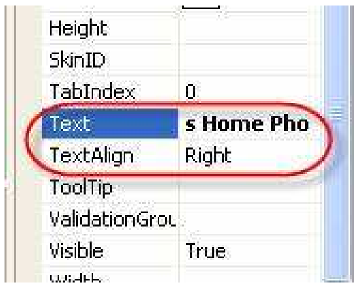
- Open Visual Studio
- Add a new webform
- Name it *checkbox.aspx*
- Click the *Add* button
- Select the *Design* View
- Add 2 labels and 2 textbox controls
- Add a checkbox control



- Change the text of the labels to:
  Work Phone:
  - Change the id property of the textboxes to:
  Home Work
  - Change the id of the checkbox to:
  Check1
  - Change the text of the checkbox to:
  Same as home phone
  - Change the textAlign property to *right*
  - Change AutoPostBack to *true*



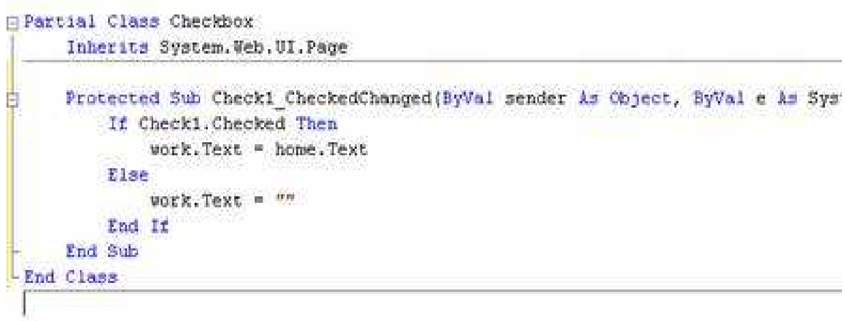
Check1 System.Web.UI.WebC	
(Expressions)	
(ID)	Check1
AccessKey	
AutoPostBack	True
BackColor	
BorderColor	



Height	
SkinID	
TabIndex	0
Text	s Home Pho
TextAlign	Right
ToolTip	
ValidationGrou	
Visible	True

- Double-click the checkbox
- Add this code:

```
If Check1.Checked Then
    work.Text = home.Text
Else
    work.Text = ""
End If
```



```
Partial Class Checkbox
    Inherits System.Web.UI.Page

    Protected Sub Check1_CheckedChanged(ByVal sender As Object, ByVal e As Sys
        If Check1.Checked Then
            work.Text = home.Text
        Else
            work.Text = ""
        End If
    End Sub
End Class
```

- Test it by pressing CTRL + F5

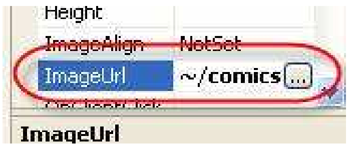
ImageButton

- The ImageButton control is used to display a clickable image.

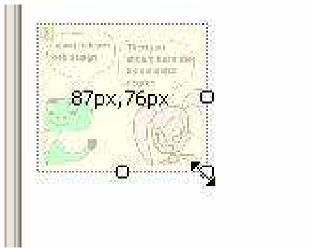
Property	Description
CausesValidation	By default, a page is validated when a Button control is clicked. To prevent a page from being validated when clicking on a Button control, set this property to "false"
id	A unique id for the control
ImageUrl	The URL of the image to display
OnClick	The name of the function to be executed when the image is clicked
runat	Specifies that the control is a server control. Must be set to "server"

Try This in Visual Studio:

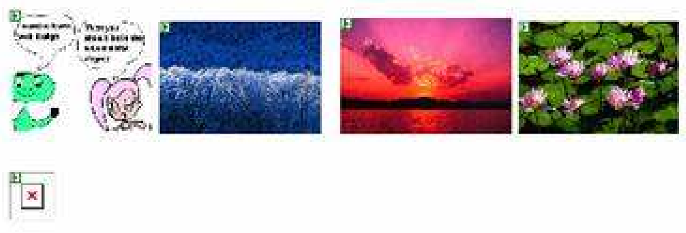
- Open Visual Studio
- Add a new webform
- Name it *imageButton.aspx*
- Click the *Add* button
- Select the *Design* View
- Add an ImageButton control to the webform
- Name it *smallImage1*
- Repeat it 3 more times, naming it *smallImage2*, *smallImage3*, *smallImage4*
- Add 4 images to your site
- Select the ellipsis in the ImageURL property and select the image in each imageButton
-



- Using the cursor change the size of the imageButtons down to a small button

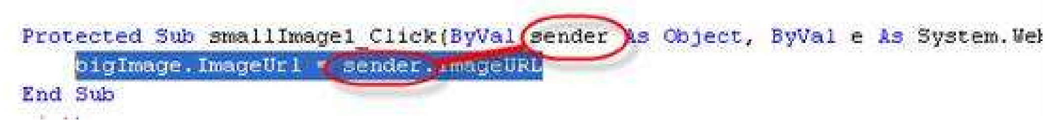


- Add an Image control and name it *bigImage*



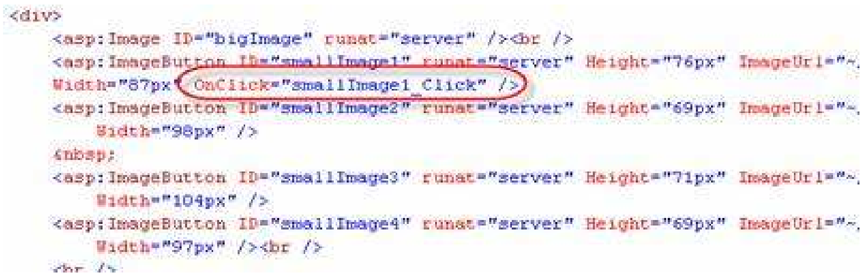
- Double click the imageButton and add this code:

bigImage.ImageUrl = sender.imageURL
We are going to use the same subroutine for each imagebutton So instead of using smallimage1.imageURL we use the imageURL of the sending object.That way it does not matter which imageButton is clicked, that image will get put into the image control



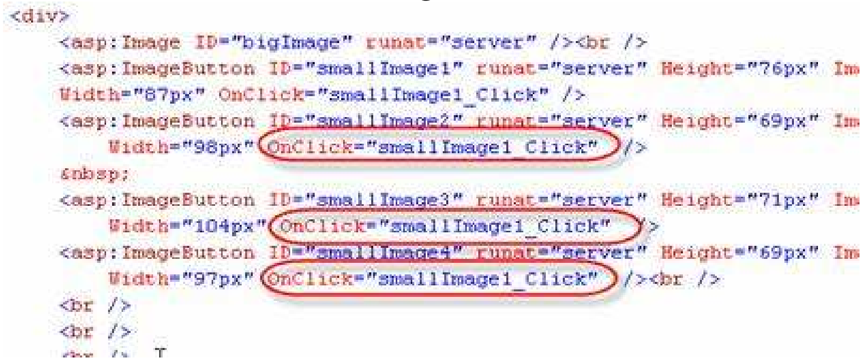
```
Protected Sub smallImage1_Click(ByVal sender As Object, ByVal e As System.Wel
    bigImage.ImageUrl = sender.imageURL
End Sub
```

- Scroll down to the code for the first imageButton and you will see the following code added:



```
<div>
    <asp:Image ID="bigImage" runat="server" /><br />
    <asp:ImageButton ID="smallImage1" runat="server" Height="76px" ImageUrl="~
    Width="87px" OnClick="smallImage1_Click" />
    <asp:ImageButton ID="smallImage2" runat="server" Height="69px" ImageUrl="~
        Width="98px" />
    &nbsp;
    <asp:ImageButton ID="smallImage3" runat="server" Height="71px" ImageUrl="~
        Width="104px" />
    <asp:ImageButton ID="smallImage4" runat="server" Height="69px" ImageUrl="~
        Width="97px" /><br />
```

- copy this code into each of the other imageButton controls



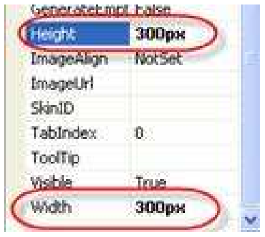
```
<div>
    <asp:Image ID="bigImage" runat="server" /><br />
    <asp:ImageButton ID="smallImage1" runat="server" Height="76px" Im
    Width="87px" OnClick="smallImage1_Click" />
    <asp:ImageButton ID="smallImage2" runat="server" Height="69px" Im
        Width="98px" OnClick="smallImage1_Click" />
    &nbsp;
    <asp:ImageButton ID="smallImage3" runat="server" Height="71px" Im
        Width="104px" OnClick="smallImage1_Click" />
    <asp:ImageButton ID="smallImage4" runat="server" Height="69px" Im
        Width="97px" OnClick="smallImage1_Click" /><br />
    <br />
    <br />
```

- test it

Another feature you may want to add:

- Select the image control
- Change the height and width properties to 300 each

This will keep the image size steady



GenerateEmptyAlt	False
Height	300px
ImageAlign	NotSet
ImageUrl	
SkinID	
TabIndex	0
ToolTip	
Visible	True
Width	300px

RadioButton

- The RadioButton control is used to display a radio button.
- RadioButtons are usually used in groups to allow the user to pick one from the group.
- All radioButtons in the same group must have the same groupName property

Property	Description
AutoPostBack	A Boolean value that specifies whether the form should be posted immediately after the Checked property has changed or not. Default is false
Checked	A Boolean value that specifies whether the radio button is checked or not
Id	A unique id for the control
GroupName	The name of the group to which this radio button belongs
OnCheckedChanged	The name of the function to be executed when the Checked property has changed
runat	Specifies that the control is a server control. Must be set to "server"
Text	The text next to the radio button
TextAlign	On which side of the radio button the text should appear (right or left)

```
<script  runat="server">
Sub submit(Sender As Object, e As EventArgs)
if red.Checked then
  Label1.Text="You selected " & red.Text
elseIf green.Checked then
  Label1.Text="You selected " & green.Text
elseIf blue.Checked then
  Label1.Text="You selected " & blue.Text
end if
End Sub
</script>
<html><body>
<form runat="server">
Select your favorite color: <br />
<asp:RadioButton id="red" Text="Red" Checked="True" GroupName="colors"
runat="server"/> <br />
<asp:RadioButton id="green" Text="Green" GroupName="colors" runat="server"/> <br />

<asp:RadioButton id="blue" Text="Blue" GroupName="colors" runat="server"/>
<br />
<asp:Button text="Submit" OnClick="submit" runat="server"/>
<p><asp:Label id="Label1" runat="server"/></p>
</form>
</body></html>
```

Determining if radioButton was checked: Save as: RadioButton.aspx

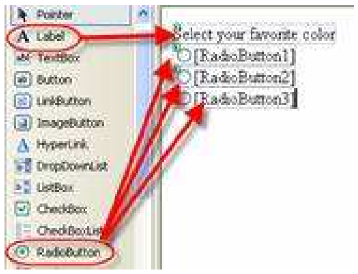
```
If radioButtonName.checked then ‘do code if checked
End if
```

Alternative Method

Try This in Visual Studio:

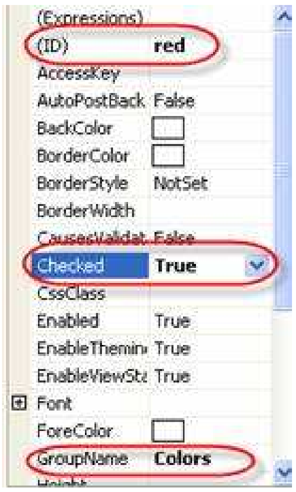
- Open Visual Studio
- Add a new webform
- Name it *radioEx.aspx*
- Click the *Add* button

- Select the *Design* View
- Add a label to the webform, change the text property to *Select your favorite color.* Change the id to lblPrompt
- Add an 3 radioButton controls to the webform



Select your favorite color
[RadioButton1]
[RadioButton2]
[RadioButton3]

- Change the id of the radioButtons to red, green, blue
- Change the text of the radioButtons to Red,Green, Blue
- Set the autoPostBack property for all 3 radioButtons to *true*
- Press the control key and select each of the radioButton controls then change the groupName of all of them to *Colors*
- Change the checked property of the first radioButton to *true*



```
(Expressions)
(ID)            red
AccessKey
AutoPostBack    False
BackColor
BorderColor
BorderStyle     NotSet
BorderWidth
CausesValidat   False
Checked         True
CssClass
Enabled         True
EnableThemin    True
EnableViewSt    True
Font
ForeColor
GroupName       Colors
```

- Add another label below these controls and change the id to *lblOutput,* clear the *text* property
- Double-click the first radioButton
- Look at the subroutine signature:

Protected Sub red_CheckedChanged(ByVal sender As Object, ByVal e As System.EventArgs) Handles red.CheckedChanged

Visual Studio creates a subroutine and named it red_checkedChanged that handles the *checkedChanged* event of the *red* radioButton control

- Change the subroutine name to getChanged.
- Add a comma at the end and add green.checkedChanged
- Add another comma and add Blue.checkChanged

This will set this one subroutine to handle all 3 radioButton's checkedChanged event

Protected Sub getChanged(ByVal sender As Object, ByVal e As System.EventArgs) Handles red.CheckedChanged, blue.CheckedChanged, Green.CheckedChanged

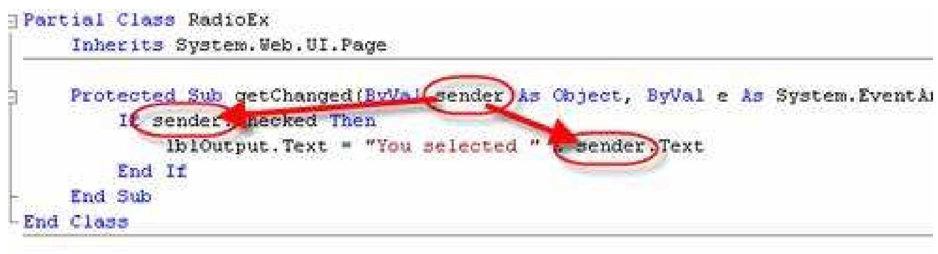
Add the following code to this subroutine:

If sender.Checked Then

lblOutput.Text = "You selected " & sender.Text

End If

Notice you are using the text from the sender object which will be passed into the subroutine



```
Partial Class RadioEx
    Inherits System.Web.UI.Page

    Protected Sub getChanged(ByVal sender As Object, ByVal e As System.EventA
        If sender.Checked Then
            lblOutput.Text = "You selected " & sender.Text
        End If
    End Sub
End Class
```

- test it

Literal Control

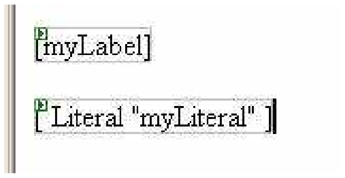
- The Literal control is used to display text on a page. The text is programmable.
- This control does not let you apply styles to its content!

Property	**Description**
id	A unique id for the control
runat	Specifies that the control is a server control. Must be set to "server"
Text	Specifies the text to display

Alternative Method

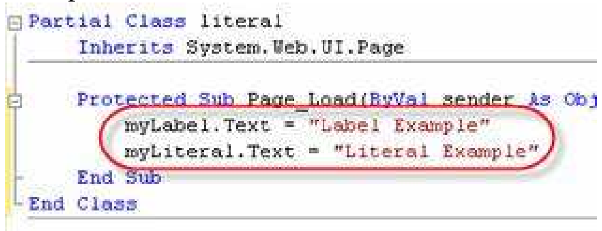
Try This in Visual Studio:

- Open Visual Studio
- Add a new webform
- Name it *literal.aspx*
- Click the *Add* button
- Select the *Design* View
- Add a label control and name it myLabel
- Add a literal control to the webform and name it myLiteral
- Erase the text in both controls



- Double-click the form and add this code:

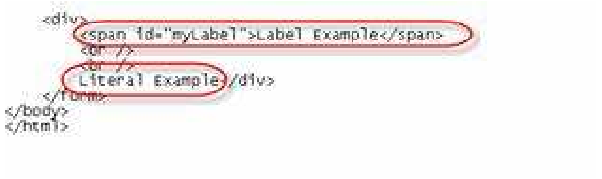
myLabel.text=”Label Example”
myLiteral.text=”Literal Example”



```
Partial Class literal
    Inherits System.Web.UI.Page

    Protected Sub Page_Load(ByVal sender As Obj
        myLabel.Text = "Label Example"
        myLiteral.Text = "Literal Example"
    End Sub
End Class
```

right click and view in Browser
now right click the browser and view source



```
    <div>
        <span id="myLabel">Label Example</span>
        <br />
        <br />
        Literal Example</div>
    </form>
</body>
</html>
```

Notice the Label is displayed in a <span> tag
But the literal is just displayed
A literal control displays ONLY the value in the text property

Panel Control

- The Panel control is used as a container for other controls.
- This control is often used to generate controls by code and to display and hide groups of controls.
- This control renders as an HTML <div> element.

Property	Description
BackImageUrl	Specifies a URL to an image file to display as a background for this control
HorizontalAlign	Specifies the horizontal alignment of the content. Legal values are: Center ,Justify ,Left ,NotSet ,Right.
id	A unique id for the control
runat	Specifies that the control is a server control. Must be set to "server"
Wrap	A Boolean value that specifies whether the content should wrap or not

Try this:

```
<script  runat="server">
Sub Page_Load(sender As Object, e As EventArgs)
  if check1.Checked then
    panel1.Visible=false
  else
    panel1.Visible=true
  end if
End Sub
</script>
<html>
<body>
<form runat="server">
<asp:Panel id="panel1" runat="server" BackColor="#ff0000" Height="100px"
Width="100px">
Hello World!
</asp:Panel>
<asp:CheckBox id="check1" Text="Hide Panel control" runat="server"/>
<br /><br />
<asp:Button Text="Reload" runat="server" />
</form>
</body>
</html>
```

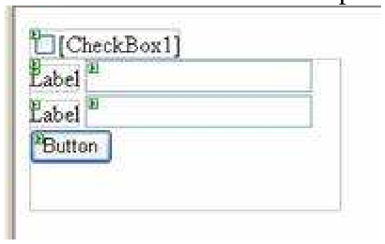
Save as: Panel.aspx

Alternative Method

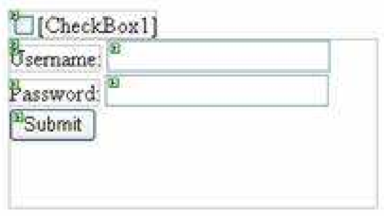
Try This in Visual Studio:

- Open Visual Studio
- Add a new webform
- Name it *Panel.aspx*
- Click the *Add* button
- Select the *Design* View
- Add a checkbox control and name it chkDisplay
- Add a panel control and name it pnlDisplay
    - o You can make it larger by dragging the corners out

- Add 2 label, 2 textboxes and a button control into the panel control

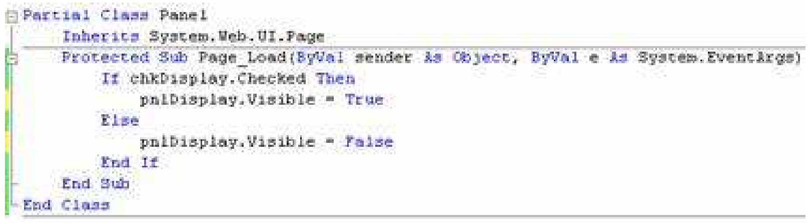


- Change the text properties of the labels to Username and Password.
- Change the text of the button control to Submit



- Select the checkbox and set the autoPostback property to true
- Change the text to Display Login
- Double-click the form and add this code:

If chkDisplay.Checked Then
pnlDisplay.Visible = True
Else
pnlDisplay.Visible = False
End If



```
Partial Class Panel
    Inherits System.Web.UI.Page
    Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)
        If chkDisplay.Checked Then
            pnlDisplay.Visible = True
        Else
            pnlDisplay.Visible = False
        End If
    End Sub
End Class
```

- test it

LinkButton

- The LinkButton control is used to create a hyperlink button.
- This control looks like a HyperLink control but has the same functionality as the Button control!

Property	**Description**
CausesValidation	By default, a page is validated when a Button control is clicked. To prevent a page from being validated when clicking on a Button control, set this property to "false"
Command	The command associated with the Command event
CommandArgument	Additional information about the command to perform
id	A unique id for the control
OnClick	The name of the function to be executed when the link is clicked
runat	Specifies that the control is a server control. Must be set to "server"
Text	The text to display for the link

Try this:

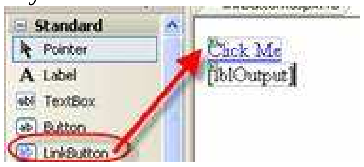
```
<script  runat="server">
Sub lblClick(sender As Object, e As EventArgs)
   Label1.Text="You clicked the LinkButton control"
End Sub
</script>
<html>
<body>
<form runat="server">
<asp:LinkButton Text="Click me!" OnClick="lblClick" runat="server" />
<p><asp:Label id="Label1" runat="server" /></p>
</form>
</body>
</html>
```

Save as: LinkButton.aspx

Alternative Method

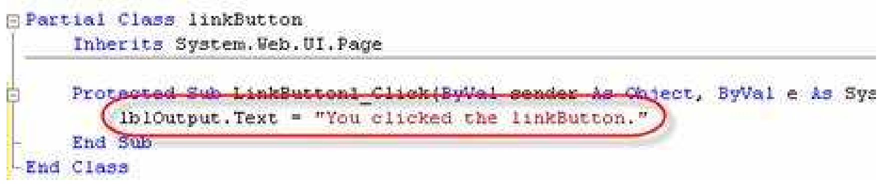
Try This in Visual Studio:

- Open Visual Studio
- Add a new webform
- Name it *linkButton.aspx*
- Click the *Add* button
- Select the *Design* View
- Add a linkButton to the webform
  - o Change the text property to Click Me
- Add a label control
  - o Change the id to lblOutput
  - o Erase the text property of the label control



- Double-click the hyperlink control
- Add this code:

lblOutput.text=”You clicked the linkButton.”



```
Partial Class linkButton
    Inherits System.Web.UI.Page

    Protected Sub LinkButton1_Click(ByVal sender As Object, ByVal e As Sys
        lblOutput.Text = "You clicked the linkButton."
    End Sub
End Class
```

- test it

Calendar

- The Calendar control is used to display a calendar in the browser.
- This control displays a one-month calendar that allows the user to select dates and move to the next and previous months.

Property	**Description**
CellPadding	The space, in pixels, between the cell walls and contents
CellSpacing	The space, in pixels, between cells
DayHeaderStyle	The style for displaying the names of the days
DayNameFormat	The format for displaying the names of the days. Can take one of the following values: • FirstLetter • FirstTwoLetters • Full • Short
DayStyle	The style for displaying days
FirstDayOfWeek	What should be the first day of week. Can take one of the following values: • Default • Monday • Tuesday • Wednesday • Thursday • Friday • Saturday • Sunday
id	A unique id for the control
NextMonthText	The text displayed for the next month link
NextPrevFormat	The format of the next and previous month links. Can take one of the following values: • ShortMonth • FullMonth • CustomText
NextPrevStyle	The style for displaying next and previous month links
OnDayRender	The name of the function to be executed when when each day cell is created
OnSelectionChanged	The name of the function to be executed when the user selects a day, week, or month
OnVisibleMonthChanged	The name of the function to be executed when the user navigates to a different month
OtherMonthDayStyle	The style for displaying days that are not in the current month
PrevMonthText	The text displayed for the previous month link
runat	Specifies that the control is a server control. Must be set to

	"server"
SelectedDate	The selected date
SelectedDates	The selected dates
SelectedDayStyle	The style for selected days
SelectionMode	How a user is allowed to select dates. Can take one of the following values: • None • Day • DayWeek • DayWeekMonth
SelectMonthText	The text displayed for the month selection link
SelectorStyle	The style for the month and weeks selection links
SelectWeekText	The text displayed for the week selection link
ShowDayHeader	A Boolean value that specifies whether the days of the week header should be shown
ShowGridLines	A Boolean value that specifies whether the grid lines between days should be shown
ShowNextPrevMonth	A Boolean value that specifies whether the next and previous month links should be shown
ShowTitle	A Boolean value that specifies whether the title of the calendar should be shown
TitleFormat	The format for the title of the calendar. Can take one of the following values: • Month • MonthYear
TitleStyle	The style of the title of the calendar
TodayDayStyle	The style for today's date
TodaysDate	Today's date
VisibleDate	The date that specifies the month that is currently visible in the calendar
WeekendDayStyle	The style for weekends

Simplest Calendar example, try this:

```
<html>
<body>
<form runat="server">

<asp:Calendar runat="server" />
</form>
</body>
</html>
```

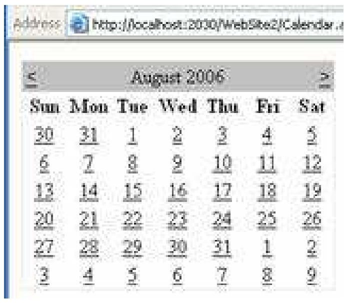
Save as: Calendar1.aspx

Alternative Method

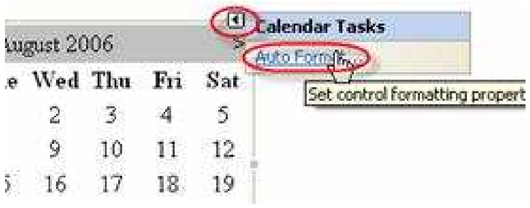
Try This in Visual Studio:

- Add a new webform
- Name it *Calendar.aspx*
- Add a calendar control, name it *myCalendar*
- Test it

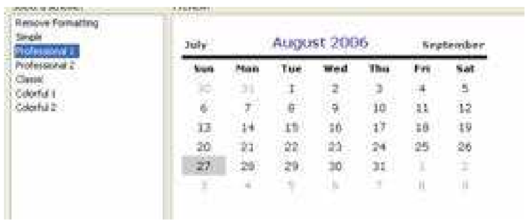
It display the calendar with the current month

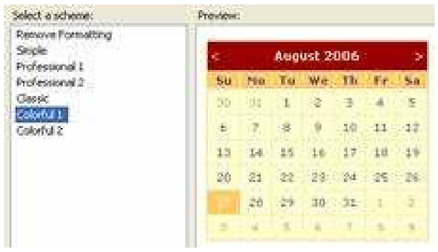

Address http://localhost:2030/WebSite2/Calendar.a
August 2006
Sun Mon Tue Wed Thu Fri Sat

- Click the arrow at the top right of the Calendar control

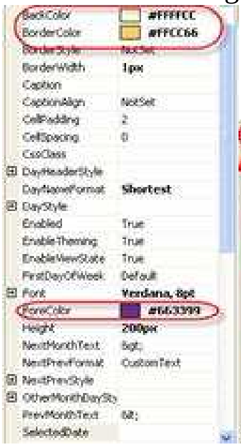


- Select a scheme:

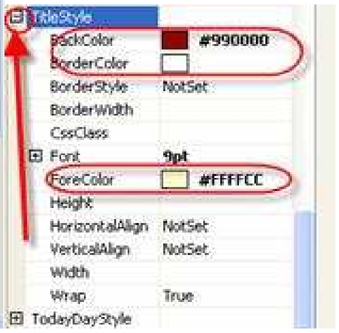




Notice the various properties that were changed. You can change them further if you like

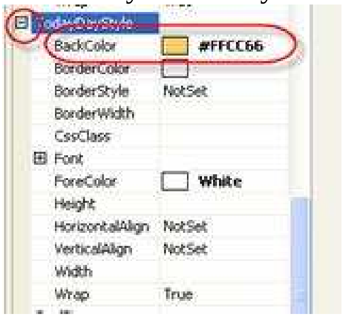


BackColor	#FFFFCC
BorderColor	#FFCC66
BorderStyle	NotSet
BorderWidth	1px
Caption	
CaptionAlign	NotSet
CellPadding	2
CellSpacing	0
CssClass	
⊞ DayHeaderStyle	
DayNameFormat	Shortest
⊞ DayStyle	
Enabled	True
EnableTheming	True
EnableViewState	True
FirstDayOfWeek	Default
⊞ Font	Verdana, 8pt
ForeColor	#663399
Height	200px
NextMonthText	&gt;
NextPrevFormat	CustomText
⊞ NextPrevStyle	
⊞ OtherMonthDaySty	
PrevMonthText	&lt;
SelectedDate	



⊟ TitleStyle	
BackColor	#990000
BorderColor	
BorderStyle	NotSet
BorderWidth	
CssClass	
⊞ Font	9pt
ForeColor	#FFFFCC
Height	
HorizontalAlign	NotSet
VerticalAlign	NotSet
Width	
Wrap	True
⊞ TodayDayStyle	

The follow allows you to show the current day differently

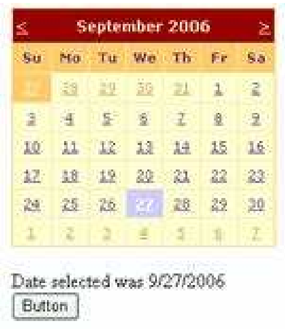


⊟ TodayDayStyle	
BackColor	#FFCC66
BorderColor	
BorderStyle	NotSet
BorderWidth	
CssClass	
⊞ Font	
ForeColor	White
Height	
HorizontalAlign	NotSet
VerticalAlign	NotSet
Width	
Wrap	True

- Add a label and button control, name the label *lblDisplay*

Double click the button and add this code:
lblDisplay.Text = "Date selected was " & myCalendar.SelectedDate.ToShortDateString()

- Test it



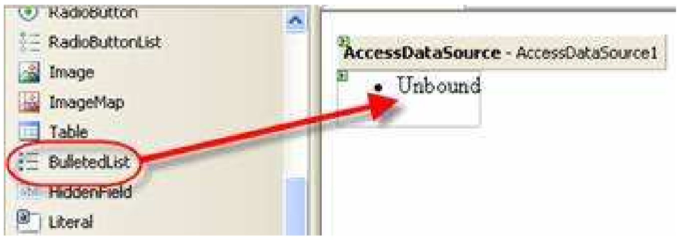
BulletedList Control

The bulletedList Control renders as either an ordered list (numbered)or unordered list(bulleted)

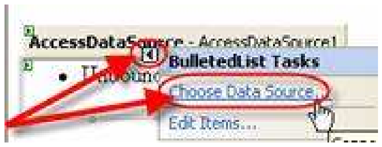
Each list can be rendered as:

- Plain text
- A LinkButton Control
- Link to another page

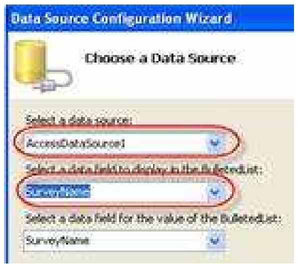
- Open Visual Studio
- Add a new webform
- Name it *Bulleted.aspx*
- Add a DataSource Control and set it to a database table



- Add a BulletedList control
- Click the smart tag and *Choose Data Source*

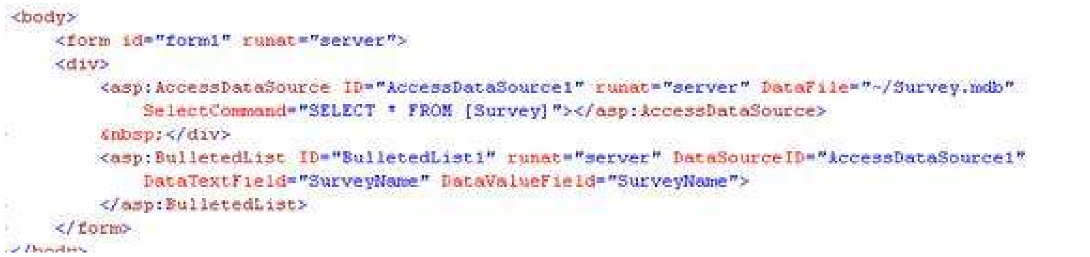


- Select the Data Source you added earlier
- Select the field to display



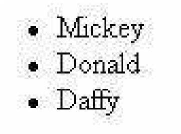
Select a data source: AccessDataSource1
Select a data field to display in the BulletedList: SurveyName
Select a data field for the value of the BulletedList: SurveyName

Look at the code:



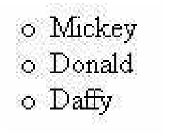
```
<body>
    <form id="form1" runat="server">
    <div>
        <asp:AccessDataSource ID="AccessDataSource1" runat="server" DataFile="~/Survey.mdb"
            SelectCommand="SELECT * FROM [Survey]"></asp:AccessDataSource>
        &nbsp;</div>
        <asp:BulletedList ID="BulletedList1" runat="server" DataSourceID="AccessDataSource1"
            DataTextField="SurveyName" DataValueField="SurveyName">
        </asp:BulletedList>
    </form>
</body>
```

- Right click the page and select *View in Browser*

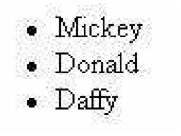


- Mickey
- Donald
- Daffy

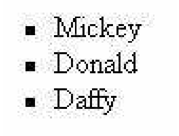
You can change the appearance for each list item using the *BulletStyle* property



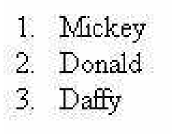
○ Mickey
○ Donald
○ Daffy



- Mickey
- Donald
- Daffy

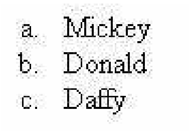


▪ Mickey
▪ Donald
▪ Daffy

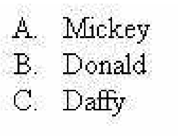


1. Mickey
2. Donald
3. Daffy

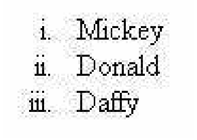
Circle Disc Square Numbered



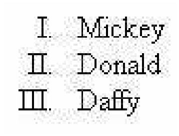
a. Mickey
b. Donald
c. Daffy



A. Mickey
B. Donald
C. Daffy

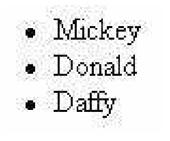


i. Mickey
ii. Donald
iii. Daffy

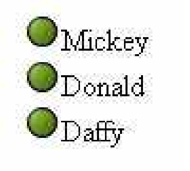


I. Mickey
II. Donald
III. Daffy

LowerAlpha UpperAlpha LowerRoman UpperRoman



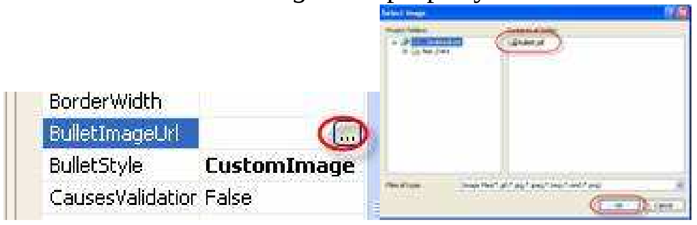
- Mickey
- Donald
- Daffy



● Mickey
● Donald
● Daffy

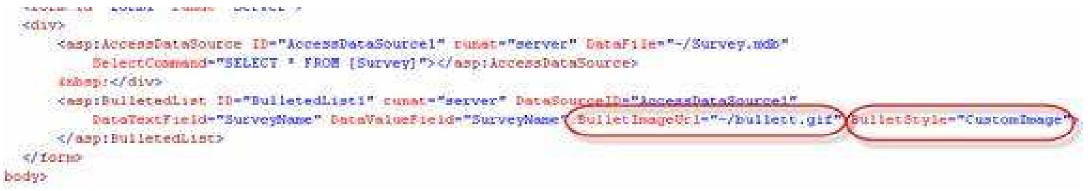
NotSet Custom Image

In Custom Image you must set the *BulletImageURL* property



BorderWidth
BulletImageUrl
BulletStyle CustomImage
CausesValidation False

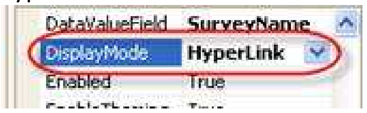
Here's the code:



```
    <div>
        <asp:AccessDataSource ID="AccessDataSource1" runat="server" DataFile="~/Survey.mdb"
            SelectCommand="SELECT * FROM [Survey]"></asp:AccessDataSource>
        &nbsp;</div>
        <asp:BulletedList ID="BulletedList1" runat="server" DataSourceID="AccessDataSource1"
            DataTextField="SurveyName" DataValueField="SurveyName" BulletImageUrl="~/bullett.gif" BulletStyle="CustomImage">
        </asp:BulletedList>
    </form>
body>
```

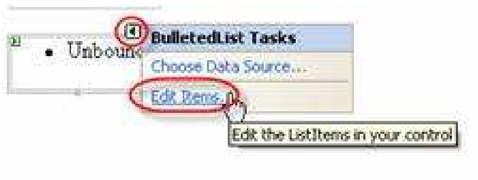
You can modify the function of each list item by changing the *DisplayMode* property

- Hyperlink
    - Item is rendered as a link to another page
- LinkButton
    - Item is rendered as a LinkButton control
- Text
    - Item is rendered as plain text
- Add another BulletedList control
- Change the DisplayMode to Hyperlink

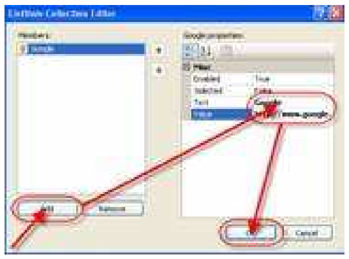


DataValueField SurveyName
DisplayMode HyperLink
Enabled True

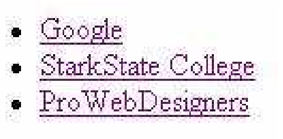
- Click the smart tag and select *Edit items*



- Click the add button



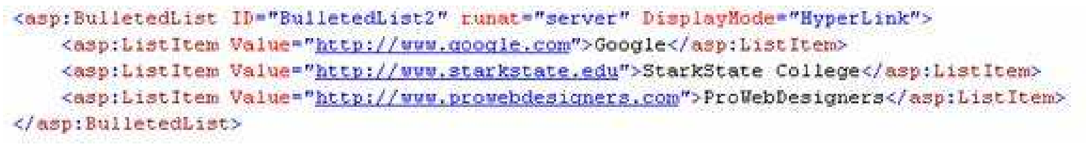
- Add *Google* in the text property
- Add *http://www.google.com* in the value property



- Google
- StarkState College
- ProWebDesigners

- Add two more, pick any website

Here is the code:



```
<asp:BulletedList ID="BulletedList2" runat="server" DisplayMode="HyperLink">
    <asp:ListItem Value="http://www.google.com">Google</asp:ListItem>
    <asp:ListItem Value="http://www.starkstate.edu">StarkState College</asp:ListItem>
    <asp:ListItem Value="http://www.prowebdesigners.com">ProWebDesigners</asp:ListItem>
</asp:BulletedList>
```

FileUpload Control

The FileUpload Control allow you to upload files to the server

Try This in Visual Studio:

- Open Visual Studio
- Add a new webform
- Name it *fileUpload.aspx*
- Add a label control and name is *message*
- Add a button control
- Double click the button and add this code:

```
If Page.IsValid Then
Try
FileUpload1.SaveAs( String.Concat( "C:\", FileUpload1.FileName))
message.Text = String.Concat( "The file '", FileUpload1.FileName, "' was successfully uploaded")
Catch ex As Exception
message.Text = String.Concat( "An error occurred uploading the file ", FileUpload1.FileName, "'
– ", ex.Message)
End Try
End If
```

- Add a customValidator Control
- Double-click the validator control and add this code:

```
'Verify the control has a file
If Not FileUpload1.HasFile Then
CustomValidator1.ErrorMessage = "A file is required in order to proceed"
args.IsValid = False
Else
```

```
Dim ext As String =
System.Web.VirtualPathUtility.GetExtension(FileUpload1.FileName).ToUpper()
If Not ext = ".GIF" And Not ext = ".JPG" Then
CustomValidator1.ErrorMessage = String.Concat( "Invalid file type '", etx, "' - must be .gif or .jpg
to continue")
args.IsValid = False
Else
args.IsValid = True
End If
End If
```

- Test it

User Controls

A user control allows you to package frequently used user interfaces and the processing logic in a way that can be used as a pluggable component

Use Web User Controls to create reusable page elements

- Headers
- Footers
- Navigation bars
- Menus

You can also use them to create new controls out of other multiple controls

Code Example:

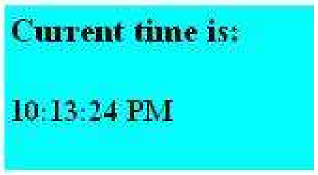
1	<%@ Control Classname=”MyTime” %>
2	<table width=”40%” bgcolor=”cyan”>
3	<tr>
4	<td><h3>Current time is:</h3></td>
5	</tr>
6	<tr>
7	<td><h4> <%=Now.toString(“hh:mm:ss tt”)%> </h4></td>
8	</tr>
9	</table>

Save as: Time.ascx

- This code gets the current time from the server
- The user control is saved with a .ascx extension
- The server doesn’t allow you to load the .ascx file directly in your browser. A user control can only be requested from within a web form

1	<%@Register TagPrefix=”TimeControl” Tagname=”MyTime” Src=”time.ascx” %>
2	<html><head></head><body>
3	<TimeControl:MyTime id=”MyTime1” runat=”server” />
4	</body></html>

Save as: GetTime.aspx



Current time is:

10:13:24 PM

- TagPrefix
    - Namespace the user control belongs to
- Tagname
    - Name the user control is recognized by
- Src
    - Virtual path to the source code file of the user control

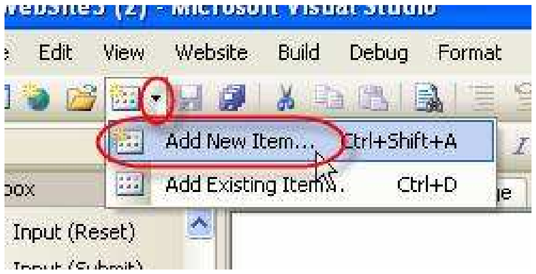
User Controls can be composed of HTML controls, ASP.Net server controls, client-side scripts and other user controls\

- User controls always end in .ASCX
- User Controls cannot be requested from the server directly
- If the web form that you are converting to a user control has a @page directive then change it to a @Control directive

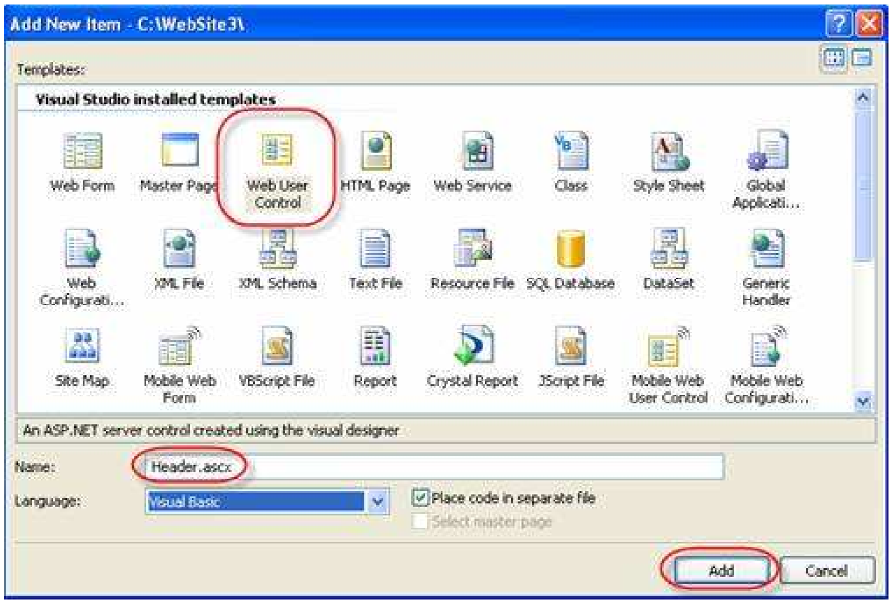
Try This in Visual Studio:

Open Visual Studio

- Add a new item to your website, select *User Control*


WebSite3 (2) - Microsoft Visual Studio
Edit
View
Website
Build
Debug
Format
Add New Item... Ctrl+Shift+A
Add Existing Item... Ctrl+D
Input (Reset)

- Name it *Header.ascx* and click *Open*



An ASP.NET server control created using the visual designer

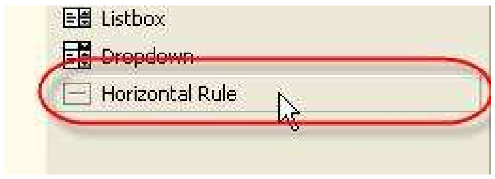
Name: Header.ascx

Language: Visual Basic

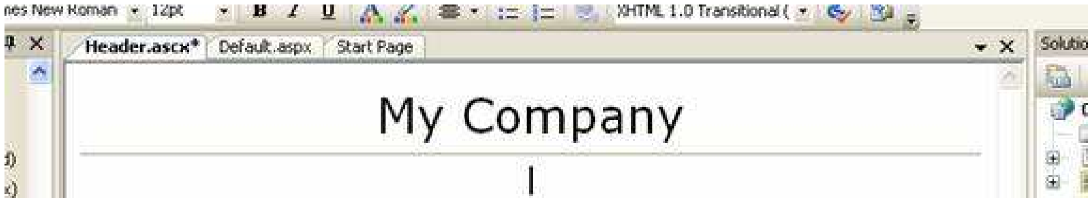
[✓] Place code in separate file

[ ] Select master page

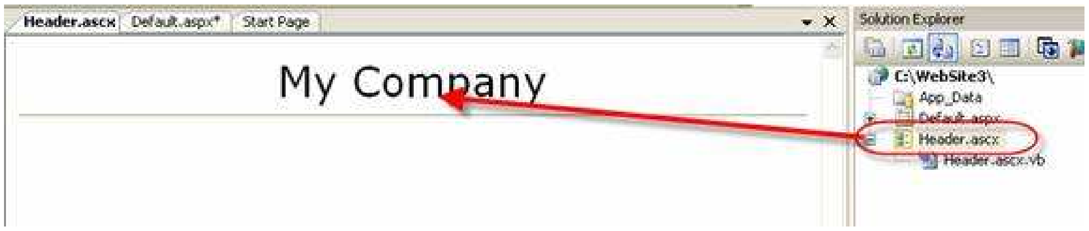
- Type Your Company Name at the top and center it
- Add a horizontal Rule from the HTML tab of the toolbox



- Adjust the properties as you like and save it



- Add a new web form page and call it Main.aspx
- Drag the Header.ascx from the solution explorer to the page



- Test it

Handling Events:

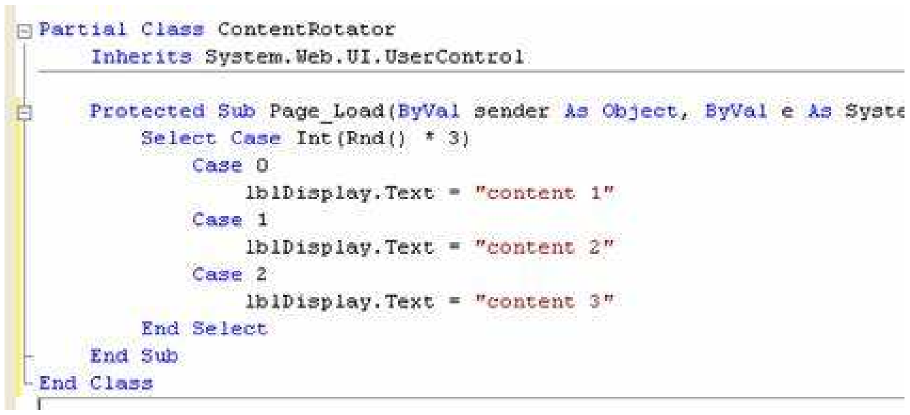
Example:

- Add another web user control and call it

contentRotator.ascx

- Add a label control, call it *lblDisplay,* erase the *text* property
- Double-Click the page and add the following code to the

```
page_load event
  Select Case Int(Rnd()*3)
  Case 0
    lblDisplay.text="content 1"
  Case 1
    lblDisplay.text="content 2"
  Case 2
    lblDisplay.text="content 3"
  End Select
```



```
Partial Class ContentRotator
    Inherits System.Web.UI.UserControl

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As Syste
        Select Case Int(Rnd() * 3)
            Case 0
                lblDisplay.Text = "content 1"
            Case 1
                lblDisplay.Text = "content 2"
            Case 2
                lblDisplay.Text = "content 3"
        End Select
    End Sub
End Class
```

- The page_load in a web user control loads differently
- First the page_load in the containing page executes and then the user control's page_load executes
- Drag the contentRotator.ascx to your aspx page
- Test it
- Right-click and refresh browser a few times

Placeholder

The placeholder control saves a spot for you to programmatically add or remove controls.

You can add or remove as many controls as you want to the placeholder control

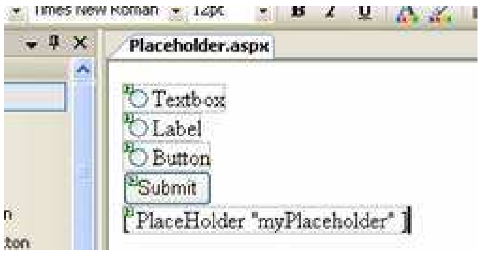
Use the Add method to add controls to the placeholder

Use the remove method to remove them

Try This in Visual Studio:

- Open Visual Studio
- Add a new webform
- Name it *Placeholder.aspx*
- Click the *Add* button
- Select the *Design* View
- Add 3 RadioButton controls
  - Name then
    - Opttextbox
    - Optlabel
    - Optbutton
  - Set the text properties to
    - Textbox
    - Label
    - Button
  - Set the groupName of them all to *controlType*
  - *Set the autoPostback properties to true for all 3*
- Add a button control
  - Set the name to btnSubmit

    - Set the text to Submit
- Add a Placeholder control
    - Name it myPlaceholder

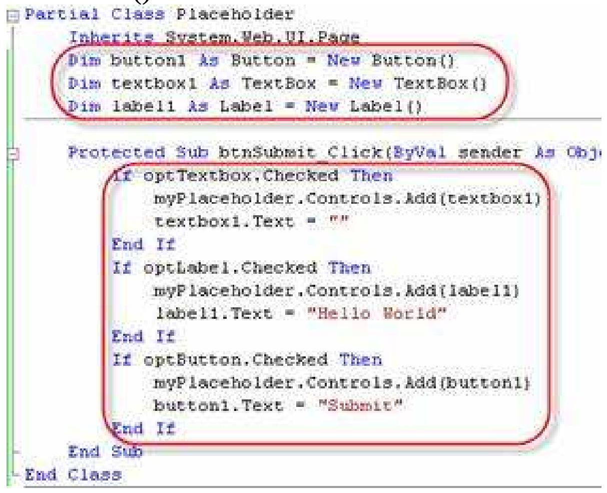


- Double-click the button and add this code:

```
If optTextbox.Checked Then
        myPlaceholder.Controls.Add(textbox1)
        textbox1.Text = ""
End If
If optLabel.Checked Then
        myPlaceholder.Controls.Add(label1)
        label1.Text = "Hello World"
End If
If optButton.Checked Then
        myPlaceholder.Controls.Add(button1)
        button1.Text = "Submit"
End If
```

- Above the subroutine add this code:

```
Dim button1 As Button = New Button()
Dim textbox1 As TextBox = New TextBox()
Dim label1 As Label = New Label()
```



```
Partial Class Placeholder
    Inherits System.Web.UI.Page
    Dim button1 As Button = New Button()
    Dim textbox1 As TextBox = New TextBox()
    Dim label1 As Label = New Label()

    Protected Sub btnSubmit_Click(ByVal sender As Obj
        If optTextbox.Checked Then
            myPlaceholder.Controls.Add(textbox1)
            textbox1.Text = ""
        End If
        If optLabel.Checked Then
            myPlaceholder.Controls.Add(label1)
            label1.Text = "Hello World"
        End If
        If optButton.Checked Then
            myPlaceholder.Controls.Add(button1)
            button1.Text = "Submit"
        End If
    End Sub
End Class
```

Code Example:

1	Dim button1 As Button = New Button()
2	Dim textbox1 As TextBox = New TextBox()
3	Dim label1 As Label = New Label()

Explanation:

1	Dynamically creates a button control in memory
2	Dynamically creates a textbox control in memory
3	Dynamically creates a label control in memory

Code Example:	
1	If optTextbox.Checked Then
2	myPlaceholder.Controls.Add(textbox1)
3	textbox1.Text = ""
4	End If
5	If optLabel.Checked Then
6	myPlaceholder.Controls.Add(label1)
7	label1.Text = "Hello World"
8	End If
9	If optButton.Checked Then
10	myPlaceholder.Controls.Add(button1)
11	button1.Text = "Submit"
12	End If

Explanation:	
1	Check to see if the first radioButton is checked
2	If it is checked add the textbox control that was created dynamically to the controls collection of the placeholder
3	Erase the default text on the textbox
4	End the if statement
5	Check to see if the second radioButton is checked
6	If it is checked add the label control that was created dynamically to the controls collection of the placeholder
7	Change the default text on the label to *Hello World*
8	End the if statement
9	Check to see if the third radioButton is checked
10	If it is checked add the button control that was created dynamically to the controls collection of the placeholder
11	Change the default text on the button to *Submit*
12	End the if statement

Lesson 6: A few more elements

Did you manage to make a few pages on your own? If not, here is an example:

```
<html>
  <head>
  <title>My website</title>
  </head>
  <body>
  <h1>A Heading</h1>
  <p>text, text text, text</p>
  <h2>Subhead</h2>
  <p>text, text text, text</p>
  </body>
</html>
```

Now what?

Now it is time to learn seven new elements.
In the same way you emphasise the text by putting it between the openning tag `<em>` and the closing tag `</em>`, you can give stronger emphasis by using the openning tag `<strong>` and the closing tag `</strong>`.

Example 1:

```
                <strong>Stronger emphasis.</strong>
Will look like this in the browser:
```

Stronger emphasis.

Likewise, you can make your text smaller using `small`:

Example 2:

```
                <small>This should be in small.</small>

        Will look like this in the browser:
```

This should be in small.

Can I use several elements at the same time?

You can easily use several elements at the same time as long as you **avoid overlapping elements**. This is best illustrated by an example:

Example 3:

If you want to emphasise small text, it must be done like this:

```
                <em><small>Emphasised small text</small></em>
And NOT like this:
                <em><small>Emphasise small text</em></small>
```

The difference is that in the first example, we closed the tag we first opened last. This way we avoid confusing both ourselves and the browser.

More elements!

As mentioned in Lesson 3 **there are elements which are opened and closed in the same tag**. These so-called empty elements are not connected to a specific passage in the text but rather are isolated labels. An example of such a tag is `<br />` which creates a forced line break:

Example 4:

```
                Some text<br /> and some more text in a new line Will look like
this in the browser:
```

Some text

and some more text in a new line

Notice that the tag is written as a contraction of an opening and closing tag with an empty space and a forward slash at the end: `<br />`.

Another element that is opened and closed in the same tag is `<hr />` which is used to draw a horizontal line ("hr" stands for "horizontal rule"):

Example 5:

```
        <hr />
        Will look like this in the browser:
```

Examples of elements that needs both an opening tag and a closing tag - as most elements do - is `ul`, `ol` and `li`. These elements are used when you want to make lists.

`ul` is short for "unordered list" and inserts bullets for each list item. `ol` is short for "ordered list" and numbers each list item. To make items in the list use the `li` tag ("list item"). Confused? See the examples:

Example 7:

```
        <ul>
          <li>A list item</li>
          <li>Another list item</li>
        </ul>
will look like this in the browser:
```

- A list item
- Another list item

Example 8:

```
        <ol>
          <li>First list item</li>
          <li>Second list item</li>
        </ol>
```

will look like this in the browser:

1. First list item
2. Second list item

Phew! Is that all?

That is all for now. Again, experiment and make your own pages using some of the seven new elements you learned in this lesson:

```
        <strong>Stronger emphasis</strong>
        <small>Small text</small>
        <br /> Line shift
        <hr /> Horizontal line
        <ul>List</ul>
        <ol>Ordered list</ol>
        <li>List item</li>
```

Lists

ArrayList-A collection of items containing a single data value.
Use the Add method to add items to the ArrayList

Example:

```
<script runat="server">
  Sub Page_Load
    if Not Page.IsPostBack then
      dim Munsters=New ArrayList

       Munsters.Add("Herman")
      Munsters.Add("Lily")
      Munsters.Add("Grandpa")
      Munsters.Add("Eddie")
      Munsters.Add("Marylyn")
    end if
  end sub
</script>
```

An ArrayList object contains 16 entries by default.
You can resize an ArrayList with the TrimToSize() method:

Example:

```
<script runat="server">
  Sub Page_Load
    if Not Page.IsPostBack then
      dim Munsters=New ArrayList

       Munsters.Add("Herman")
      Munsters.Add("Lily")
      Munsters.Add("Grandpa")
      Munsters.Add("Eddie")
```

```
        Munsters.Add("Marylyn")
        Munsters.TrimToSize()
      end if
   end sub
</script>
```

You can sort an ArrayList alphabetically or numerically with Sort()

Example:

```
<script runat="server">
   Sub Page_Load
      if Not Page.IsPostBack then
         dim Munsters=New ArrayList
          Munsters.Add("Herman")
         Munsters.Add("Lily")
         Munsters.Add("Grandpa")
         Munsters.Add("Eddie")
         Munsters.Add("Marylyn")
         Munsters.TrimToSize()
         Munsters.Sort()
      end if
   end sub
</script>
```

You can sort in reverse order using Reverse() after the Sort() method

Example:

```
<script runat="server">
   Sub Page_Load
      if Not Page.IsPostBack then
         dim Munsters=New ArrayList
          Munsters.Add("Herman")
         Munsters.Add("Lily")
         Munsters.Add("Grandpa")
         Munsters.Add("Eddie")
         Munsters.Add("Marylyn")
         Munsters.TrimToSize()
         Munsters.Sort()
         Munsters.Reverse()
      end if
   end sub
</script>
```

List Controls

3 types

1. Simple List Controls
    1. CheckboxList
    2. DropDownList
    3. Listbox
    4. RadioButtonList
2. RepeaterControl
    1. Repeater
3. ComplexListControls
    1. DataList
    2. DataGrid

Common Properties of List Controls

Property	**Description**
AutoPostBack	Postback occurs then user changes list selection
DataMember	Table
DataSource	dataSource
DataTextField	Field in the dataSource to use
DataTextFormatString	Formatting string that controls the format of the data
DataValueField	What field in the data source provides the value of each list item
Items	Collection of items in the list control
SelectedIndex	Lowest index of the selected items
SelectedItem	Item selected with the lowest index in the list control

Events:

OnSelectedIndexChanged

Called whenever the selection of the list control changes and is posted back to the server.

CheckBoxList

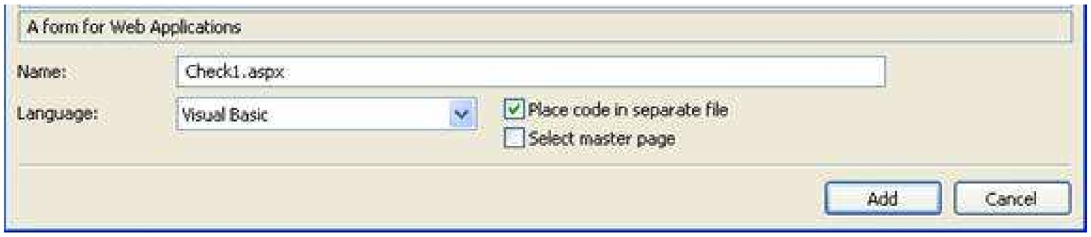
Properties ofCheckBoxList

Property	**Description**
CellPadding	Between border and contents of the cell
CellSpacing	Distance between cells
RepeatColumns	How many columns to display in checkboxlist control
RepeatDirection	Vertical or Horizontal
RepeatLayout	Flow or Layout(default)
TextAlign	Left or Right

Bind checkBoxList to an Array

Try This in Visual Studio:

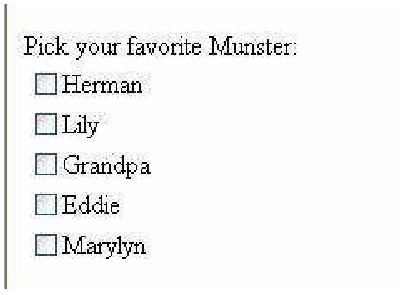
- Open Visual Studio
- Add a new webform call it *check1.aspx*



- Type *Pick your favorite Munster:*
- Drag a checkBoxList control to the page
- Name it *chkMunster*
- Double-click the page and add this code in the page_load:

dim Munsters=New ArrayList Munsters.Add("Herman") Munsters.Add("Lily") Munsters.Add("Grandpa") Munsters.Add("Eddie") Munsters.Add("Marylyn") Munsters.TrimToSize() if Not Page.IsPostBack then chkMunsterList.DataSource= Munsters dataBind() end if

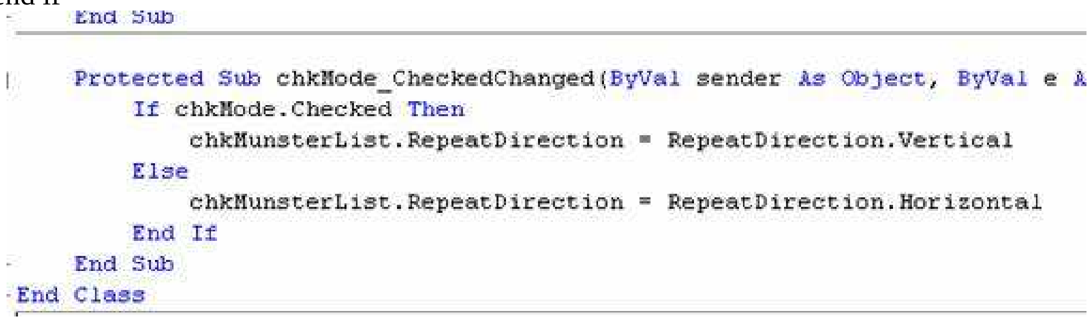
- Test it



Now Let's add additional code to change how the checkboxlist displays:

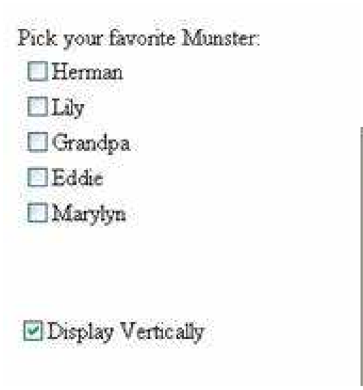
- Add a checkbox control
  - Name it *chkMode*
  - Set text to *Display Vertically*
  - Set checked to *true*
  - Set autopostback to *true*
- Double-click the checkbox and add this code:

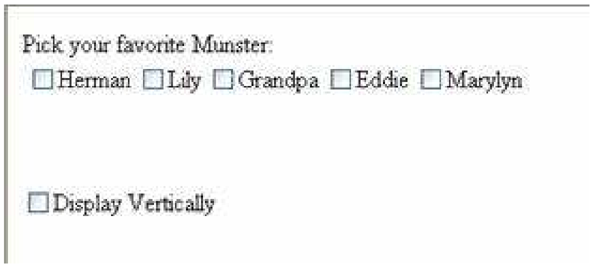
If chkMode.checked then
chkMunsterList.RepeatDirection=RepeatDirection.Vertical
else
chkMunsterList.RepeatDirection=RepeatDirection.horizontal
end if



```
    End Sub

    Protected Sub chkMode_CheckedChanged(ByVal sender As Object, ByVal e A
        If chkMode.Checked Then
            chkMunsterList.RepeatDirection = RepeatDirection.Vertical
        Else
            chkMunsterList.RepeatDirection = RepeatDirection.Horizontal
        End If
    End Sub
End Class
```



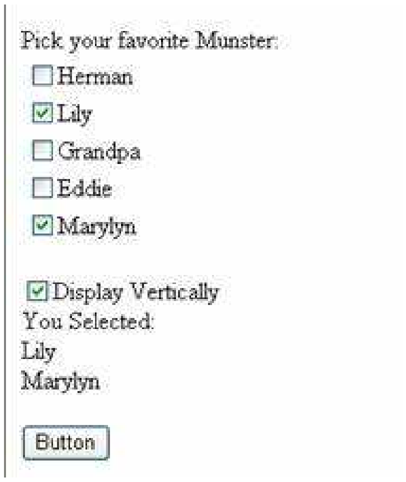


Display selected items from the list when the button is clicked

- Add a label control name it *lblDisplay*
- Add a button control
- Double-click the button

Add this code to the button click event:

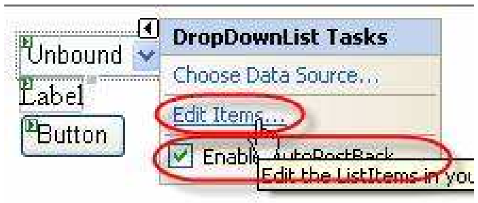
Dim labelString="You Selected:<br />" Dim myCount as Integer for myCount=0 to chkMunsterList.Items.Count-1 if chkMunsterList.Items(myCount).Selected then labelString+=chkMunsterList.Items(myCount).Text labelString+="<br />" end if next lblDisplay.text=labelString



DropDownList

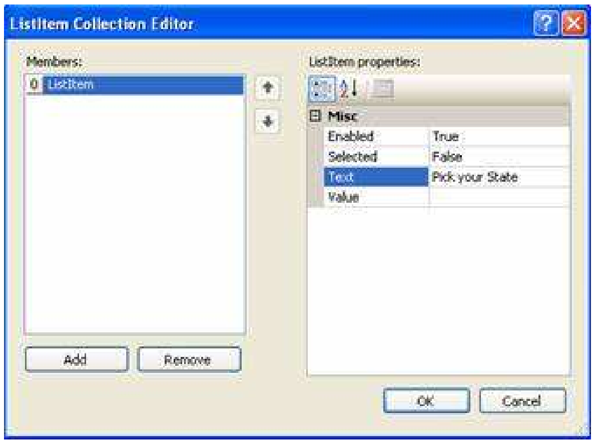
Property	Description
SelectedIndex	Index of the item selected

- Open Visual Studio



- Add a new webform call it *DropDownList.aspx*
- Add a dropDownlist and name it *ddlState*
- Add a label control and name it *lblDisplay*
- Select the smart tag on the dropdownlist
- Check the enable AutoPostBack

- Select *Edit Items*

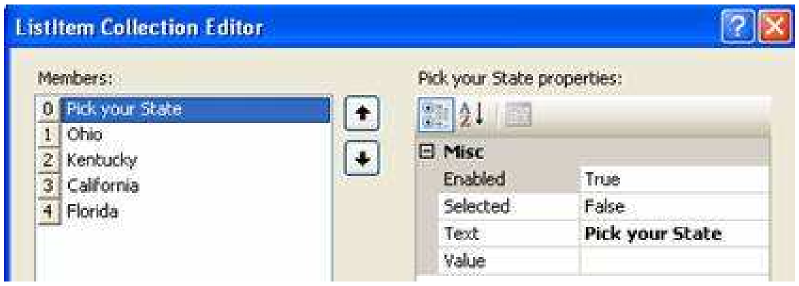


Members:
0 ListItem

ListItem properties:

Misc	
Enabled	True
Selected	False
Text	Pick your State
Value	

- Click *Add*
- Change the text to *Pick your state*
- Leave the value blank
- Click *Add* again
- Enter *Ohio* in the *text* and *OH* in the *value*
- Add three more
    - Florida Fl
    - California CA
    - Kentucky KY



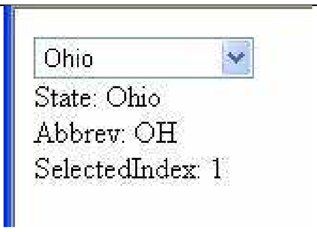
Members:
0 Pick your State
1 Ohio
2 Kentucky
3 California
4 Florida

Pick your State properties:

Misc	
Enabled	True
Selected	False
Text	Pick your State
Value	

- Click *OK*
- Test it
- Double-click the page and add this code to the page_load

```
If ispostback then
  If ddlState.SelectedIndex=0 then
    lblDisplay.text="You did not select anything"
  else
    lblDisplay.text="State: " & ddlState.SelectedItem.text & "<br />"
    lblDisplay.text+="Abbrev: " & ddlState.SelectedItem.value & "<br />"
    lblDisplay.text+="SelectedIndex: " & ddlState.SelectedIndex
  end if
end if
```



```
State: Ohio
Abbrev: OH
SelectedIndex: 1
```

Data Access

There are 3 main types of dataBound controls

1. List Controls
2. Tabular databound controls
3. Hierarchical databound controls

List Controls:

1. BulletedList
2. CheckboxList
3. DropDownList
4. Listbox
5. RadioButtonList

Tabular DataBound Controls

1. Display a set of data
    1. GridView
    2. DataList
    3. Repeater
2. Display a single data item at a time
    1. DetailsView
    2. FormView

The DataGrid is included in ASP.Net 2.0 for backward compatibility. It is not recommended to use it

Hierarchical DataBound Controls

1. Menu
2. TreeView

Both of these controls are bound to an XMLDataSource Control
You can bind any control to these data items
You can also bind any control to a data item by adding the control to a template
DataSource Controls

1. SQLDataSource
    1. Retrieve data from a SQL relational database
        - SQL Server
        - Oracle
        - DB2

1. AccessDataSOurce
    1. Retrieve from a Microsoft Access database
2. ObjectDataSource
    1. Retrieve data from a business object
3. XMLDataSource
    1. Retrieve data from an XML document
4. SiteMapDataSOurce
    1. Data retrieved from a sitemap provider

These fall within one of two categories
Represent tabular data:

- SQLDataSource
- AccessDataSource
- ObjectDataSource

Represent tabular and hierarchical data

- XMLDataSource
- SiteMapDataSource

Databound controls are associated with one of these dataSources with its *DataSourceID* property

DataSource Controls and Parameters

SQLDataSource, AccessdataSOurce and ObjectDataSOurce can use the following parameters:

- Paremeter
  - Static value
- ControlParameter
  - Value of a control or page property
- CookieParameter
  - Value of a browser cookie
- FormParameter
  - Value of an HTML form field
- ProfileParameter
  - Value of a profile property
- QueryStringParameter
  - Value of a querystring field
- SessionParameter
  - Value of an item stored in a session

A parameter in SQLDataSource represents an ADO.Net parameter
A parameter in ObjectDataSource represents a method parameter

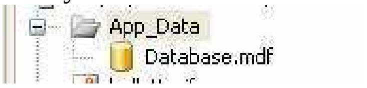
Try This in Visual Studio:

This example allows the user to select a record from a dropDownList and displays the details in a gridView. The second data source control uses a controlparameter in the where clause

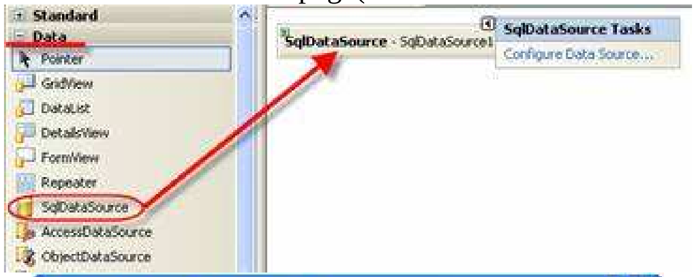
- Download the following file

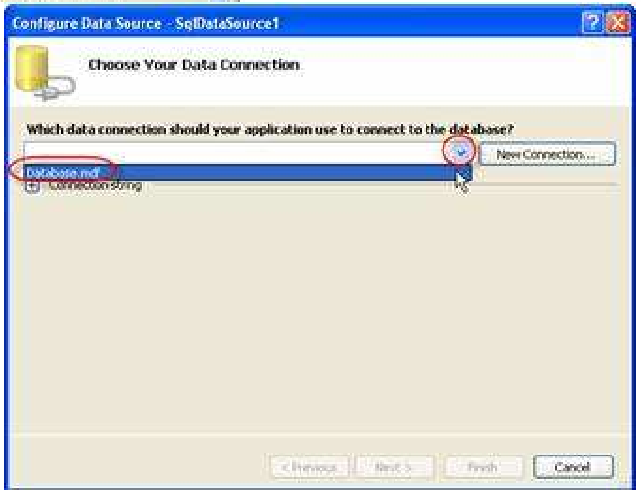
http://www.prowebdesigners.com/aspnet/resources/database.mdf

- Open Visual Studio
- Add a new webform
- Add an existing item, select the database file you just downloaded
- Add it to the App_Data directory



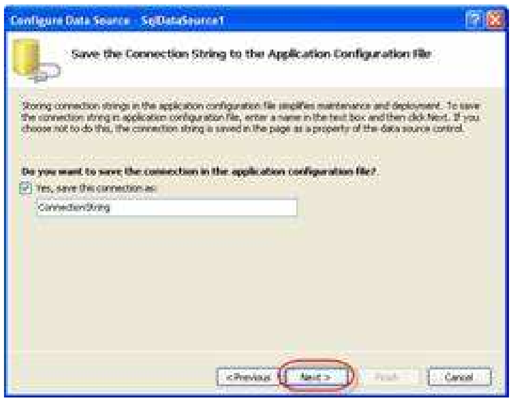
- Add a SQLDataSource control to the page(from the data tab in the toolbox)





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

- Click the smart tag and select *Configure Data Source*
- From the dropdown list select the database.mdf file
- Visual Studio will recommend saving your connection string in your configuration file. This is a very good practice. Click *Next*.



Configure Data Source - SqlDataSource1

Save the Connection String to the Application Configuration File

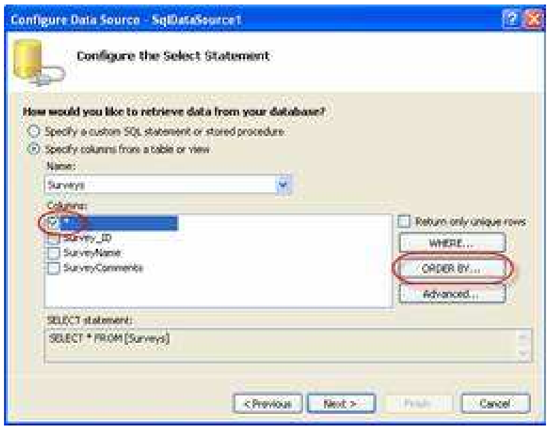
Storing connection strings in the application configuration file simplifies maintenance and deployment. To save the connection string in application configuration file, enter a name in the text box and then click Next. If you choose not to do this, the connection string is saved in the page as a property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

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

[✓] Yes, save this connection as:

ConnectionString

- Select your table and the columns you want. Click * to select all columns.
- Click OrderBy to sort the data
- Select the column you want to sort by in the dropdown list



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: Surveys

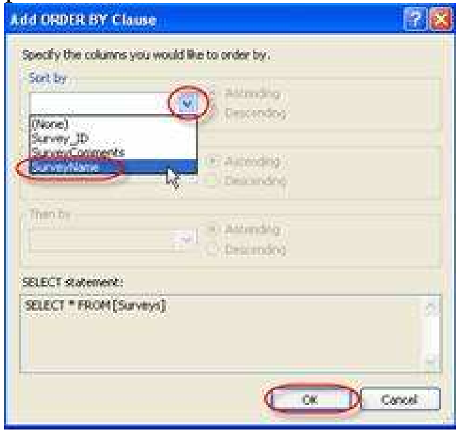
Columns:

[✓] *
[ ] Survey_ID
[ ] SurveyName
[ ] SurveyComments

[ ] Return only unique rows

SELECT statement:

SELECT * FROM [Surveys]



Add ORDER BY Clause

Specify the columns you would like to order by.

Sort by: SurveyName

(None)
Survey_ID
SurveyComments
SurveyName

Ascending
Descending

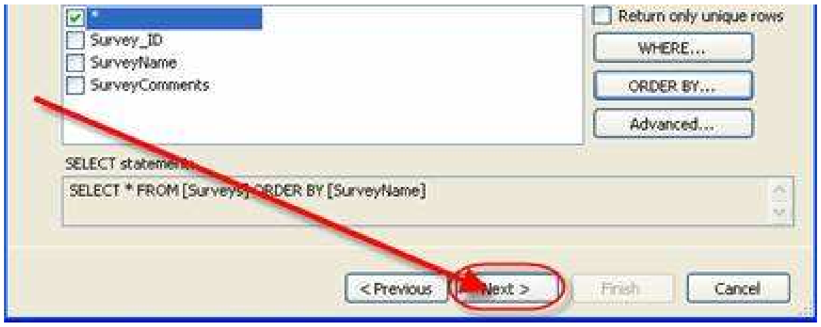
Then by

Ascending
Descending

SELECT statement:

SELECT * FROM [Surveys]

- Click Next



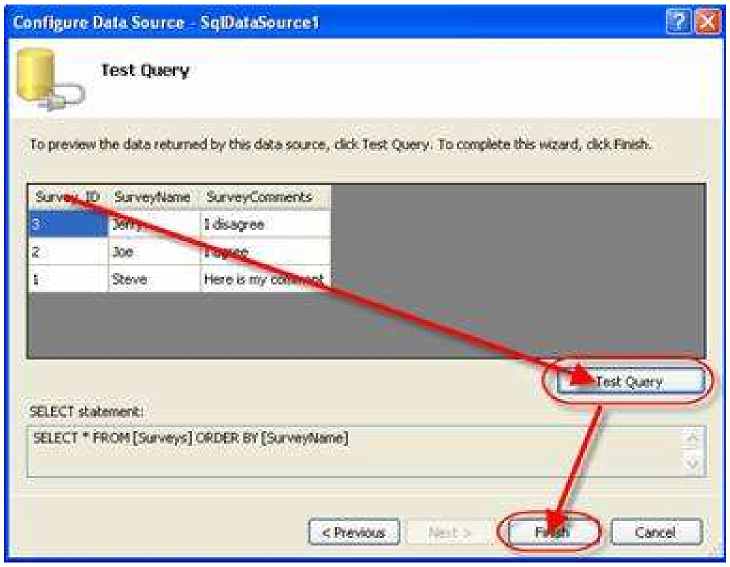
[✓] *
[ ] Survey_ID
[ ] SurveyName
[ ] SurveyComments

[ ] Return only unique rows

SELECT statement:

SELECT * FROM [Surveys] ORDER BY [SurveyName]

- Click Test Query to test it
- Click Finish



Configure Data Source - SqlDataSource1

Test Query

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

Survey_ID	SurveyName	SurveyComments
3	Jerry	I disagree
2	Joe	I agree
1	Steve	Here is my comment

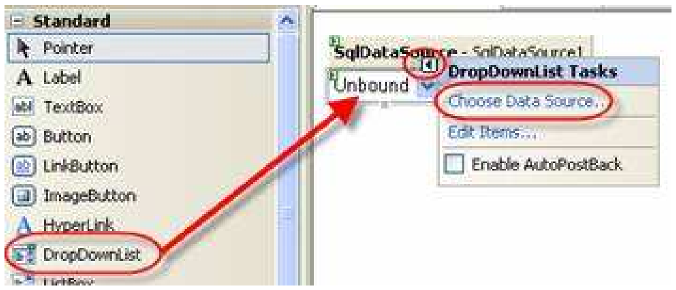
SELECT statement:

SELECT * FROM [Surveys] ORDER BY [SurveyName]

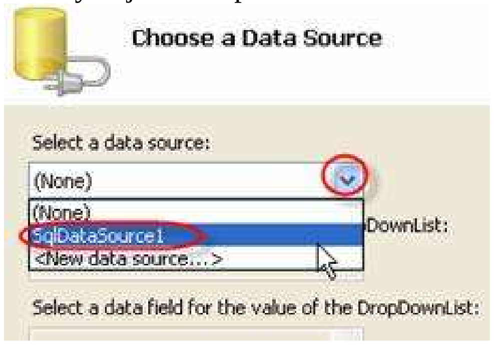
Here is the code:

```
<asp:SqlDataSource ID="SqlDataSource1" runat="server"
ConnectionString="<%$ ConnectionStrings:ConnectionString %>"
SelectCommand="SELECT * FROM [Surveys] ORDER BY [SurveyName]"></asp:SqlDataSource>
```

- Add a dropDownList Control
- Select Choose Data Source



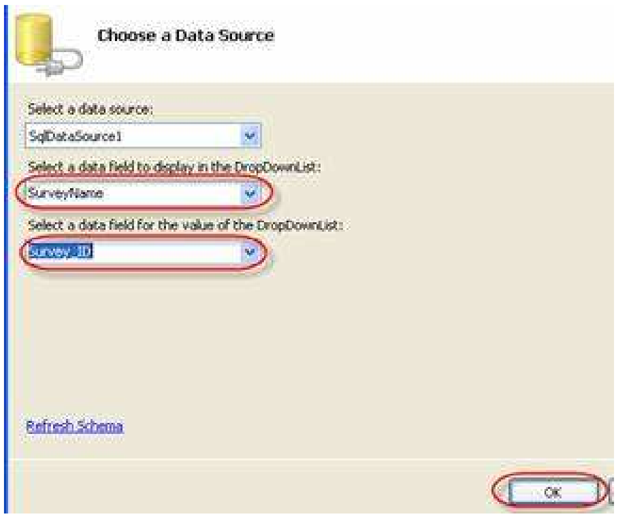
- Select the SQLDataSource you just set up



Select the field you want to display in the dropDownList then the field you want to pass when submitted.

Select *SurveyName* to display

Select *Survey_id* to pass when submitted. This will uniquely identify the selected row

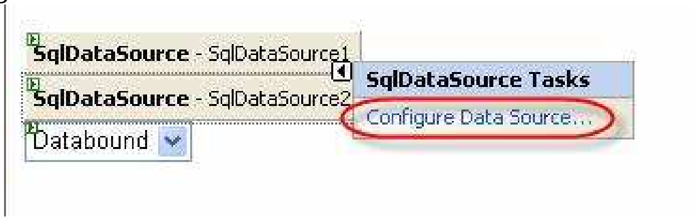

Choose a Data Source
Select a data source:
SqlDataSource1
Select a data field to display in the DropDownList:
SurveyName
Select a data field for the value of the DropDownList:
Survey_ID
Refresh Schema
OK

- Click *OK*
- Set the AutoPostBack property to *True*
- Test it

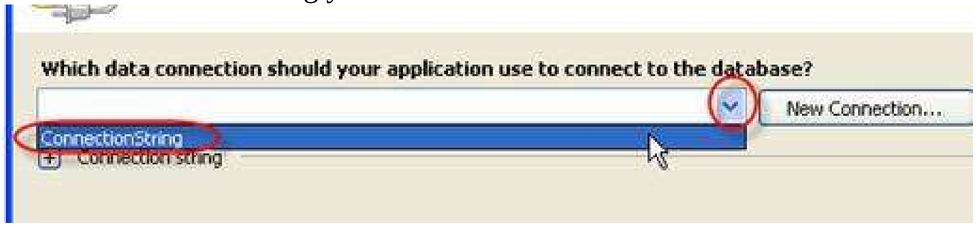
Here is the code:

```
<asp:DropDownList ID="DropDownList1" runat="server" DataSourceID="SqlDataSource1"
      DataTextField="SurveyName" DataValueField="Survey_ID" AutoPostBack="True">
</asp:DropDownList>
```

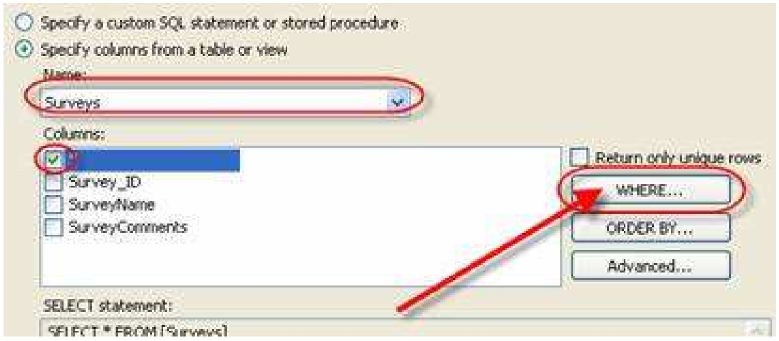
- Add another SQLDataSource control
- Select *Configure Data Source*

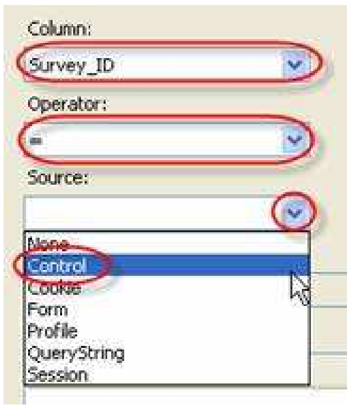

SqlDataSource - SqlDataSource1
SqlDataSource - SqlDataSource2
Databound
SqlDataSource Tasks
Configure Data Source...

- Select the connection string you created in the last data Source


Which data connection should your application use to connect to the database?
New Connection...
ConnectionString
Connection string

- Select all columns and then click the *Where* button





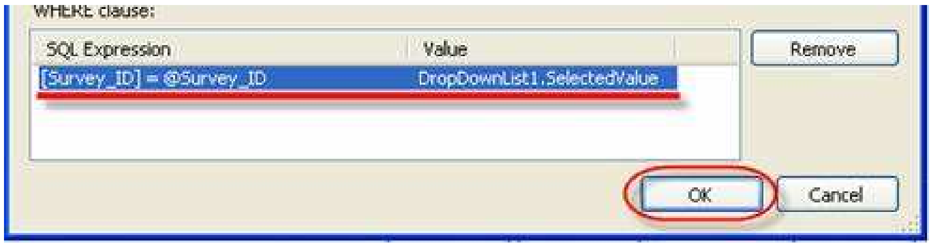
- Select Survey_Id as the column
- Make sure = is selected in the second dropdownList
- Select control as the Source

This will retrieve the parameter from a control. Once you select this more options appear

- Select the dropDownList control
- Click *Add*

It adds the code for your parameter

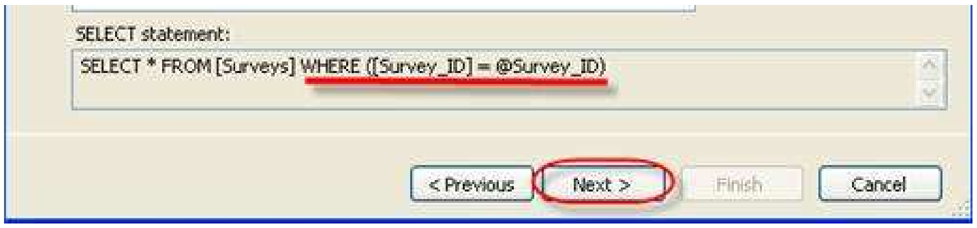
- Click *OK*



SQL Expression	Value
[Survey_ID] = @Survey_ID	DropDownList1.SelectedValue

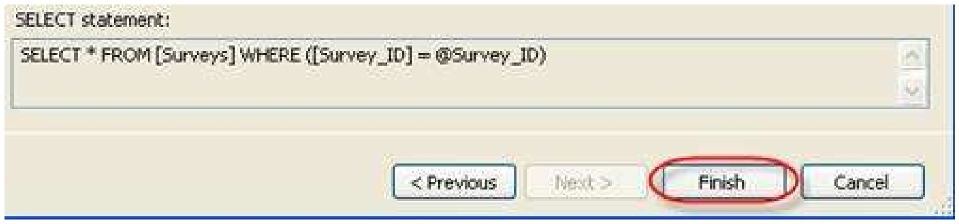
You where clause is now complete

- Click *Next*



SELECT * FROM [Surveys] WHERE ([Survey_ID] = @Survey_ID)

- Click *Finish*

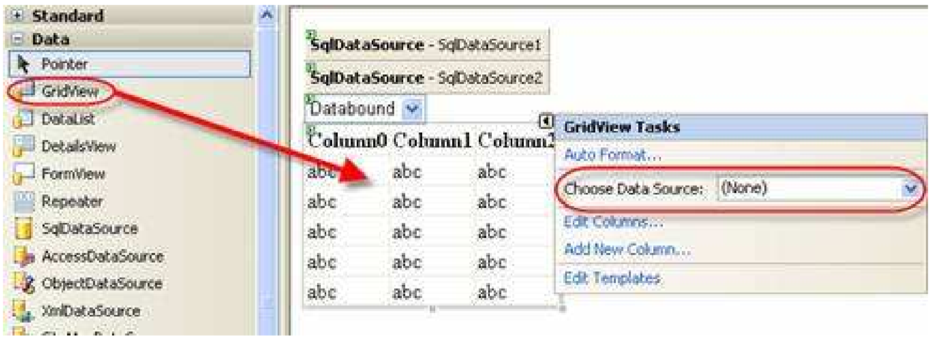


SELECT * FROM [Surveys] WHERE ([Survey_ID] = @Survey_ID)

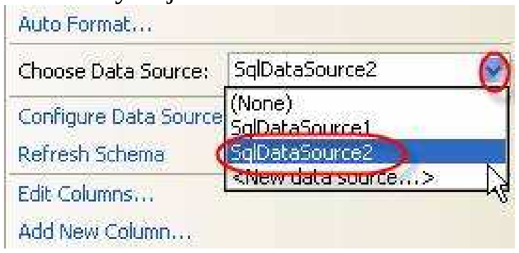
Here is the code:

```
<asp:SqlDataSource ID="SqlDataSource2" runat="server"
    ConnectionString="<%$ ConnectionStrings:ConnectionString %>"
    SelectCommand="SELECT * FROM [Surveys] WHERE ([Survey_ID] = @Survey_ID)">
    <SelectParameters>
        <asp:ControlParameter ControlID="DropDownList1" Name="Survey_ID"
            PropertyName="SelectedValue" Type="Int32" />
    </SelectParameters>
</asp:SqlDataSource>
```

- Add a gridView control
- Click *Choose Data Source*



- Select the second dataSource you just created



- Test it

When you select a name from the dropDownList the record displays in the gridView
Here is the code for the gridView:

```
<asp:GridView ID="GridView1" runat="server" AutoGenerateColumns="False"
    DataSourceID="SqlDataSource2">
    <Columns>
        <asp:BoundField DataField="Survey_ID" HeaderText="Survey_ID" InsertVisible="False"
            ReadOnly="True" SortExpression="Survey_ID" />
        <asp:BoundField DataField="SurveyName" HeaderText="SurveyName"
            SortExpression="SurveyName" />
        <asp:BoundField DataField="SurveyComments" HeaderText="SurveyComments"
            SortExpression="SurveyComments" />
    </Columns>
</asp:GridView>
```

Programmatic dataBinding
ASP.Net 1.1 only supported this type of dataBinding
Example:
Dim fonts as New InstalledFontCollection()
controlName.dataSource=fonts.families
controlName.dataBind()
You can assign the following to the dataSource property:

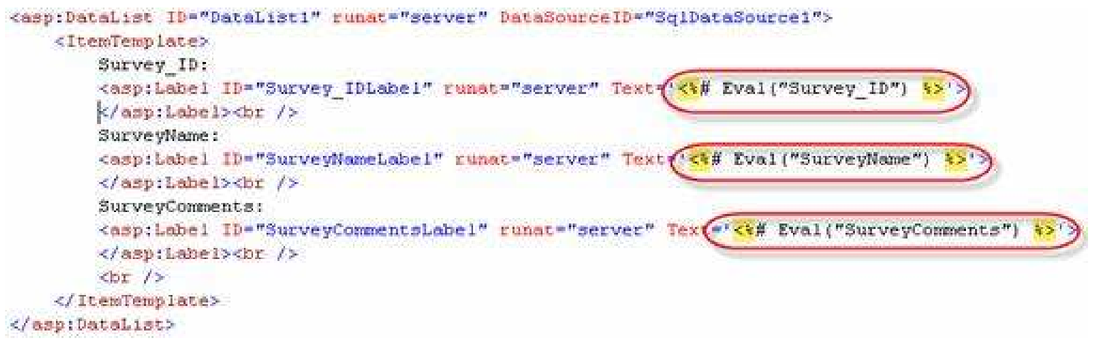
- Collections
- Arrays
- DataSets
- DataReaders
- DataViews
- Enumerations

The control retrieves the data from the data source when you call the dataBind() method
You do not have to rebind the control and the data source every time the page is requested because the View State remembers the items and displays them
Templates and DataBinding
All the data bound controls support templates except for the treeView
The Repeater, DataList and FormView **require** templates
Templates are used to format the appearance and layout of each of the data items.
You can use data binding expression to display the value of the data within the templates
A template can contain HTML, DataBinding expressions and other controls, even data bound controls.

Data Binding Expressions
DataBinding expressions are not evaluated until runtime

Syntax:
<%#   %>

Example:



```
<asp:DataList ID="DataList1" runat="server" DataSourceID="SqlDataSource1">
    <ItemTemplate>
        Survey_ID:
        <asp:Label ID="Survey_IDLabel" runat="server" Text='<%# Eval("Survey_ID") %>'>
        </asp:Label><br />
        SurveyName:
        <asp:Label ID="SurveyNameLabel" runat="server" Text='<%# Eval("SurveyName") %>'>
        </asp:Label><br />
        SurveyComments:
        <asp:Label ID="SurveyCommentsLabel" runat="server" Text='<%# Eval("SurveyComments") %>'>
        </asp:Label><br />
        <br />
    </ItemTemplate>
</asp:DataList>
```

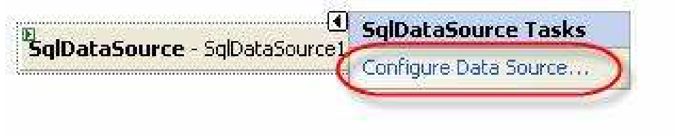
Underneath the Eval() method calls the dataBinder.Eval() method
So:
<%# Eval("Survey_ID") %>
Is the same as:
<%#DataBinder.Eval(Container.DataItem,"Survey_id")%>
 ASP.Net 1.1 made you use DataBinder.Evel()
ASP.Net 2.0 provides a shorter method
 You can also use formatting:
<%#Eval("DataEntered","{0:D}")%>
 You can call other methods besides Eval()
 For Example
Perhaps you have a function that changes a string to lowercase
 Public Function Lowerit(by val myString as Object) as String
Return myString.toString().toLower()
End function
 Then you can use this Binding Expression:
<%# Lowerit(Eval("SurveyName"))%>
Two way DataBinding Expressions
In a one way dataBinding expression you can use dataBinding to display a value
 In a two way dataBinding expression you can use dataBinding to display a value **AND** you can modify the value of the data item

Detailsview Control

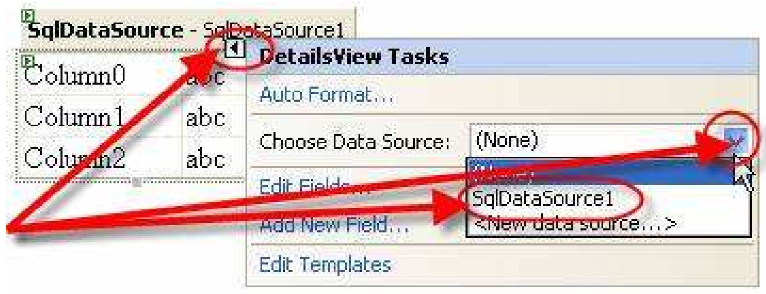
The DetailsView control in ASP.Net 2.0 is used to create an HTML table that displays the contents of a single database record.
Displaying Data with the Details View Control in ASP.Net 2.0

Try This in Visual Studio:

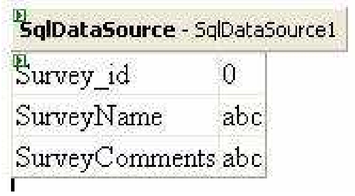
- Open Visual Studio
- Add a webForm to your website, name it *DetailsView.aspx*
- Add a DataSource control to the page and configure it to a database



- Add a DetailsView control to the webForm
- Select the DetailsView control and click on the smart tag
- Select *Choose Data Source*
- Select the Data Source control you added

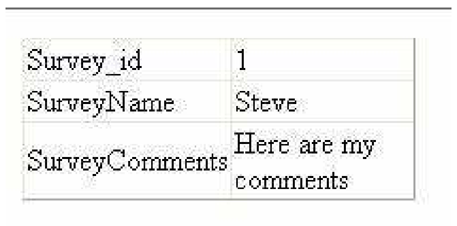


- The DetailsView control now formats itself for your data



Survey_id	0
SurveyName	abc
SurveyComments	abc

- Test it and it displays the first record



Survey_id	1
SurveyName	Steve
SurveyComments	Here are my comments

Let's look at the Code:

1	< asp : SqlDataSource ID ="SqlDataSource1" runat ="server" ConnectionString ="<%$ ConnectionStrings:codecrumbsConnectionString %> " SelectCommand ="SELECT * FROM [Surveys]"></ asp : SqlDataSource >
2	< asp : DetailsView ID ="DetailsView1" runat ="server" AutoGenerateRows ="False" DataSourceID ="SqlDataSource1" Height ="50px" Width ="208px">
3	< Fields >
4	< asp : BoundField DataField ="Survey_id"

	HeaderText ="Survey_id" InsertVisible ="False" ReadOnly ="True" SortExpression ="Survey_id" />
5	< asp : BoundField DataField ="SurveyName" HeaderText ="SurveyName" SortExpression ="SurveyName" />
6	< asp : BoundField DataField ="SurveyComments" HeaderText ="SurveyComments" SortExpression ="SurveyComments" />
7	</ Fields >
8	</ asp : DetailsView >

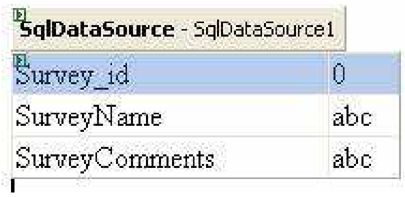
Explaination:

1	SQL Sata Source Control Connection String to the database SelectCommand contains the SQL statement to retrieve the data
2	Open DetailsView Control Set the dataSourceID to our SQL Data Source
3	Set up fields
4	Create a dataBound field The HeaderText is SurveyID – This is the text that is used to label the textbox The dataField is set to the Survey_Id database field
5	Create a dataBound field The HeaderText is SurveyName – This is the text that is used to label the textbox The dataField is set to the SurveyName database field
6	Create a dataBound field The HeaderText is SurveyComments – This is the text that is used to label the textbox The dataField is set to the SurveyComments database field
7	Close the Fields
8	Close the DetailsView Control

DetailsView Fields in ASP.Net 2.0

You can control the appearance of the DetailsView

The DetailView control supports the following Fields	
BoundField	Displays the value of a data item as text
CheckBoxField	Displays the value of the data item as a check box
CommandField	Displays links for editing, deleting and selecting rows
ButtonField	Displays the value of a data item as a button, imagebutton, linkbutton
HyperlinkField	Displays the value of a data item as a link
ImageField	Displays the value of a data item as an image
TemplateField	Customize the appearance of a data item

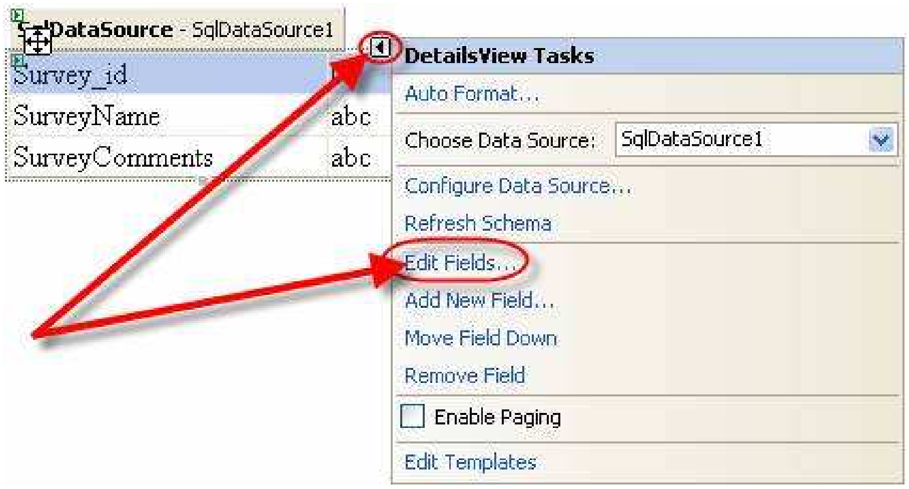


Survey_id	0
SurveyName	abc
SurveyComments	abc

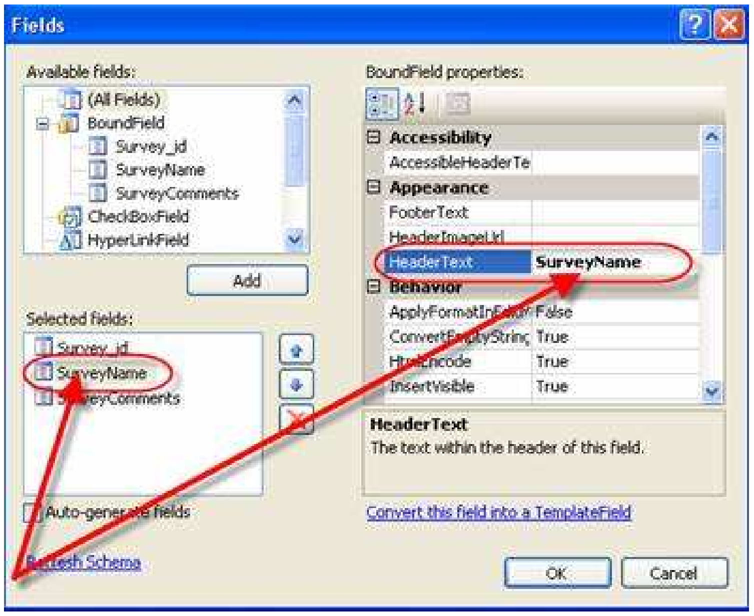
Change the text describing each row

Try This in Visual Studio:

- Click on the DetailsView smart tag
- Select *Edit Fields*



- Select any of the fields



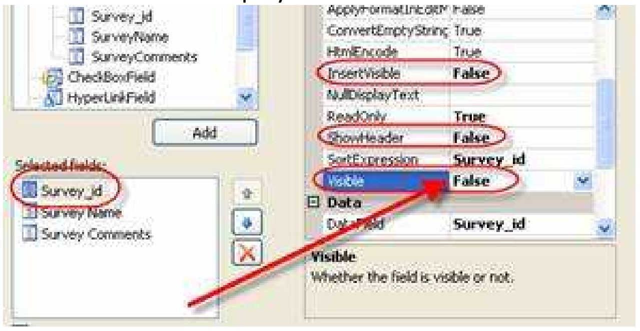
- Select HeaderText
- Change the value to whatever you want displayed to the left of the data field

Let's look at the Code:

```
<asp:BoundField DataField="SurveyName" HeaderText="Survey Name"
SortExpression="SurveyName" />
```

You can also choose to not display a field

- Select the field you do not want to display



Insert Visible – Determine if this field will be displayed when the detailsView's mode is set to insert
ShowHeader – Determines if this field will display a header text
Visible – Determines if this field will be displayed

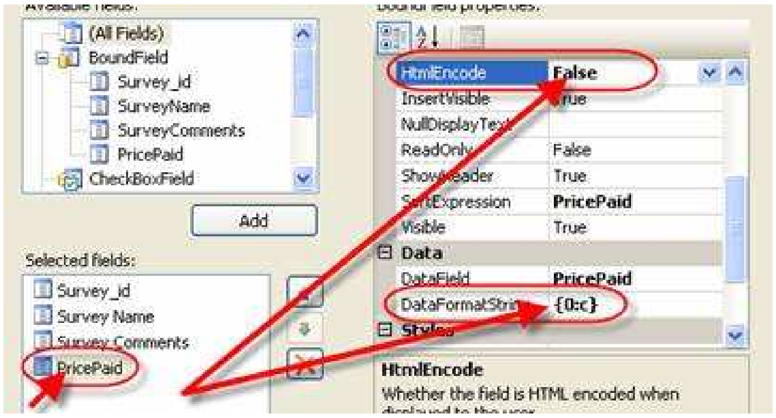
Let's look at the Code:

```
<asp:BoundField DataField="Survey_id" HeaderText="Survey_id" InsertVisible="False"
ReadOnly="True" SortExpression="Survey_id" ShowHeader="False" Visible="False" />
```

Formatting Data

I've added another field in the database called PricePaid of type money to demonstrate the dataFormatString property

- Select the field you want to format
- Add your format string to the *DataFormatString* property



HtmlEncode	False
InsertVisible	True
NullDisplayText	
ReadOnly	False
ShowHeader	True
SortExpression	PricePaid
Visible	True
Data	
DataField	PricePaid
DataFormatString	{0:c}
Styles	

HtmlEncode
Whether the field is HTML encoded when

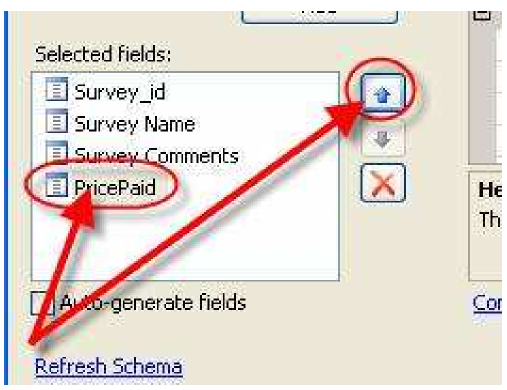
You must also set the *HTMLEncode* to false to let the DataFormatString work

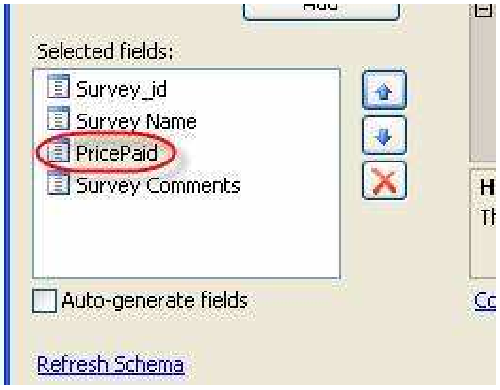
Let's look at the Code:

```
<asp:BoundField DataField="PricePaid"
DataFormatString="{0:c}" HeaderText="PricePaid"
SortExpression="PricePaid" HtmlEncode="False" />
```

Change the order the rows are displayed

You can select one of the fields and click the up or down arrow buttons next to it to mode it up or down in the DetailsView





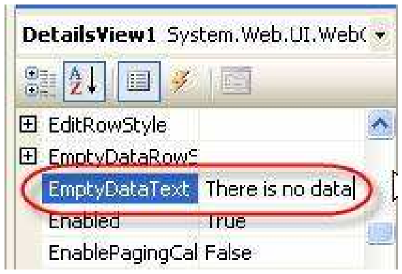
Displaying a message when there is no data

There are two ways to display a message when the data source is returning no results.

1. EmptyDataText Property
2. EmptyDataTemplate Property

EmptyDataText Property

- Select the detailsView and click on the EmptyDataText property in the property window
- Add a text message to display when no data is available


DetailsView1 System.Web.UI.WebC
EditRowStyle
EmptyDataRowS
EmptyDataText There is no data
Enabled True
EnablePagingCal False

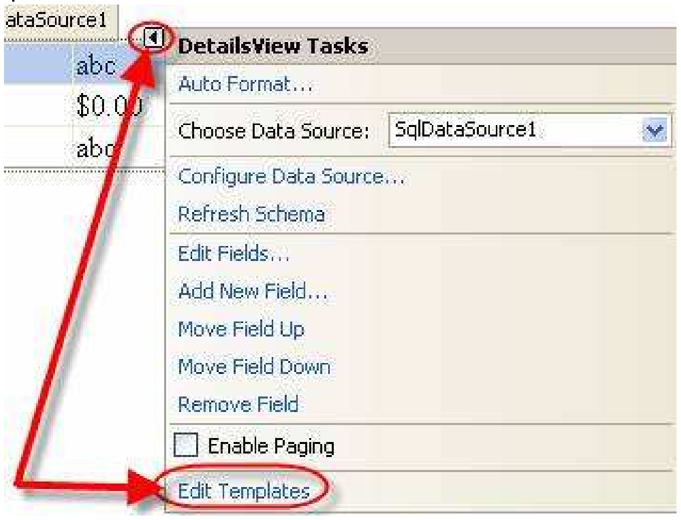
Let's look at the Code:

```
<asp:DetailsView ID="DetailsView1" runat="server" AutoGenerateRows="False"
DataSourceID="SqlDataSource1" Height="50px" Width="208px"
EmptyDataText="There is no data">
```

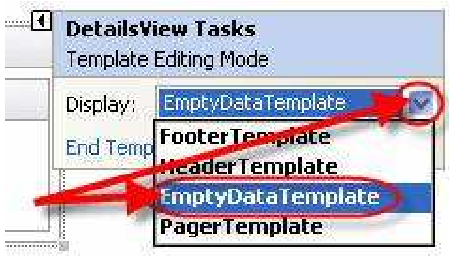
EmptyDataTemplate

You can display more complex messages when there is no data including ASP.Net controls.

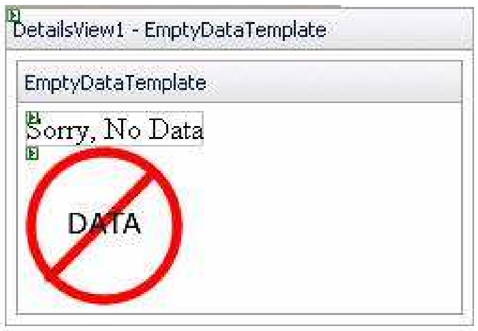
- Click on the smart tag
- Select Edit Templates



Select *EmptyDataTemplate* from the dropdownlist



You can now drop controls into this box and set their properties



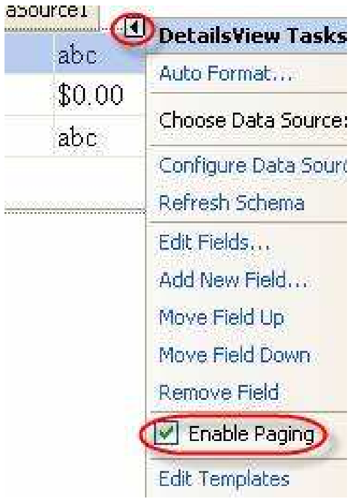
Sorry, No Data

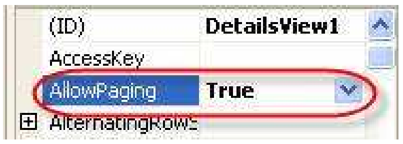
Let's look at the Code:

1	< EmptyDataTemplate >
2	< asp : Label ID ="Label1" runat ="server" Text ="Sorry, No Data"></ asp : Label >< br />
3	< asp : Image ID ="Image1" runat ="server" ImageUrl ="~/NoData.gif" />
4	</ EmptyDataTemplate >

Paging Data with the DetailsView Control in ASP.Net 2.0

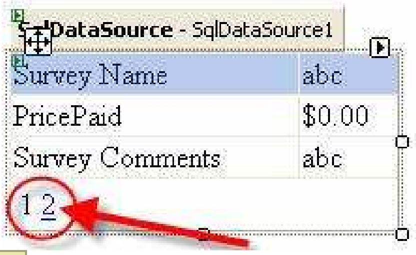
- To allow paging change the AllowPaging property to true





(ID)	DetailsView1
AccessKey	
AllowPaging	True
AlternatingRows	

This can be done in the properties window or by clicking the smart tag



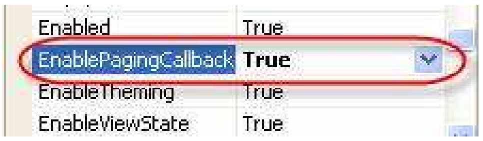
Let's look at the Code:

```
<asp:DetailsView ID="DetailsView1" runat="server" AutoGenerateRows="False"
DataSourceID="SqlDataSource1"
Height="50px" Width="208px" EmptyDataText="There is no data"
AllowPaging="True">
```

Paging with AJAX

You page is posted back to the server each time you page by default
You can use AJAX to page through the data in the DetailsView control

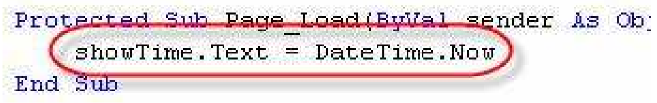
- Set the EnablePagingCallBacks property to true



Enabled	True
EnablePagingCallback	True
EnableTheming	True
EnableViewState	True

Now the paging is done on the client-side
To test this let’s add a label control to the page
Name it showTime
Clear the text property
Double click on the page and add this line of code in the page_load method

```
showTime.text=DateTime.Now
```

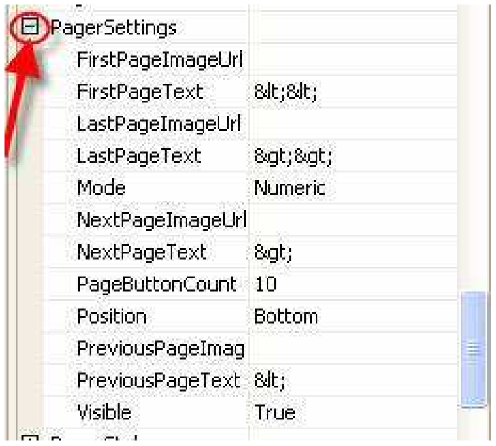


```
Protected Sub Page_Load(ByVal sender As Ob
    showTime.Text = DateTime.Now
End Sub
```

Test the page and do some paging, notice the date and time does not change. This shows that the page never posted back to the server.

Customize the DetailsView Paging Interface

By default, numbers are displayed for paging
You can change that by changing the *PagerSettings* property
Click the plus sign next to the pagerSettings in the properties window



PagerSettings	
FirstPageImageUrl	
FirstPageText	<<
LastPageImageUrl	
LastPageText	>>
Mode	Numeric
NextPageImageUrl	
NextPageText	>
PageButtonCount	10
Position	Bottom
PreviousPageImag	
PreviousPageText	<
Visible	True

You can add a URL for an image in the following properties:

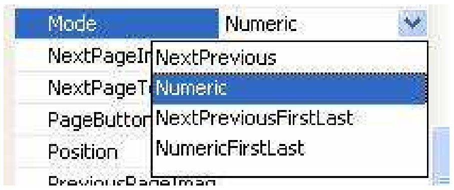
- FirstPageImageURL
- LastPageImageURL
- NextPageImageURL
- PreviousPageImageURL

You can change the text links in the following properties:

- FirstPageText
- LastPageText
- Next PageText
- Previous PageText

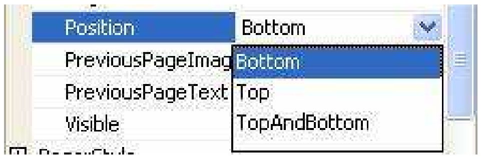
You can change the format or the pager by changing the *Mode* property
Possible Values are:

- Numeric (default)
- NextPrevious
- NextPreviousFirstLast
- NumericFirstLast

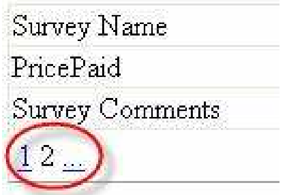

Mode Numeric

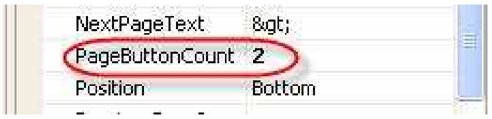
You can change the position of the paging control by changing the Position property
Possible values are:

- Bottom
- Top
- TopAndBottom


Position Bottom

Change the amount of numbers that display by changing the *PageButtonCount* property



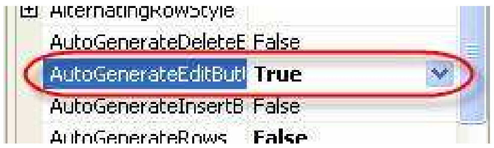

NextPageText &gt;
PageButtonCount 2
Position Bottom

Let's look at the Code:

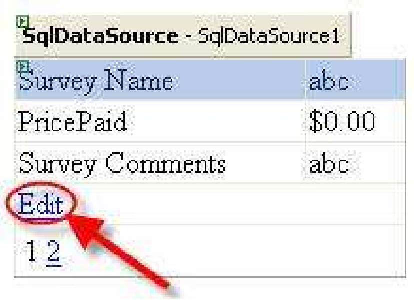
```
< PagerSettings PageButtonCount ="2" Mode ="NextPreviousFirstLast" />
```

Updating Data with the DetailsView Control in ASP.Net 2.0

Change the DetailsView control's autoGenerateEditButton to true

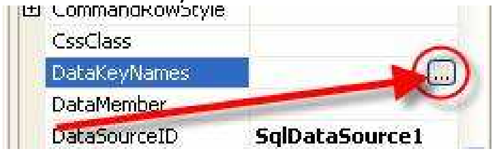

AutoGenerateDeleteE False
AutoGenerateEditButt True
AutoGenerateInsertB False
AutoGenerateRows False

This adds an Edit linkButton

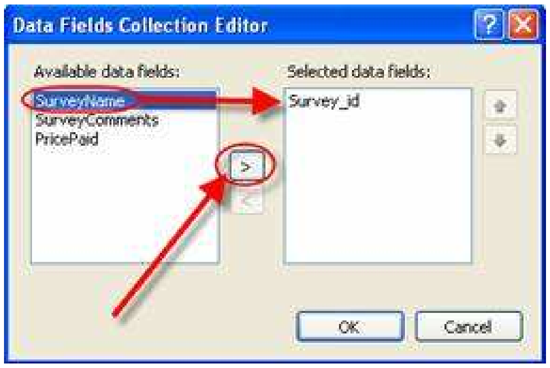


You must set the DataKeyNames property to the primary key of the data source for this to work

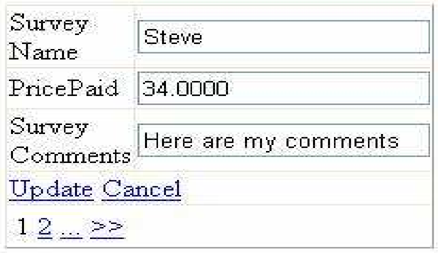
- Select the ellipsis button in the DataKeyNames value


DataSourceID SqlDataSource1

Select the primary key and click the arrow button

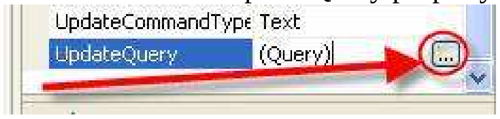


The control will automatically generate textboxes to allow the user to change the values



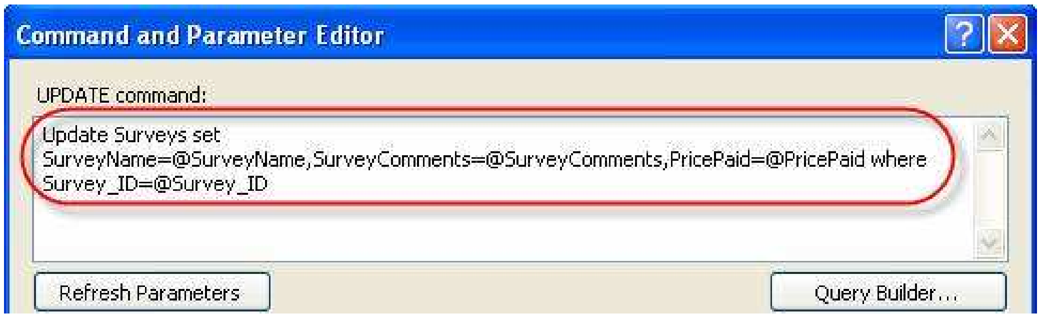
Survey Name	Steve
PricePaid	34.0000
Survey Comments	Here are my comments
Update Cancel	
1 2 ... >>	

It also automatically creates a Update and Cancel linkButton
You must also add an UpdateCommand in your dataSource control
Select the data Source control and click on the UpdateQuery property in the properties window



UpdateCommandType	Text
UpdateQuery	(Query)

Add your query into the UpdateCommand



UPDATE command:

```
Update Surveys set
SurveyName=@SurveyName,SurveyComments=@SurveyComments,PricePaid=@PricePaid where
Survey_ID=@Survey_ID
```

By default the detailsView uses the name of each field as the parameter name, you only need put an @ symbol in front of it (For SQL Server)
You can force the DetailsView control to appear in the Edit mode by setting the *defaultMode* to *Edit*

Let's look at the Code:

```
<asp:SqlDataSource ID="SqlDataSource1" runat="server"
ConnectionString=" <%$ ConnectionStrings:codecrumbsConnectionString %>"
SelectCommand="SELECT * FROM [Surveys]"
UpdateCommand="Update Surveys set SurveyName=@SurveyName,
SurveyComments=@SurveyComments,PricePaid=@PricePaid where
Survey_ID=@Survey_ID"> </asp:SqlDataSource>
```

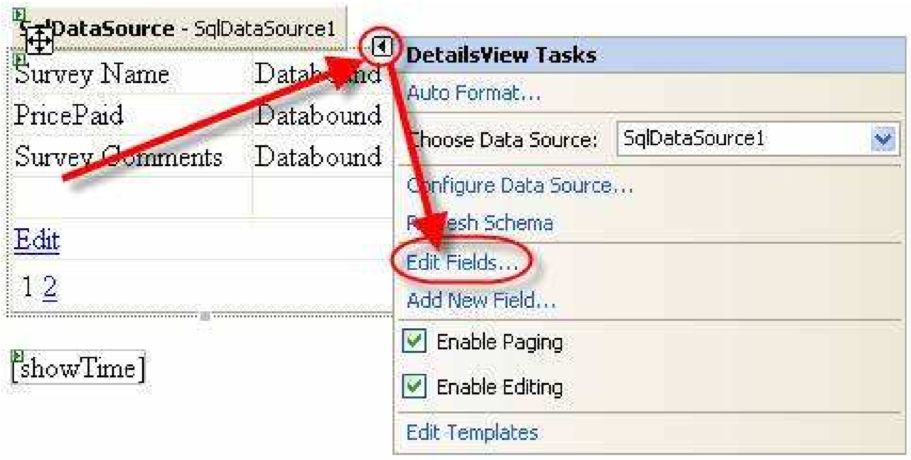
```
<asp:DetailsView ID="DetailsView1" runat="server" AutoGenerateRows="False"
DataSourceID="SqlDataSource1"
Height="50px" Width="208px" EmptyDataText="There is no data"
AllowPaging="True" EnablePagingCallbacks="True" AutoGenerateEditButton="True"
DataKeyNames="Survey_id">
```

Editing Details View control with Templates

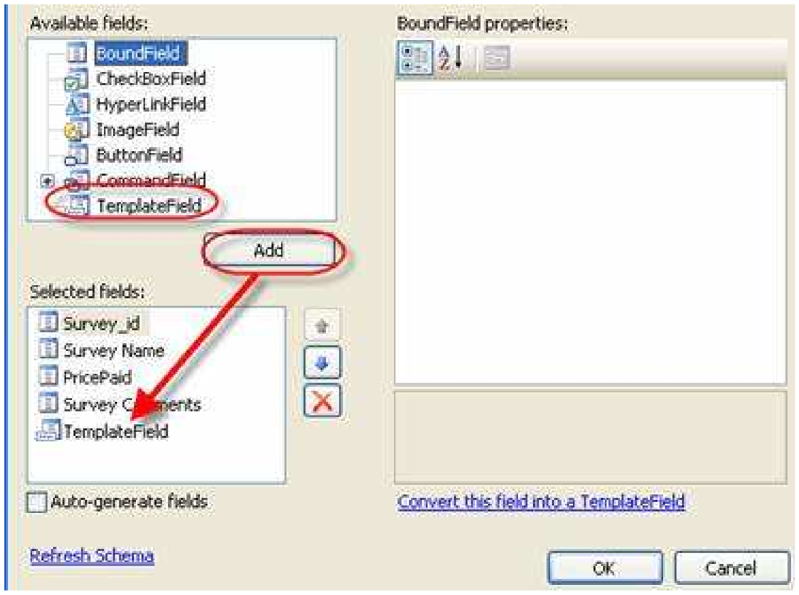
You can add validation when editing in the DetailsView control by using templates.

Try This in Visual Studio:

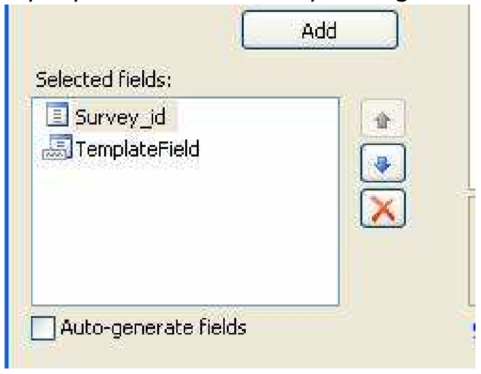
- Click on the DetailsView smart tag
- Select Edit Fields



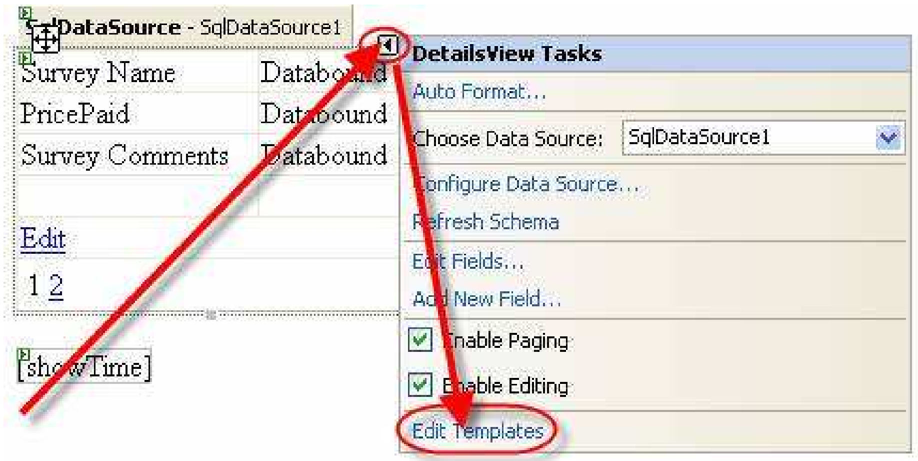
- Click on TemplateField
- Click the Add button



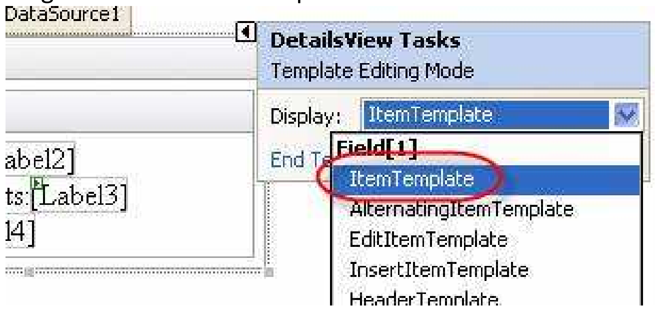
- Click on all but the primary key field and delete it by clicking the red x button



- Click the OK button
- Click the smart tag again and select Edit templates

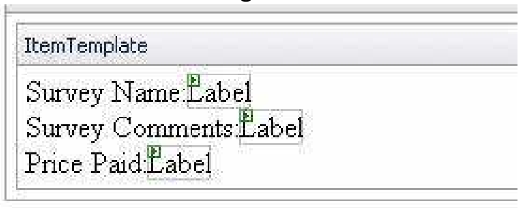


- Select the smart tag and choose ItemTemplate

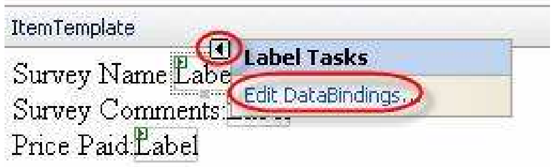


The Item template is used to display the data

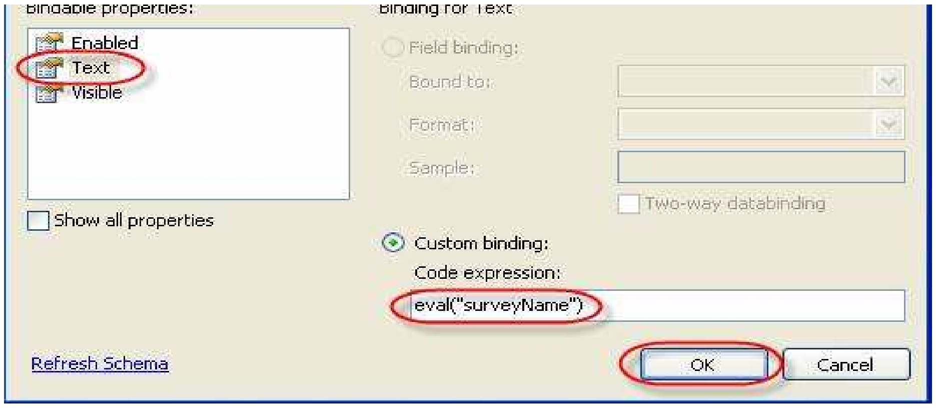
- Add a label for each field and text describing them



- Click the first label and select the smart tag
- Select Edit Data binding

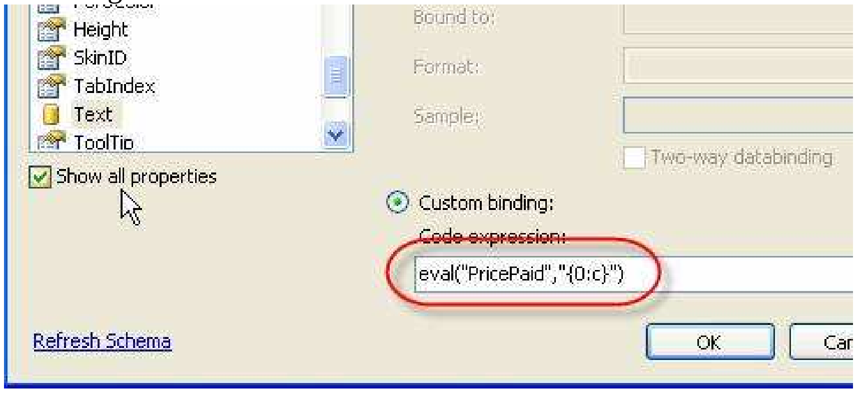


Make sure text is selected and add this code to the Code Expression



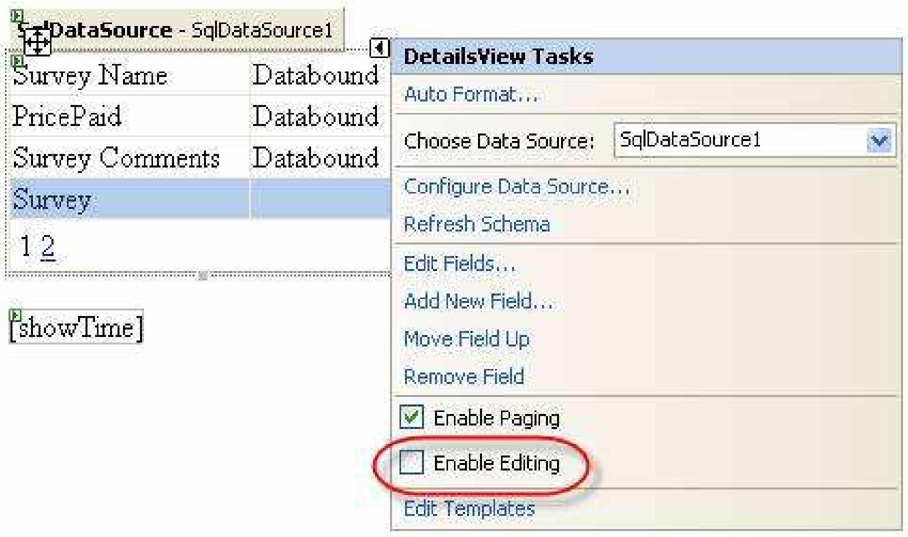
```
eval("surveyName")
```

Do this for each label
You can add formatting as well

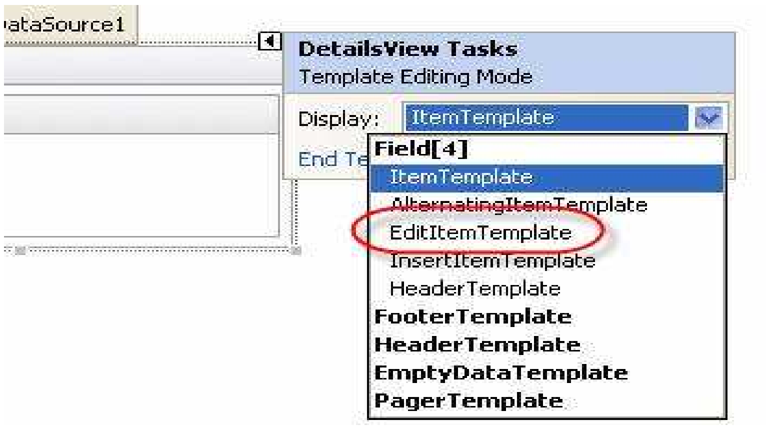


```
eval("PricePaid","{0:c}")
```

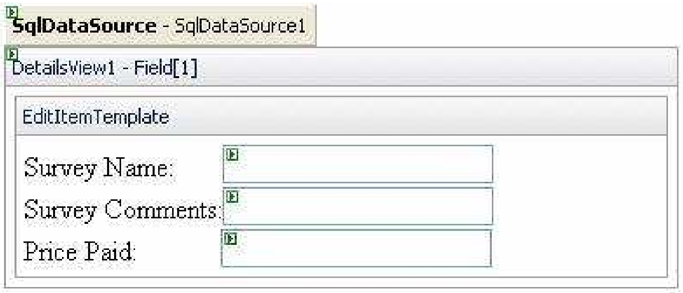
- Make sure Enable Editing is checked



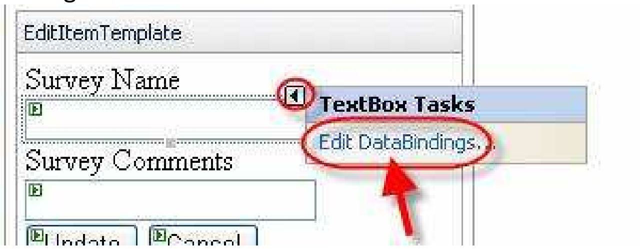
- Now you can select EditItemTemplate



- Add a two textboxes and text to label them



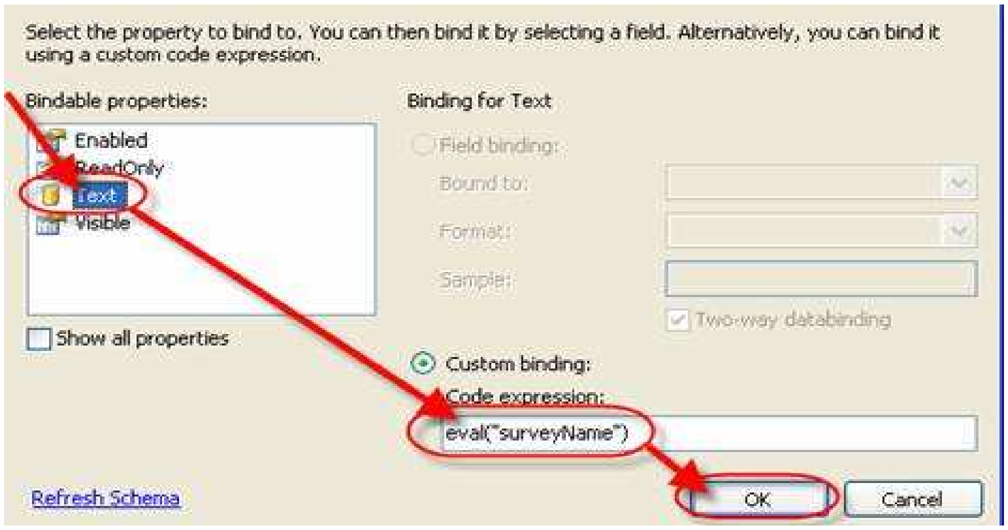
- Click the smart tag on the first textbox
- Select Edit DataBinding



- Type   bind("fieldname")

You must use *BIND* instead of *EVAL*

- Click OK


Select the property to bind to. You can then bind it by selecting a field. Alternatively, you can bind it using a custom code expression.

Bindable properties:

Enabled
ReadOnly
Text
Visible

Show all properties

Binding for Text

Field binding:

Bound to:

Format:

Sample:

Two-way databinding

Custom binding:

Code expression:

eval("surveyName")

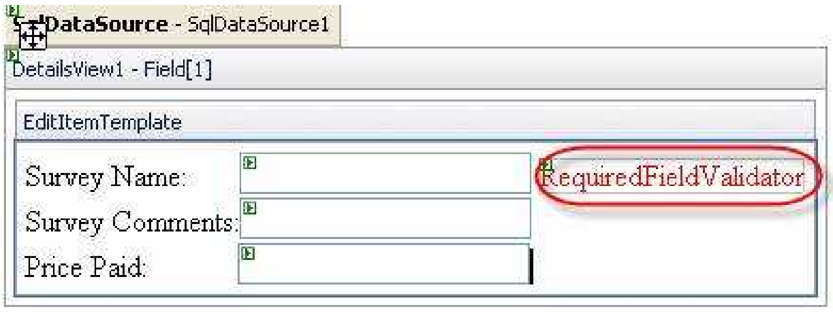
Refresh Schema

OK

Cancel

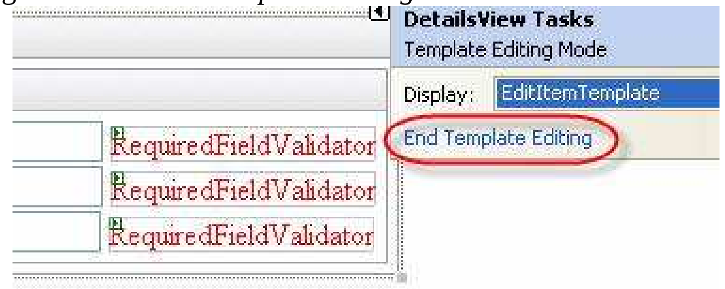
- Do the same for the next textbox

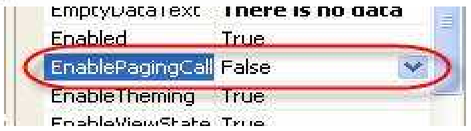
Add a requiredFieldValidator to the template



- Set the controlToValidate property to the name of the first textbox
- Do the same for each textbox

Click the smart tag and select *End Template Editing*





EmptyDataText There is no data
Enabled True
EnablePagingCall False
EnableTheming True
EnableViewState True

- Make sure EnablePagingCalls is false

Formview Control

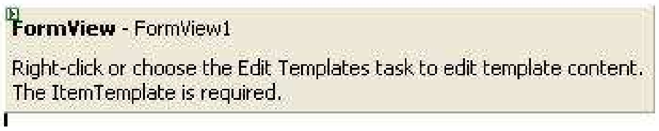
Use the FormView control to:
- Display
- Insert
- Edit
- Delete
- Page

Database records
The formView control is completely template driven
You can also add validation controls
Display Data with the FormView Control
Use the itemTemplate to display database records

Try This in Visual Studio:

- Open Visual Studio
- Add a webForm to your website, name it *formView.aspx*
- Add a DataSource control to the page and configure it to a database

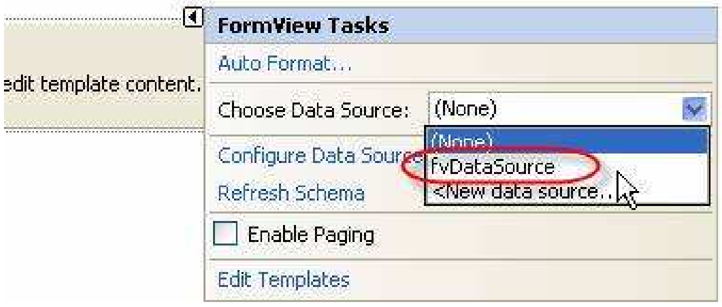
Using SQL Server:
- Select all the fields
- Click Next
- Click Finish
- Name the data Source control FVDataSource
- Add a formView to the control



FormView - FormView1

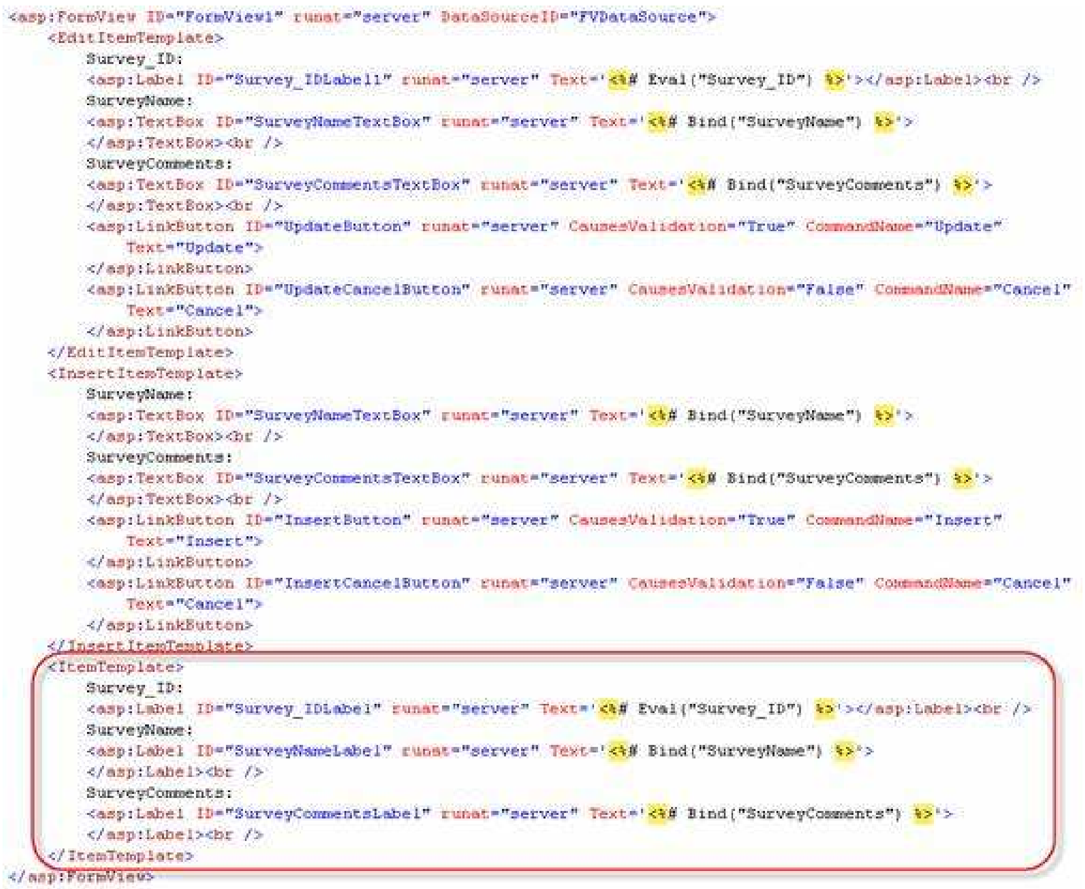
Right-click or choose the Edit Templates task to edit template content. The ItemTemplate is required.

- Configure the formView control to the dataSource by selecting the smart tag and click on



- Test it

It will show the first record in the data Source
Here is the code:



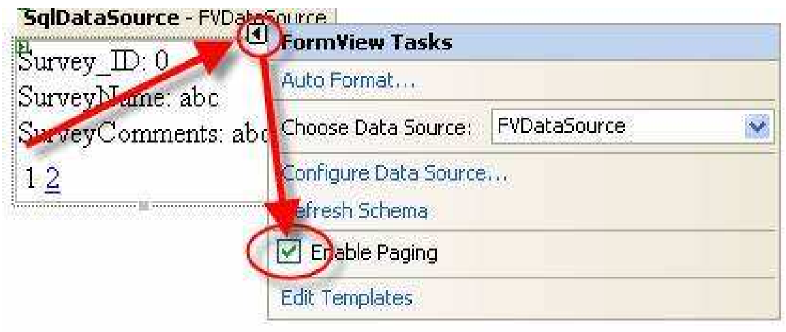
```
<asp:FormView ID="FormView1" runat="server" DataSourceID="FVDataSource">
    <EditItemTemplate>
        Survey_ID:
        <asp:Label ID="Survey_IDLabel1" runat="server" Text='<%# Eval("Survey_ID") %>'></asp:Label><br />
        SurveyName:
        <asp:TextBox ID="SurveyNameTextBox" runat="server" Text='<%# Bind("SurveyName") %>'>
        </asp:TextBox><br />
        SurveyComments:
        <asp:TextBox ID="SurveyCommentsTextBox" runat="server" Text='<%# Bind("SurveyComments") %>'>
        </asp:TextBox><br />
        <asp:LinkButton ID="UpdateButton" runat="server" CausesValidation="True" CommandName="Update"
            Text="Update">
        </asp:LinkButton>
        <asp:LinkButton ID="UpdateCancelButton" runat="server" CausesValidation="False" CommandName="Cancel"
            Text="Cancel">
        </asp:LinkButton>
    </EditItemTemplate>
    <InsertItemTemplate>
        SurveyName:
        <asp:TextBox ID="SurveyNameTextBox" runat="server" Text='<%# Bind("SurveyName") %>'>
        </asp:TextBox><br />
        SurveyComments:
        <asp:TextBox ID="SurveyCommentsTextBox" runat="server" Text='<%# Bind("SurveyComments") %>'>
        </asp:TextBox><br />
        <asp:LinkButton ID="InsertButton" runat="server" CausesValidation="True" CommandName="Insert"
            Text="Insert">
        </asp:LinkButton>
        <asp:LinkButton ID="InsertCancelButton" runat="server" CausesValidation="False" CommandName="Cancel"
            Text="Cancel">
        </asp:LinkButton>
    </InsertItemTemplate>
    <ItemTemplate>
        Survey_ID:
        <asp:Label ID="Survey_IDLabel" runat="server" Text='<%# Eval("Survey_ID") %>'></asp:Label><br />
        SurveyName:
        <asp:Label ID="SurveyNameLabel" runat="server" Text='<%# Bind("SurveyName") %>'>
        </asp:Label><br />
        SurveyComments:
        <asp:Label ID="SurveyCommentsLabel" runat="server" Text='<%# Bind("SurveyComments") %>'>
        </asp:Label><br />
    </ItemTemplate>
</asp:FormView>
```

The itemTemplate has dataBinding expressions that display the value of the database columns
Visual Studio also added the InsertItemTemplate and the EditItemTemplate for you
The *Eval()* method retrieves the values of the columns
You can also format the value
Ex:
<%#Eval(“Amount”,”{0:c}”)%>
Paging
You can let the formView automatically create the paging interface or
you can customize it yourself with the *PagerTemplate* property

To let it automatically allow paging set the AllowPaging property to true

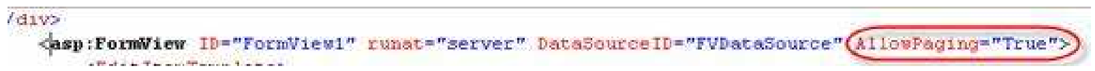
Try This in Visual Studio:

- Click the smart tag on the formView control
- Check *Enable Paging*



- Test it

Here is the code:



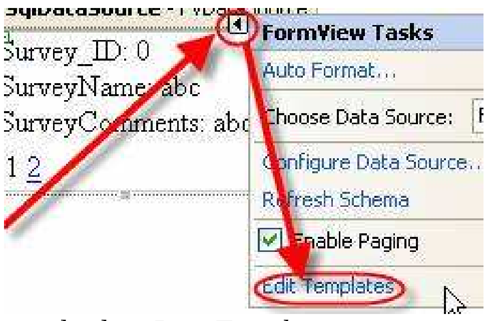
```
/div>
   <asp:FormView ID="FormView1" runat="server" DataSourceID="FVDataSource" AllowPaging="True">
```

Currently the formView does not support AJAX
Paging is not exactly efficient
PagerTemplate
Allows you to customize the appearance of the paging interface

Properties of PagerTemplate	
FirstPageImageURL	Display an image for the first page link
FirstPageText	The text for the first page link
LastPageImageURL	Display an image for the last page link
LastPageText	The text for the last page link
Mode	Display Mode • NextPrevious • NextPreviousFirstLast • Numeric • NumericFirstLast
NextPageImageURL	Image for the next page link
NextPageText	Text for the next page link
PageButtonCount	The number of page number links to display
Position	The position of the paging interface • Bottom • Top • TopAndBottom
PreviousPageImageURL	Image for the previous page link
PreviousPageText	The text for the previous page link
Visible	Hides the paging interface

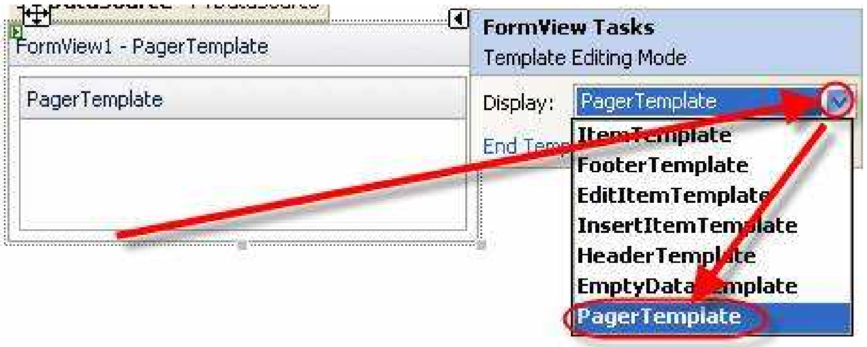
Try This in Visual Studio:

- Click the msart tag on the formView control
- Make sure *Enable Paging* is true
- Select *Edit Templates*

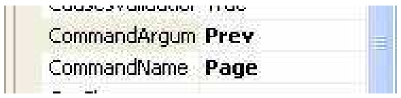


Survey_ID: 0
SurveyName: abc
SurveyComments: abc
1 2

- Click the dropdownlist and select *PageTemplate*



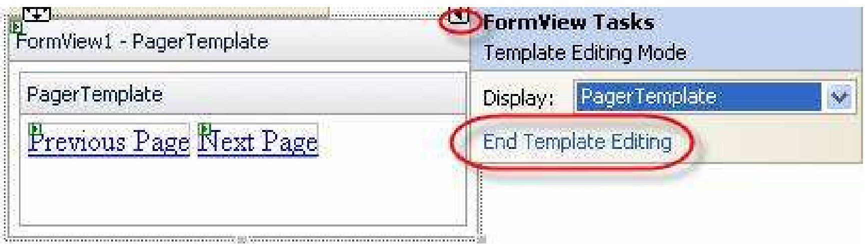
- Add a LinkButton control, name it *btnPrev*
- Set the text property to *Previous Page*
- Set the *CommandName* property to *Page*
- Set the *CommandArgument* to *Prev*



CommandArgum	**Prev**
CommandName	**Page**

Add another LinkButton control, name it *btnNext*

- Set the text property to *Next Page*
- Set the *CommandName* property to *Page*
- Set the *CommandArgument* to *Next*
- Click the smart tag again and select *End Template Editing*

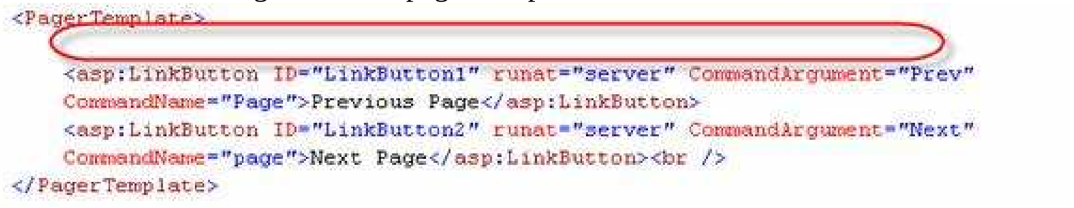


Each button you has a CommandName and CommandArgument property
CommandName is set to Page
CommandArgument is set to one of the following

CommandArgument values	
First	Navigate to the first page
Last	Navigate to the last page
Prev	Navigate to the previous page
Next	Navigate to the next page

Number	Navigate to a certain page number

- Click on the Source view
- Find the PagerTemplate in the code
- Add a blank line right after the pagerTemplate

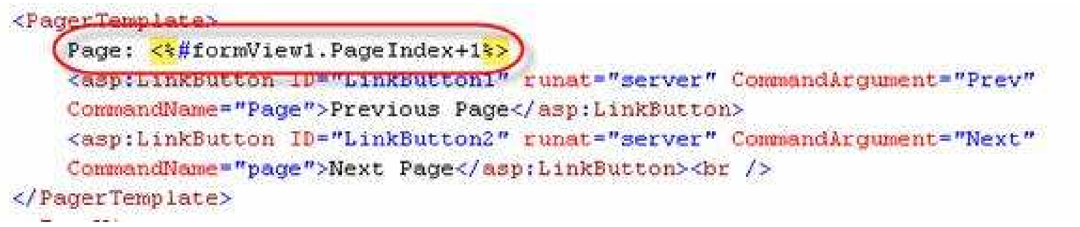


```
<PagerTemplate>

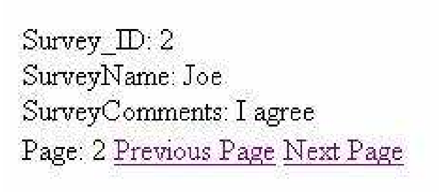
    <asp:LinkButton ID="LinkButton1" runat="server" CommandArgument="Prev"
    CommandName="Page">Previous Page</asp:LinkButton>
    <asp:LinkButton ID="LinkButton2" runat="server" CommandArgument="Next"
    CommandName="page">Next Page</asp:LinkButton><br />
</PagerTemplate>
```

- Type:

Page: <%#formView1.PageIndex+1%>
This returns the current page of the formview.
PageIndex is zero based so you must add 1 to it .Test it.



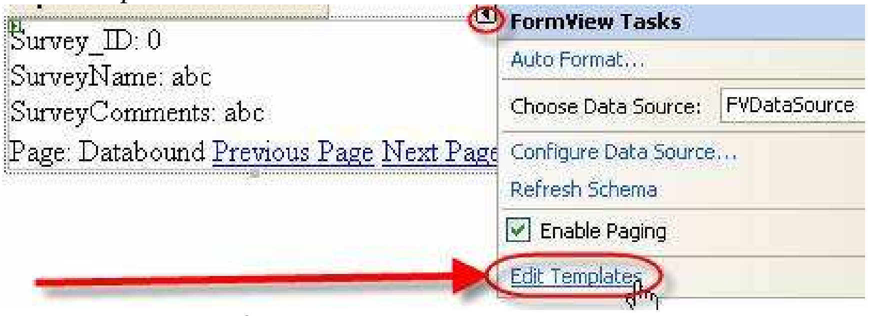
```
<PagerTemplate>
    Page: <%#formView1.PageIndex+1%>
    <asp:LinkButton ID="LinkButton1" runat="server" CommandArgument="Prev"
    CommandName="Page">Previous Page</asp:LinkButton>
    <asp:LinkButton ID="LinkButton2" runat="server" CommandArgument="Next"
    CommandName="page">Next Page</asp:LinkButton><br />
</PagerTemplate>
```



Survey_ID: 2
SurveyName: Joe
SurveyComments: I agree
Page: 2 Previous Page Next Page

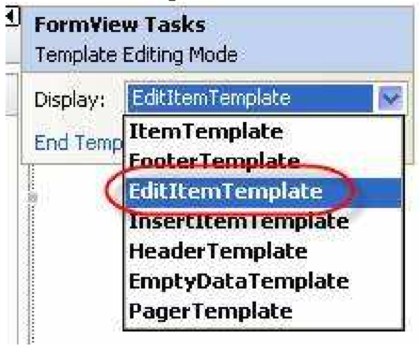
Editing with the formView control

- Click the smart tag
- Select *Edit Templates*



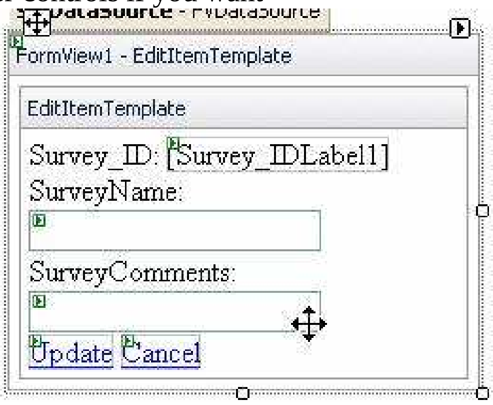
Survey_ID: 0
SurveyName: abc
SurveyComments: abc
Page: Databound Previous Page Next Page

- Select EditItemTemplate from the dropDownList

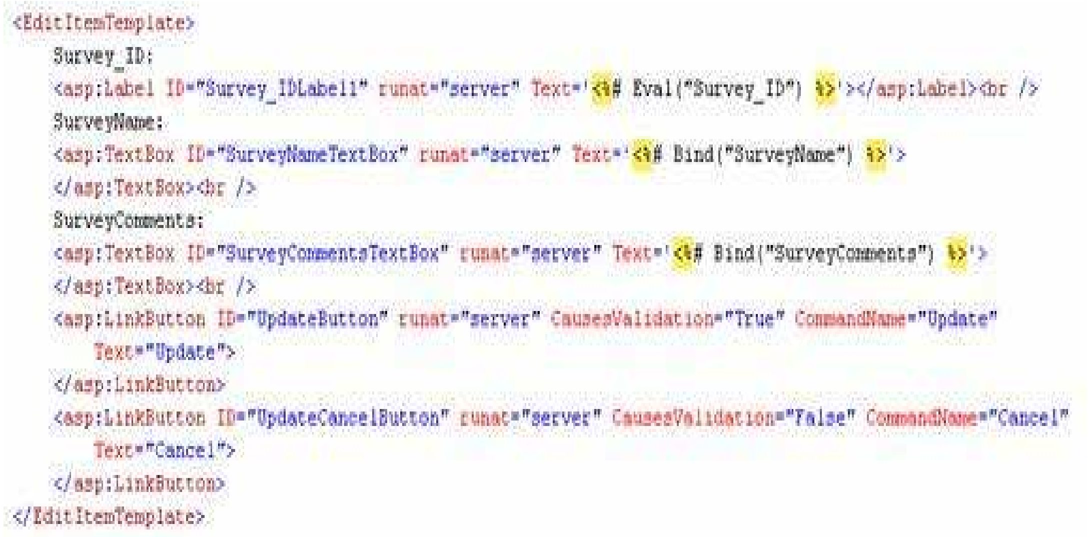


Visual Studio automatically added labels and textboxes for each field

You can change these to other controls if you want


DataSource - fvDataSource
FormView1 - EditItemTemplate
EditItemTemplate
Survey_ID: [Survey_IDLabel1]
SurveyName:
SurveyComments:
Update Cancel

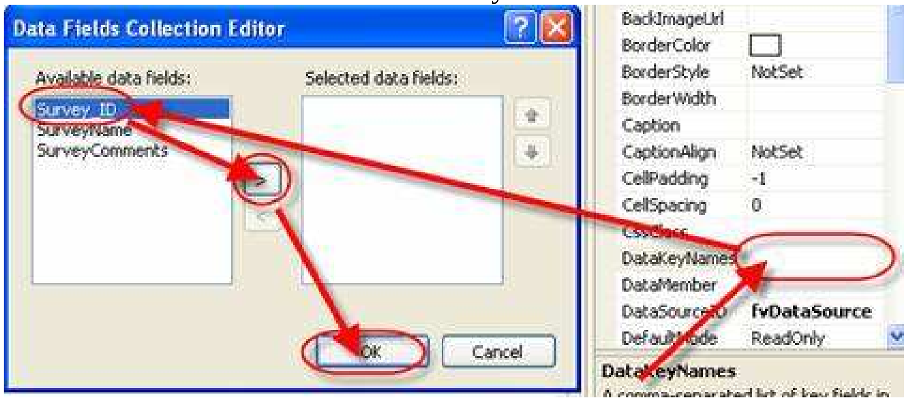
It also adds Update and Cancel linkbuttons with the functionality already added
Here is the code:



```
<EditItemTemplate>
    Survey_ID:
    <asp:Label ID="Survey_IDLabel1" runat="server" Text='<%# Eval("Survey_ID") %>'></asp:Label><br />
    SurveyName:
    <asp:TextBox ID="SurveyNameTextBox" runat="server" Text='<%# Bind("SurveyName") %>'>
    </asp:TextBox><br />
    SurveyComments:
    <asp:TextBox ID="SurveyCommentsTextBox" runat="server" Text='<%# Bind("SurveyComments") %>'>
    </asp:TextBox><br />
    <asp:LinkButton ID="UpdateButton" runat="server" CausesValidation="True" CommandName="Update"
        Text="Update">
    </asp:LinkButton>
    <asp:LinkButton ID="UpdateCancelButton" runat="server" CausesValidation="False" CommandName="Cancel"
        Text="Cancel">
    </asp:LinkButton>
</EditItemTemplate>
```

- All you have to do is add a button to get to this template
- Click the smarttag
- Select *Edit Templates*
- Select ItemTemplate
- Add a button to the itemTemplate and change the text to *Edit*
- Change the CommandName to *Edit*

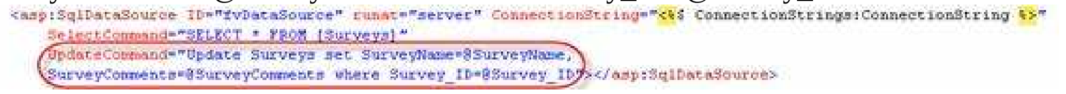
When the user clicks the button it will take them to the EditItemTemplate
But first your datasource control needs to be configured for updating and deleting for this to work
Select the formView and double click on the dataKeyNames



- Select the column with your primary key and click OK

Add this to the Data Source Control

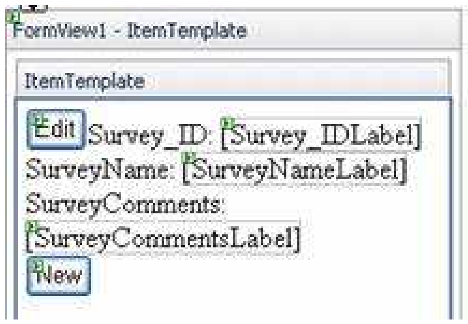
UpdateCommand="Update Surveys set SurveyName=@SurveyName,
SurveyComments=@SurveyCommentswhere Survey_ID=@Survey_ID"



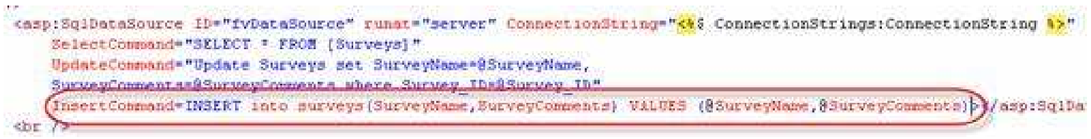
```
<asp:SqlDataSource ID="fvDataSource" runat="server" ConnectionString="<%$ ConnectionStrings:ConnectionString %>"
    SelectCommand="SELECT * FROM [Surveys]"
    UpdateCommand="Update Surveys set SurveyName=@SurveyName,
    SurveyComments=@SurveyComments where Survey_ID=@Survey_ID"></asp:SqlDataSource>
```

Visual Studio automatically uses the same field names as the parameters
You can set the formview to the Edit mode by default by setting the *DefaultMode* property to *Edit*
Inserting Data with the formView control

- Add another button to the itemTemplate
- Name it btnNew
- Set the text to New
- Set the command Name to New



You can put the formView into Insert mode by default by setting the defaultMode to *Insert*
Add the InsertCommand to the data Source control
InsertCommand=”INSERT into surveys(SurveyName,SurveyComments) VALUES
(@SurveyName,@SurveyComments)”

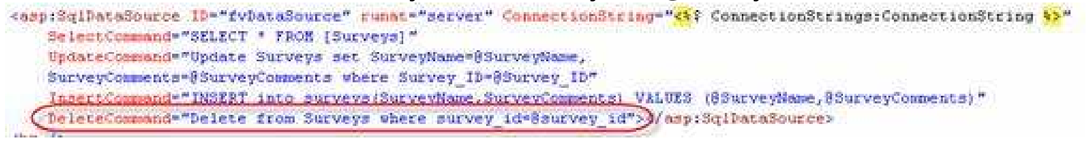


```
<asp:SqlDataSource ID="fvDataSource" runat="server" ConnectionString="<%$ ConnectionStrings:ConnectionString %>"
    SelectCommand="SELECT * FROM [Surveys]"
    UpdateCommand="Update Surveys set SurveyName=@SurveyName,
    SurveyComments=@SurveyComments where Survey_ID=@Survey_ID"
    InsertCommand=INSERT into surveys(SurveyName,SurveyComments) VALUES (@SurveyName,@SurveyComments)></asp:SqlDa
<br />
```

Deleting Data with the formView control
Deleting also requires you set the dataKeyNames property

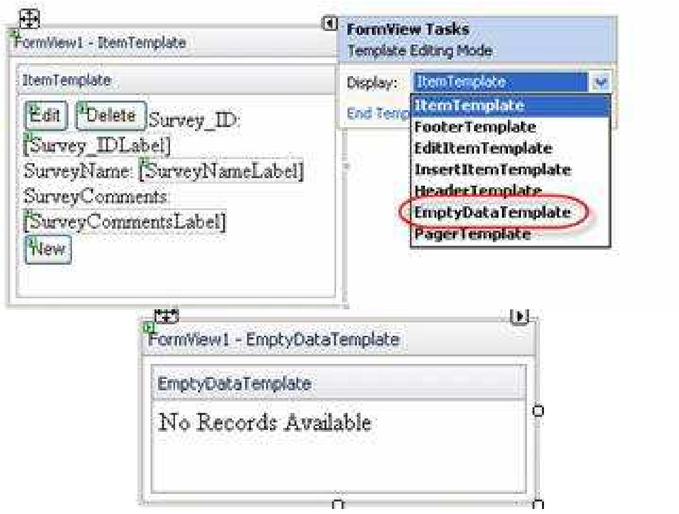
- Add another button called btnDelete
- Set the text to Delete
- Set the CommandName to Delete
- Add the SQL statement to the DeleteCommand to the data Source control

DeleteCommand=”Delete from Surveys where survey_id=@survey_id”



```
<asp:SqlDataSource ID="fvDataSource" runat="server" ConnectionString="<%$ ConnectionStrings:ConnectionString %>"
    SelectCommand="SELECT * FROM [Surveys]"
    UpdateCommand="Update Surveys set SurveyName=@SurveyName,
    SurveyComments=@SurveyComments where Survey_ID=@Survey_ID"
    InsertCommand="INSERT into surveys(SurveyName,SurveyComments) VALUES (@SurveyName,@SurveyComments)"
    DeleteCommand="Delete from Surveys where survey_id=@survey_id"></asp:SqlDataSource>
```

EmptyDataTemplate
You can specify a message to display if the data Source is empty
Click the smart tag and select EmptyDataTemplate
Type: No records available



- Click the smart tag again and select *End Template Editing*

This message will show if no records are availabe

The Repeater Control

The repeater control is driven completely by templates. This allows you to output the control anyway you want it.

Templates of the repeater control

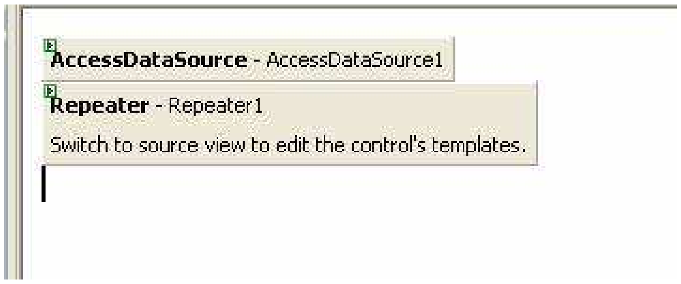
- ItemTemplate
  - Required to display data
  - Formats each item from the datasource
- HeaderTemplate
  - Formats the content before the items from the dataSource
- FooterTemplate
  - Formats the content after the items from the dataSOurce
- AlternatingItemTemplate
  - Formats every other item from the dataSource
- SeperatorTemplate
  - Formats between each item from the dataSource

Displaying Data

Use the itemTemplate to display data

This template is the only required template, all others are optional.

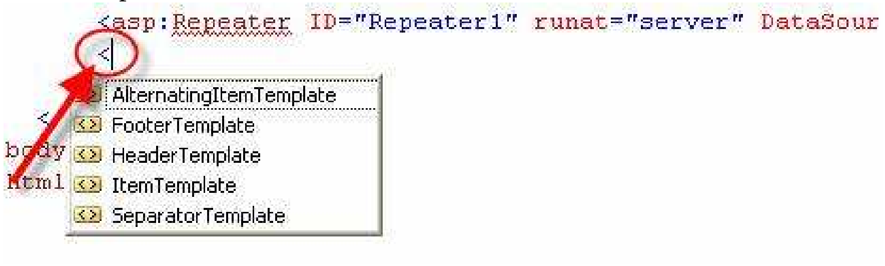
- Start a new WebSite in Visual Studio 2005
- Add a webform
- Drag a DataSource control to the page and configure it to a dataSource
- Drag a repeater control to the page
- Click the smart tag and configure it to the dataSource control


AccessDataSource - AccessDataSource1
Repeater - Repeater1
Switch to source view to edit the control's templates.

- Open the Source code view

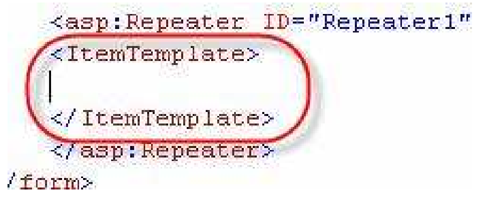
- Type a

< you choices show up in intellisense



```
<asp:Repeater ID="Repeater1" runat="server" DataSour
<
```

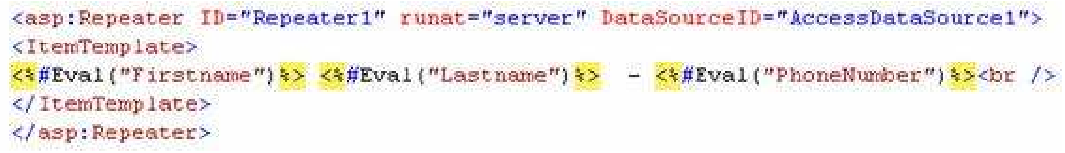
- Select *ItemTemplate*



```
<asp:Repeater ID="Repeater1"
<ItemTemplate>
|
</ItemTemplate>
</asp:Repeater>
/form>
```

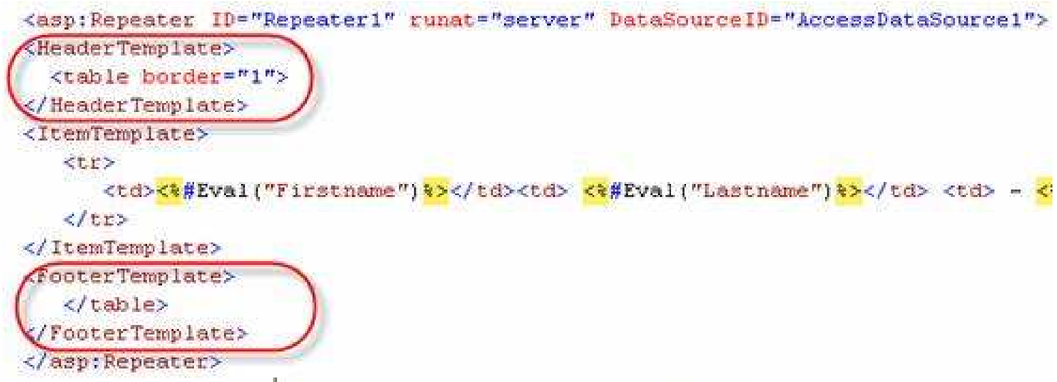
Now you can add any formatting code you want as well as fields from the database
Add:<%#Eval("fieldname")%>

Example:

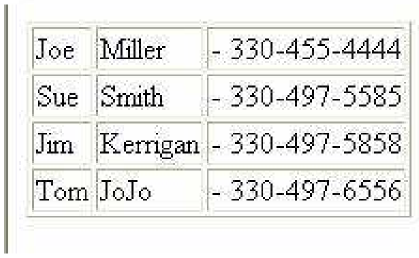


```
<asp:Repeater ID="Repeater1" runat="server" DataSourceID="AccessDataSource1">
<ItemTemplate>
<%#Eval("Firstname")%> <%#Eval("Lastname")%>  - <%#Eval("PhoneNumber")%><br />
</ItemTemplate>
</asp:Repeater>
```

The headerTemplate and footerTemplate can be used to start and stop tables or add other items to the beginning and the end of your data



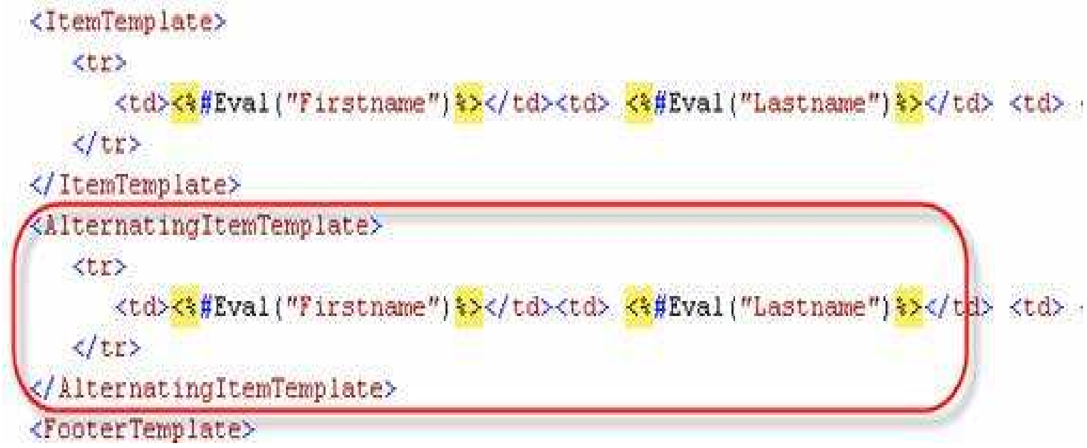
```
<asp:Repeater ID="Repeater1" runat="server" DataSourceID="AccessDataSource1">
<HeaderTemplate>
  <table border="1">
</HeaderTemplate>
<ItemTemplate>
   <tr>
      <td><%#Eval("Firstname")%></td><td> <%#Eval("Lastname")%></td> <td> - <
   </tr>
</ItemTemplate>
<FooterTemplate>
   </table>
</FooterTemplate>
</asp:Repeater>
```



Joe	Miller	- 330-455-4444
Sue	Smith	- 330-497-5585
Jim	Kerrigan	- 330-497-5858
Tom	JoJo	- 330-497-6556

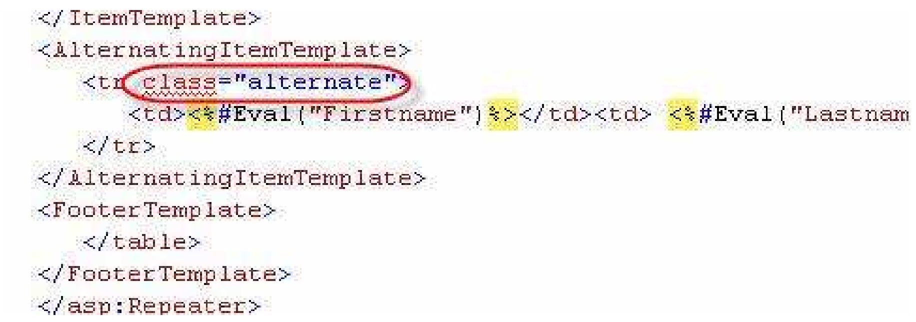
Add an AlternatingItemTemplate tag
The order you declare the templates does not matter

Copy the same content from the itemtemplate



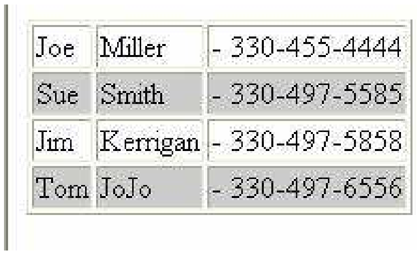
```
<ItemTemplate>
   <tr>
      <td><%#Eval("Firstname")%></td><td> <%#Eval("Lastname")%></td> <td>
   </tr>
</ItemTemplate>
<AlternatingItemTemplate>
   <tr>
      <td><%#Eval("Firstname")%></td><td> <%#Eval("Lastname")%></td> <td>
   </tr>
</AlternatingItemTemplate>
<FooterTemplate>
```

Add a class to the <tr> tag in the alternatingItemTemplate



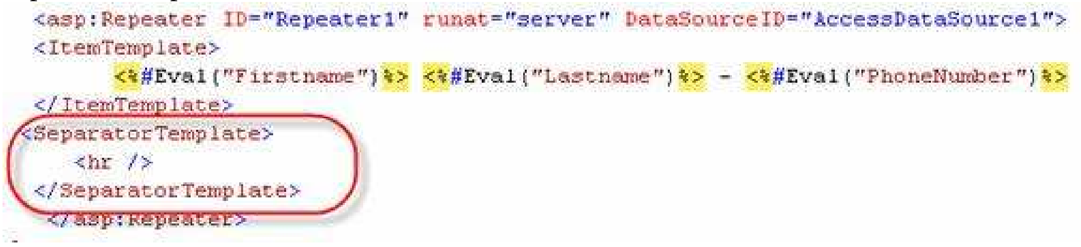
```
</ItemTemplate>
<AlternatingItemTemplate>
   <tr class="alternate">
      <td><%#Eval("Firstname")%></td><td> <%#Eval("Lastnam
   </tr>
</AlternatingItemTemplate>
<FooterTemplate>
   </table>
</FooterTemplate>
</asp:Repeater>
```

Add a style in the head of the document
<style type=”text/css”>
.alternate
{
background-color:#cccccc;
}
</style>

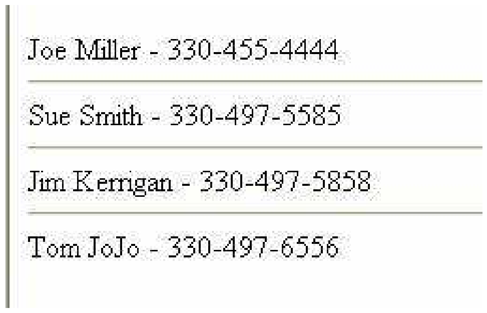


Joe	Miller	- 330-455-4444
Sue	Smith	- 330-497-5585
Jim	Kerrigan	- 330-497-5858
Tom	JoJo	- 330-497-6556

The seperatorTemplate is used to add items between each data item



```
<asp:Repeater ID="Repeater1" runat="server" DataSourceID="AccessDataSource1">
<ItemTemplate>
      <%#Eval("Firstname")%> <%#Eval("Lastname")%> - <%#Eval("PhoneNumber")%>
</ItemTemplate>
<SeparatorTemplate>
    <hr />
</SeparatorTemplate>
  </asp:Repeater>
```


Joe Miller - 330-455-4444

Sue Smith - 330-497-5585

Jim Kerrigan - 330-497-5858

Tom JoJo - 330-497-6556

Events

- DataBinding
    - When repeater control bound to its dataSOurce
- ItemCommand
    - When a control in the repeaterControl raises an event
- ItemCreated
    - When each repeatercontrol item is created
- ItemDataBound
    - When each item is bound

Master Pages

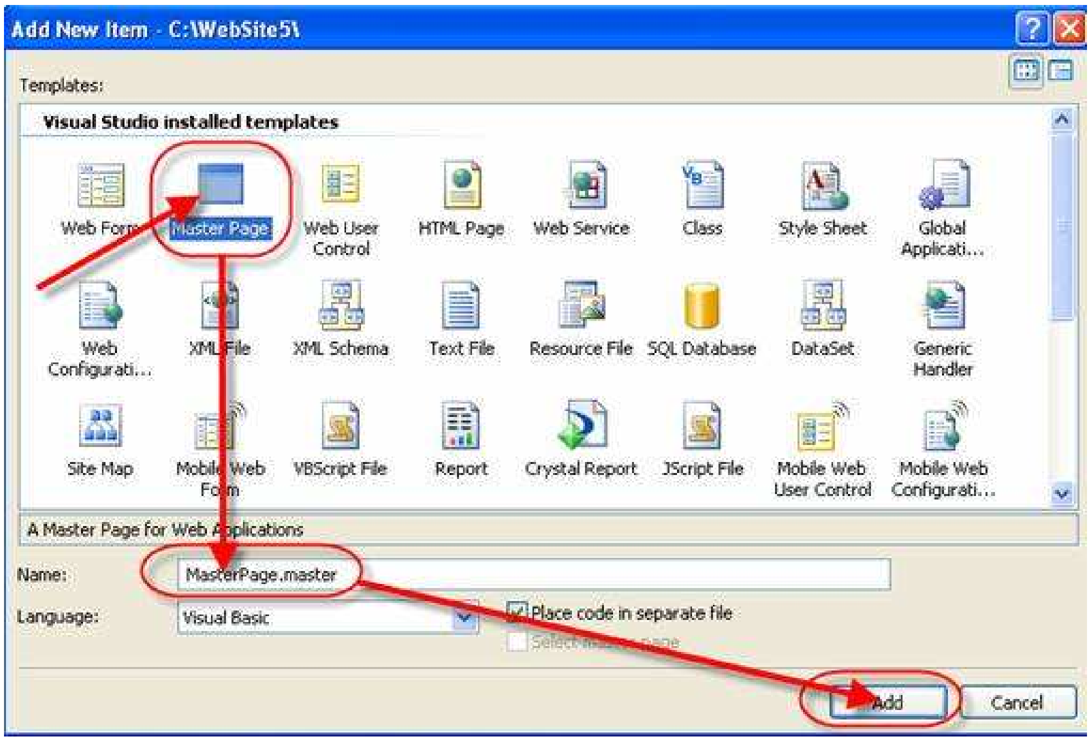
Master pages give your site a steady look and feel
Master pages contain both HTML and a code part
They create a common template that can be used on many pages
Updating the master page automatically updates all pages using it
A master page has 2 parts

1. Content that appears on each page that inherits the master page
2. Regions that can be customized by the pages inheriting the master page

Master pages can contain HTML, Web controls and server side source code

Try This in Visual Studio:

- Open Visual Studio
- Add a new item
- Select Master Page



A Master Page for Web Applications

Name: MasterPage.master

Language: Visual Basic

[✓] Place code in separate file

[ ] Select master page

Master pages end with *.Master*

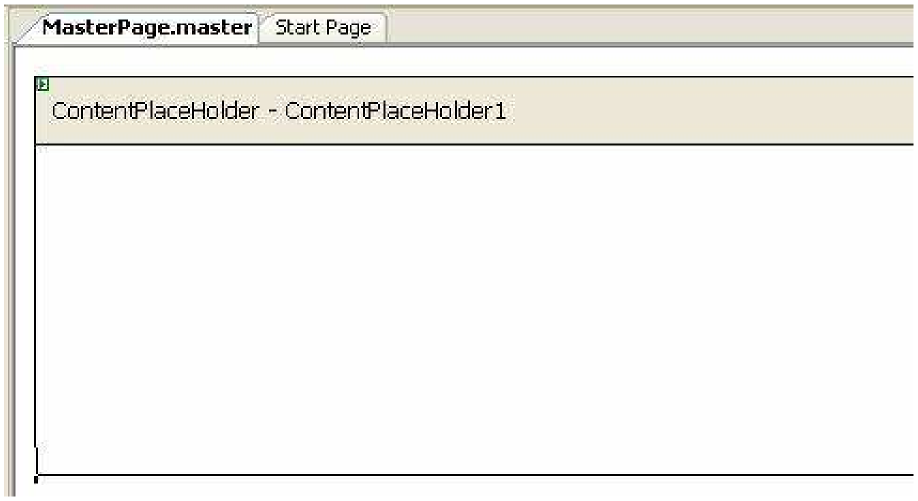
BY default visual studio names the master page *masterPage.master*

A Master page need to specify both the parts common to all pages and the parts that are customizable

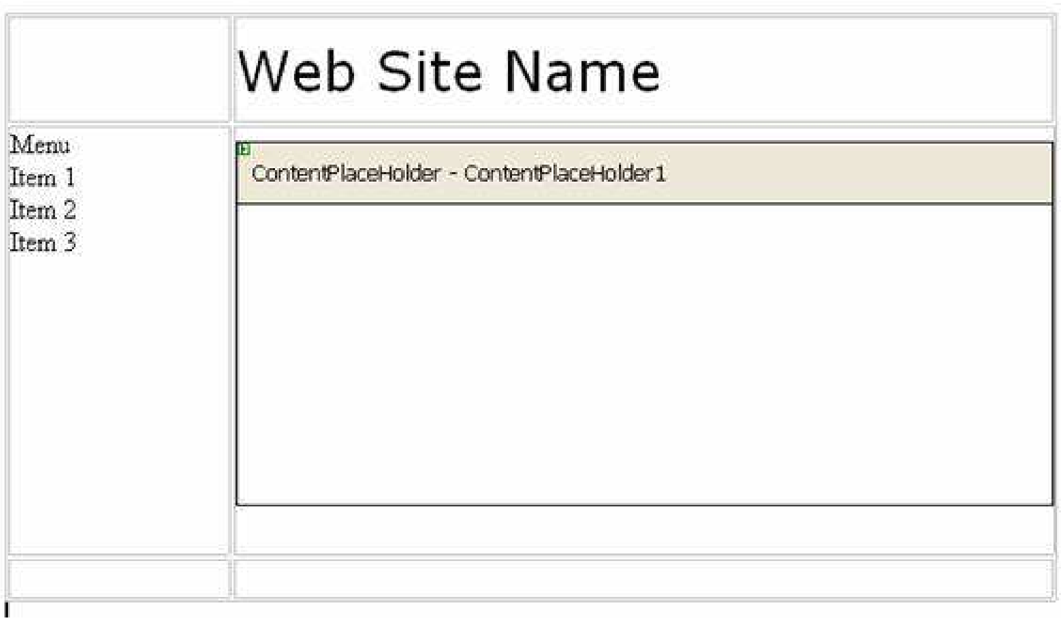
Items you add to the master page appear on all pages that inherit it

Use contentPlaceHolder controls to specify a region that can be customized

Add a table to the Master page

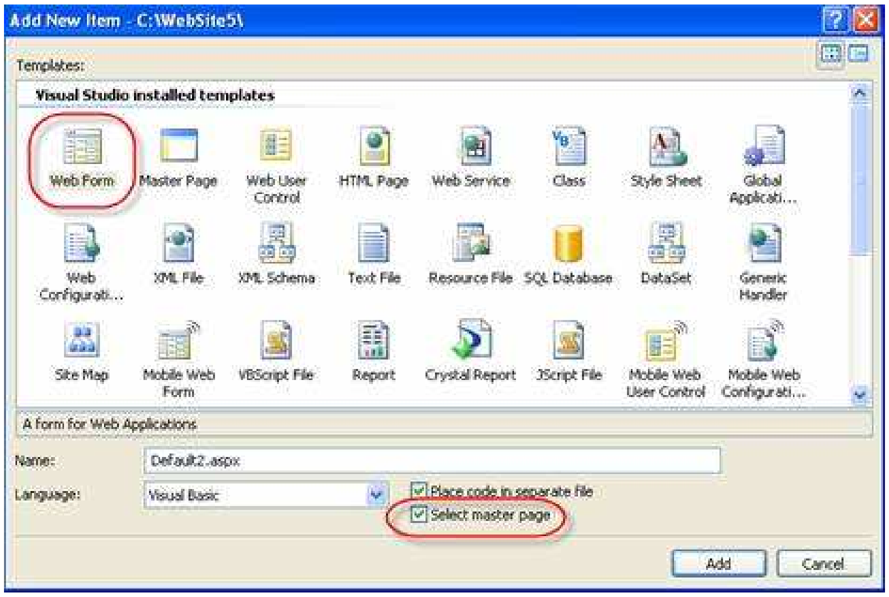


It adds on ContentPlaceHolder by default
If you place controls outside the content placeholders they will be displayed on all pages



You can have multiple contentPlaceHolder controls
Each contentPlaceHolder control can be used to customize the ASP.Net page that inherits the master page

- Add a new item
- Select Web form
- Check *Select Master Page* checkbox



A form for Web Applications

Name: Default2.aspx

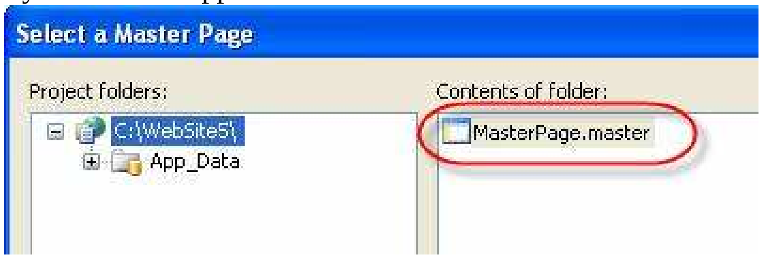
Language: Visual Basic

☑ Place code in separate file

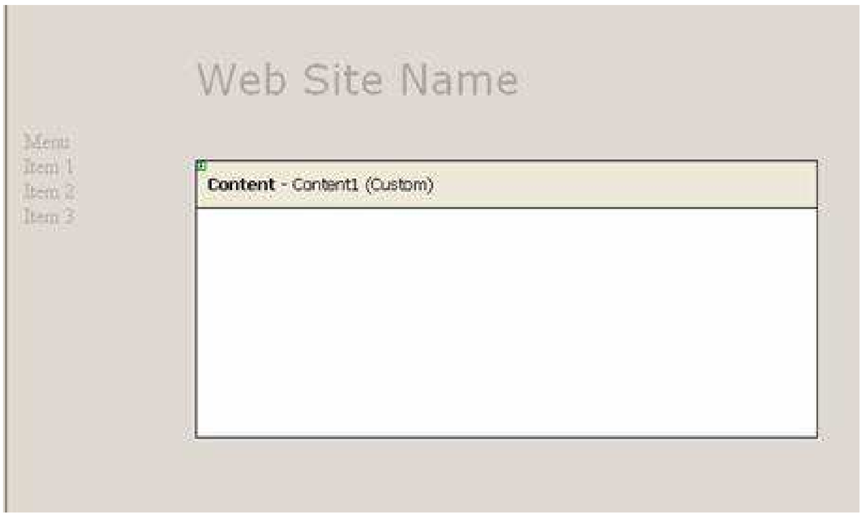
☑ Select master page

- Select the master page you created.

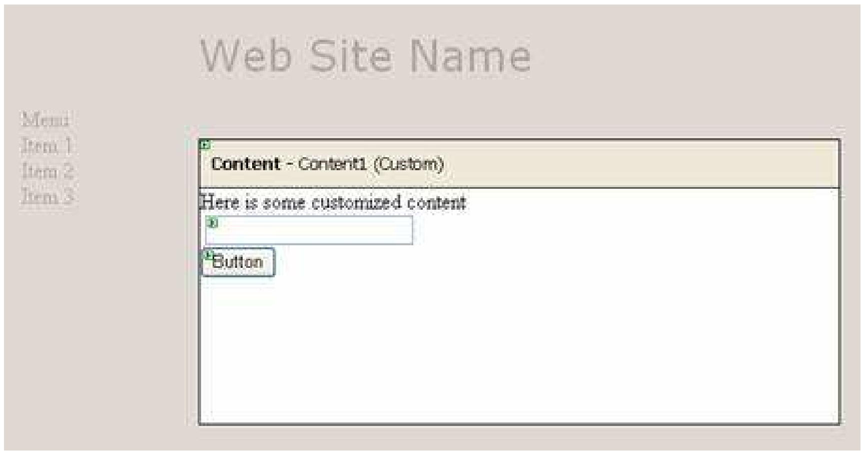
All masterpages in your site will appear



All is grayed out except the contentPlaceHolder control



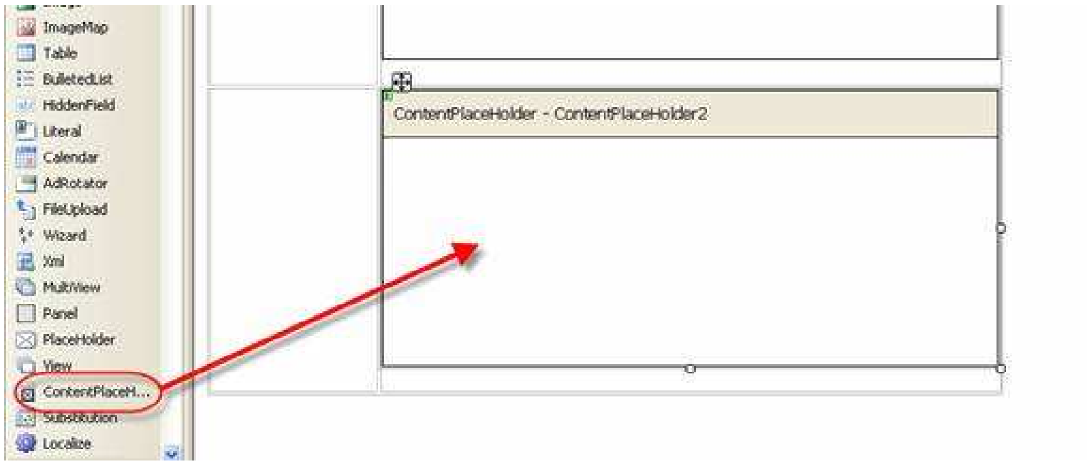
You can only add controls to and modify inside the ContentPlaceHolder



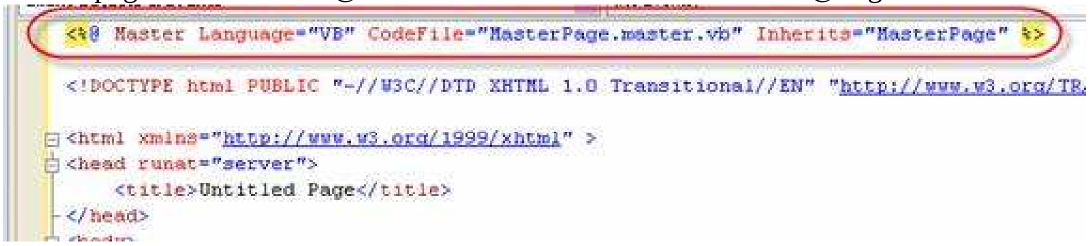
The purpose of a master page is to define a template for the website
Master pages contain a default contentPlaceHolder control when you create then
To add another contentPlaceHolder control

- Open the master page
- Drag a contentPlaceHolder to the master page

This control appears in the toolbox when you are in a master page



Master pages start with <%@ Master %> directive instead of a <%@Page %> directive

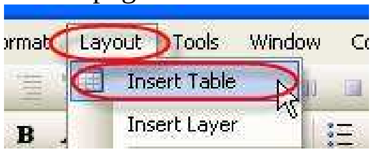


```
<%@ Master Language="VB" CodeFile="MasterPage.master.vb" Inherits="MasterPage" %>

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR,

<html xmlns="http://www.w3.org/1999/xhtml" >
<head runat="server">
    <title>Untitled Page</title>
</head>
```

Websites can have more than one master page

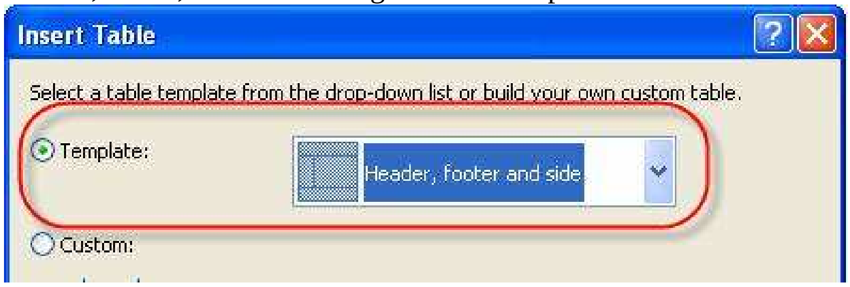


Using a table for layout

- Add a new Master page

Select from MENU:
Layout
Insert Table

- Select the table settings
- Pick the number of rows and columns, alignment, width, height etc
- Select Header,Footer, and Side setting from the template



Insert Table

Select a table template from the drop-down list or build your own custom table.

Template: Header, footer and side

Custom:

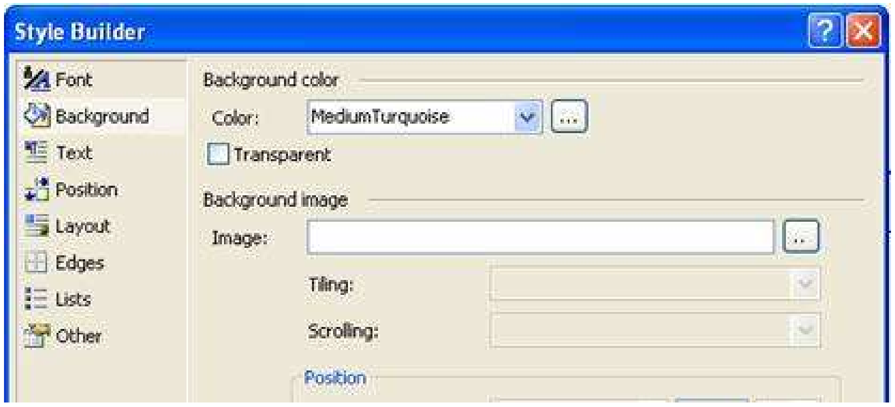
- Drag the contentPlaceHolder into one of the table cells

Format a table Cell

- Click inside a table cell
- Click on the style property

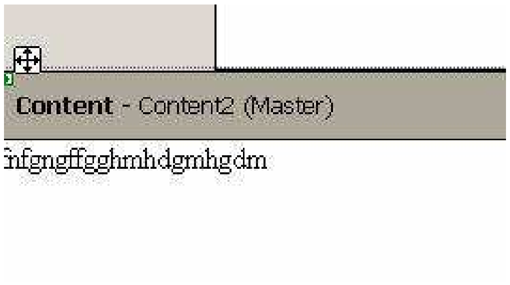
This opens the style builder

- Set the font, background, layout etc



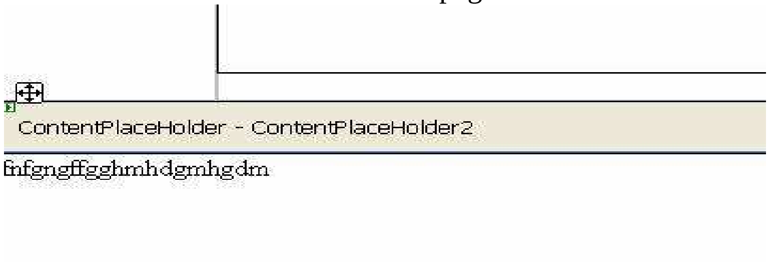
Color: MediumTurquoise

Default Content in a Master page
You can put content in the contentPlaceHolder control in a Masterpage, then in the ASP.Net page you can replace it with different content or leave it in there



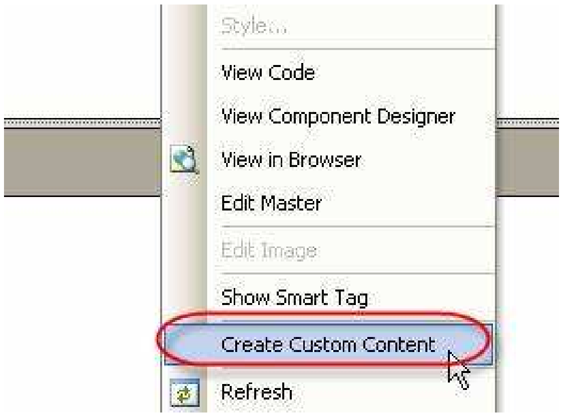
fnfgngffgghmhdgmhgdm

In the master page

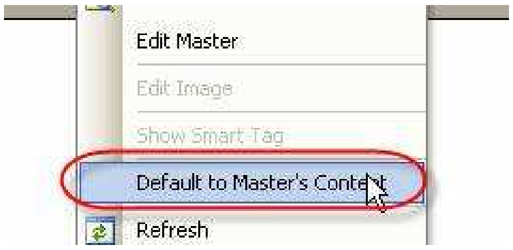


fnfgngffgghmhdgmhgdm

In the ASP.Net page inheriting from the Master page
If it doesn't show up in the ASP.Net page right click on the control and select *Create Custom Content*



You can replace this content or use the default version
You can right click the control and select *Default to Master's content*



Email in ASP.Net 2.0

How Email Works

Email server sends and retrieves your email message
Mostly 2 protocols used

1. SMTP
    a. Simple Mail Transfer Protocol
    b. Send EMail
2. POP
    a. Post Office Protocol
    b. Retrieve Email

Mail client software sends email
to a mail server using SMTP protocol
Mail server uses SMTP to send mail to recipient's mail server
Recipient's mail client uses POP to retrieve the email from their mail server
MIME protocol
Multi-purpose Internet Mail extension
Defines how the content and attachments are formatted

Create an email message

System.Net.Mail namespace has 4 main classes

1. MailMessage
   a. The email message
2. SMTPClient
   a. Sends mail message
3. MailAttachment
   a. An email attachment
4. MailAddress
   a. Email address used in
      - From
      - To
      - Cc
      - Bcc

The MailMessage Class

When you use a displayname it is displayed in the mail client's email list instead of the email address

Steps in creating an email message:

- Create a mailMessage object
- Assign the properties
- Create a SMTPClient object
- Specify details about SMTP server
- Send the mailMessage with the SMTPClient object's Send method

Constructors

MailMessage()
MailMessage(from,to)
MailMessage(from,to,subject,body)

Properties

- **From:** The sender of the email in the form of MailAddress instance.
- **To:** Indicates direct recipients of the email in the form of MailAddress instances.
- **CC:** The carbon copy recipients of the email in the form of MailAddress instances.
- **Bcc:** The blind carbon copy recipients of the email in the form of MailAddress instances.
- **Subject:** The subject of the message.
- **Body:** The body of the message.
- **IsBodyHtml:** Boolean value if the message body is HTML or text.
- **ReplyTo:** Address where all replies are directed
- **Priority:** Priority of the email message
  - **Values-**Normal, high, low

Example:

```
Dim message As New System.Net.Mail.MailMessage("jim@starkstate.edu ",  "
jo@prowebdesigners.com ")
message.Subject = "test"
message.Body = "This is a test"
```

Example 2:

```
Dim message As New System.Net.Mail.MailMessage()
message.From = New System.Net.Mail.MailAddress("jo@prowebdesigners.com")
'To must be set with the to.add as shown
message.To.Add(New System.Net.Mail.MailAddress("jim@starkstate.edu"))
message.Subject = "Comments from ProwebDesigners.com"
message.Body = String.Concat("Name:", txtName.Text, "Email:", txtEmail.Text, "Comments:",
```

txtComment.Text)

Send email message
Use the send() method of the SMTPClient Class to send your message after you create it

Constructors

SMTPClient() when setting up in web.config
SMTPClient(name) name of smtp server
SMTPClient(name,port)

Methods

Send(message) sends mailmessage object
Send(from, to, subject, body)
Ex:
Dim client as new SMTPClient()
Client.Send(message)
Dim client as new smtpClient("emailservername")
Client.send("jo@prowebdesigners.com", txtTo.text, txtSubject.text,txtBody.text)
Example:
Dim client as new System.Net.Mail.smtpClient()
Client.send(message)

Set up SMTP server setting in the web.config

You must specify the hostname and optionally the port which is normally 25

```
<system.net>
  <mailSettings>
    <smtp>
      <network host="mail.yoursite.com"
      userName="email@ yoursite.com" password="password" />
    </smtp>
  </mailSettings>
</system.net>
```

MailAddress

Sending messages to more than one email address:
Create a MailAddress object for each To property
Ex:
Dim message as New MailMessage()
Message.from=new MailAddress("from@prowebdesigners.com")
Message.to.Add("Address2@prowebdesigners.com")
Message.to.Add("Address1@prowebdesigners.com")
Constructors of MailAddress
MailMessage(address)
MailAddress(address,displayName)
Create email with CC
Dim fromAddress as new MailAddress(txtfrom.text,txtDisplay.text)
Dim toAddress as new MailAddress(txtTo.text)
Dim ccAddress as new MailAddress(txtCC.text)
Dim message as new MailMessage(fromAddress,toAddress)
Message.Subject=txtSubject.text
Message.body=txtBody.text
Message.cc.add(ccAddress)
Alternative Method
Dim message as New MailMessage(txtfrom.text, txtTo.text, txtSubject.text,txtBody.text)

Message.cc.add(new MailMessage(ccAddress)

Attachments-collection of attachment objects

Add Attachment to email message
Attachment is file sent with email message
SMTP is designed to send text messages not binary files
You must convert them to text before it can be sent
Then it is converted back to binary when received
By default it uses UUEncode to convert it
Ex:
New attachment(filename)
Ex:

```
Dim myfilename as string
Myfilename=”C:\myfiles\Document.doc”
Dim myattach as new attachment(filename)
Dim message as new mailMessage(txtfrom.text, txtTo.text, txtSubject.text,txtBody.text)
Message.attachments.add(myattach)
```

Alternative method

```
Dim myfilename as string
Myfilename=”C:\myfiles\Document.doc”
Message.attachments.add(new attachment(myfilename))
```

Using FileUpload control to add attachments

Add a fileupload control to the page
Add this code:

```
If FileUpload1.HasFile Then
Try FileUpload1.SaveAs(String.Concat("D:\yourpath\attachments\", FileUpload1.FileName))
Catch ex As Exception
  ‘add error handling here
End Try
Dim filename As String
filename = (String.Concat("D:\yourpath\attachments\", FileUpload1.FileName))
Dim myattach As New System.Net.Mail.Attachment(filename)
message.Attachments.Add(myattach)
End If
```

Create an HTML message

Set the isBodyHTML to true
Then you can use HTML in the message that you assign to the body property

```
message.IsBodyHtml = True
message.Body = String.Concat("Name:", txtName.Text, "<br>Email:", txtEmail.Text,
"<br>Comments:", txtComment.Text)
```

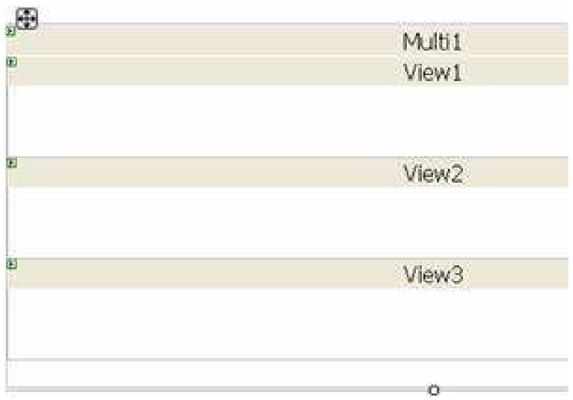
Displaying a Multi-Part Form

The Multiview contol can be used to divide a page into multiple sub pages
MultiView control has following commands

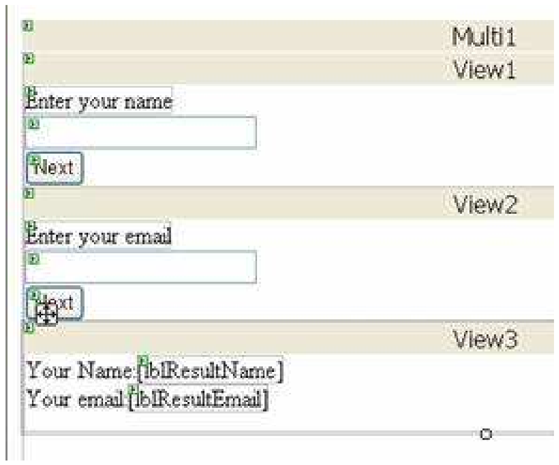
NextView	Activate the next view control
PrevView	Activate the previous view control
SwitchViewByID	Activate the view identified by the button control’s commandArgument

SwitchViewByIndex	Activate the view identified by the button control's commandArgumen

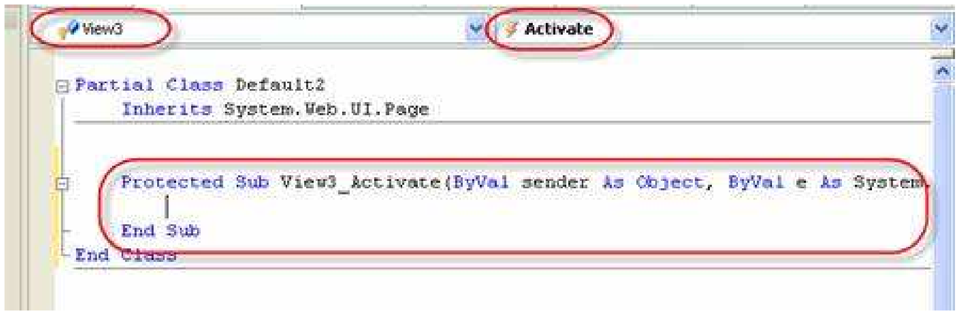
- Open Visual Studio
- Create a web page
- Drag a multiView control to the page, name it *multi1*
- Add 3 view controls in the mutliview control



- Set the MultiView's activeViewIndex to 0
- In View1
    - Add a textbox control
        - Name it txtName
    - add a label above the textbox
        - Set the label's text to *Enter your name*
        - Set the label's id to *lblName*
        - Set the label's associatedControlID to *txtName*
    - Add a button control
        - Set the text to Next
        - Set the commandName to NextView
- In View 2
    - Add a textbox control
        - Name it *txtEmail*
    - Add a label
        - Name it *lblEmail*
        - Set the text to *Enter your email*
        - Set the associatedControlId to *txtEmail*
    - Add a button control
        - Set the text to *Next*
        - Set the commandName to *NextView*
- In view 3
    - Type *Name:*
    - add a label
        - name it *lblResultName*
    - Press enter
    - Type *Email:*
    - Add a label
        - Name it *lblResultEmail*



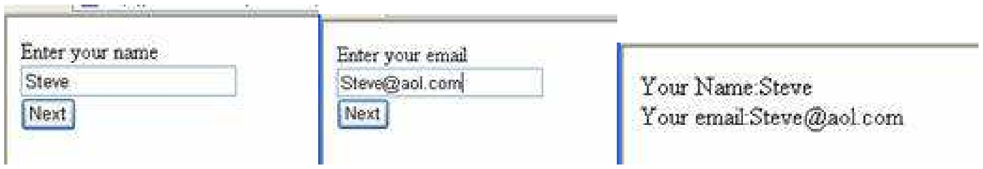
- Go to the code View
- Select View3 and Activate



```
Partial Class Default2
    Inherits System.Web.UI.Page

    Protected Sub View3_Activate(ByVal sender As Object, ByVal e As System
        |
    End Sub
End Class
```

Add this code:
lblResultName.text=txtName.text
lblResultEmail.text=txtEmail.text



Displaying Different Page Views
Multiview contol

Hide and display different areas of a page
Can use to create tabbed page
Or divide a long form into multiple forms

Contains one or more View controls
Use multiview to select a view control to render
The other view controls are hidden

You can only view one view control at a time
Multiview controls
Properties:

- ActiveViewIndex
  - Select view control to show by index
- Views
  - Get the collection of view controls in a multiview control

Methods:

- getActiveVIew
  - get the selected view control
- setActiveView
  - select the active view

Event:

- activeViewChanged
  - fired when a new view is selected

View Control

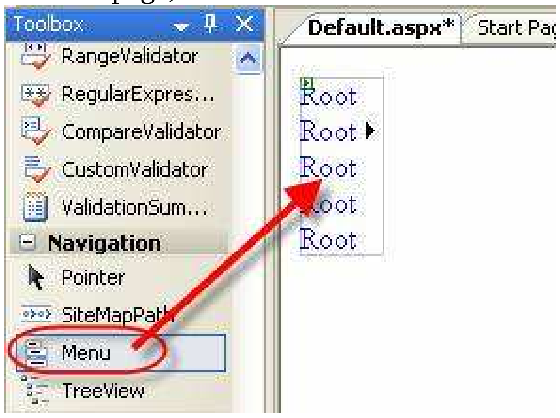
Container for other controls

Events:

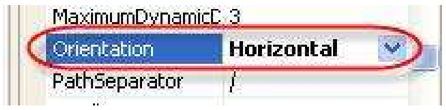
- Activate
  - When view gets selected
- Deactivate
  - When view loses selection

You can use a Multiview control with the Menu control to create a tabbed page

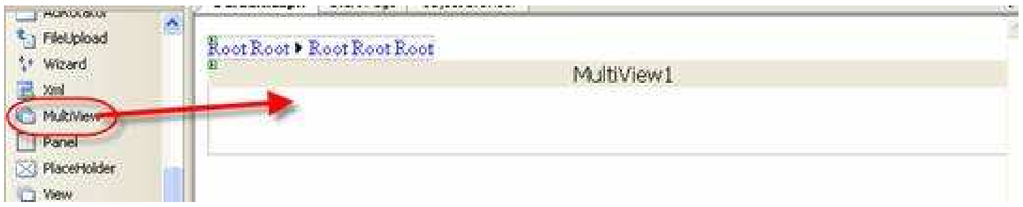
- Open Visual Studio
- Create a web page
- Drag a Menu control to the page, name it *mnuTabs*



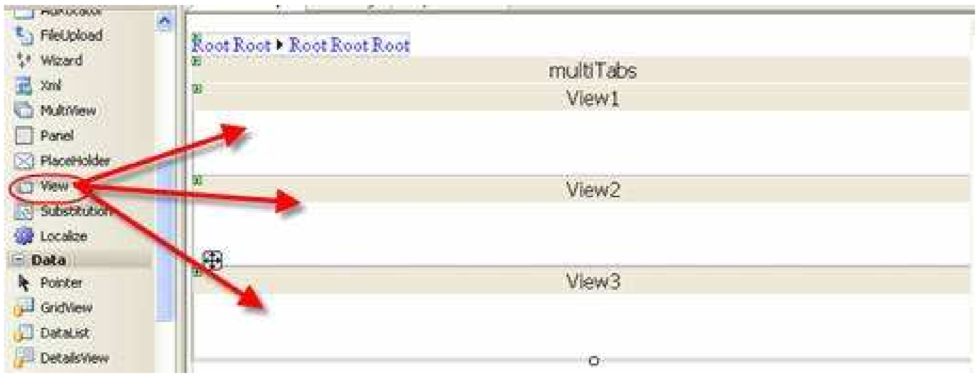
- Set the orientation property to Horizontal



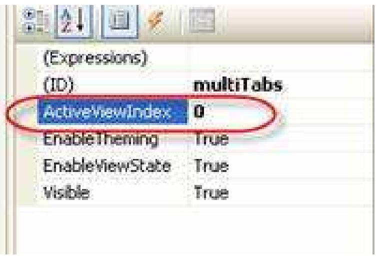
- Add a multiView control, name it *multiTabs*



- Drag a 3 view controls into the multiview control



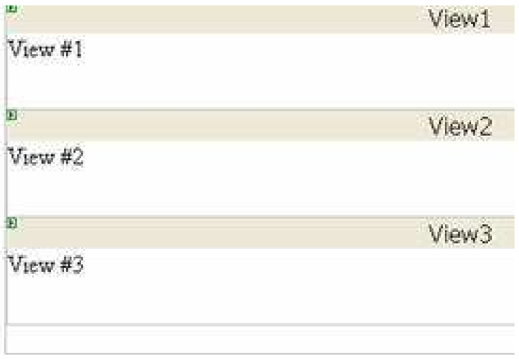
- Select the multiView control and set the *ActiveViewIndex* to 0



(Expressions)	
(ID)	**multiTabs**
ActiveViewIndex	0
EnableTheming	True
EnableViewState	True
Visible	True

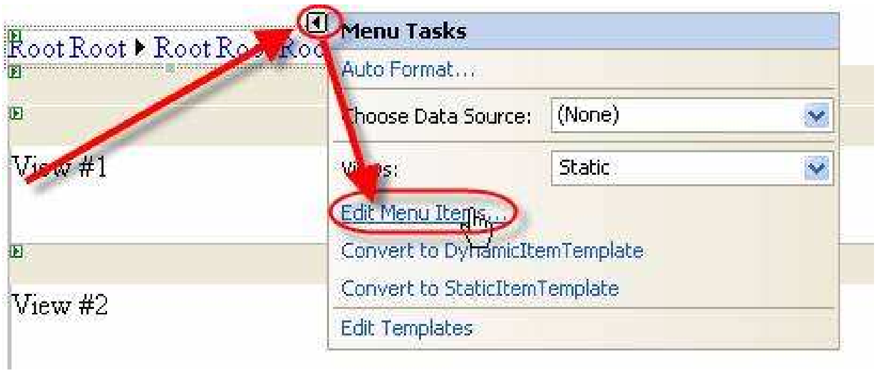
- Type into each View

You could also add controls

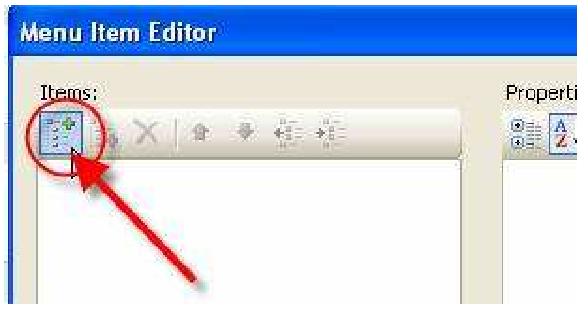


View1
View #1
View2
View #2
View3
View #3

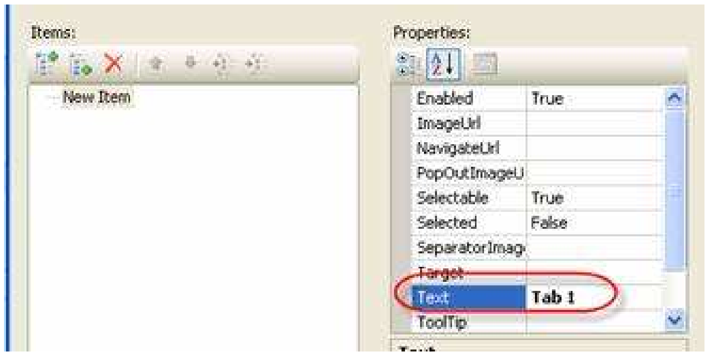
- Select the Menu Control and open the smart tag
- Select Edit Menu Item


Root Root ▸ Root Root Root
View #1
View #2
Menu Tasks
Auto Format...
Choose Data Source: (None)
Views: Static
Edit Menu Items...
Convert to DynamicItemTemplate
Convert to StaticItemTemplate
Edit Templates

- Click *Add a root item* button



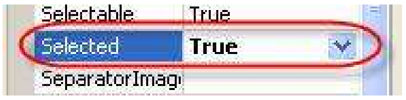
- Change the text to Tab1



Enabled	True
ImageUrl	
NavigateUrl	
PopOutImageU	
Selectable	True
Selected	False
SeparatorImag	
Target	
Text	Tab 1
ToolTip	

- Change *selected* property to *true*
- *Change the value to 0*

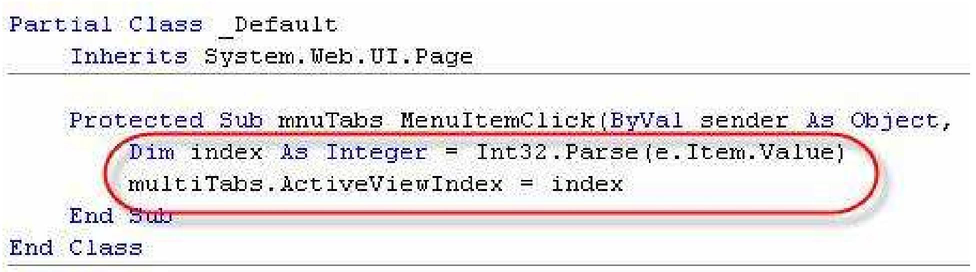
Value must start with 0 and increment for each tab
The value is what gets passed to the ActiveViewIndex of the mutliView control to select the tabs



Selectable	True
Selected	True
SeparatorImag	

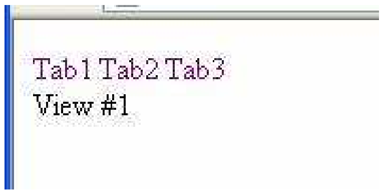
- Add two more tabs and change the text to Tab2 and Tab3
- Change the values to 1 and 2
- Click OK
- Double-click the menu control and add this code:

Dim index As Integer = Int32.Parse(e.Item.Value)
multiTabs.ActiveViewIndex = index



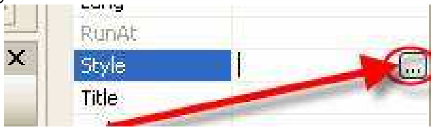
```
Partial Class _Default
    Inherits System.Web.UI.Page

    Protected Sub mnuTabs_MenuItemClick(ByVal sender As Object,
        Dim index As Integer = Int32.Parse(e.Item.Value)
        multiTabs.ActiveViewIndex = index
    End Sub
End Class
```

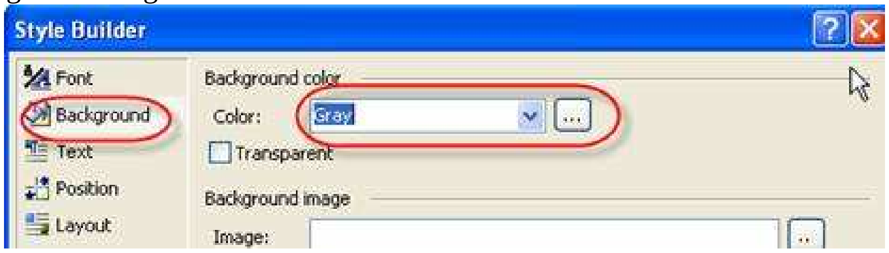


Lets make it look a little nicer

- Click the webform
- Select the Style property



- Change the background color


Style Builder

Background color

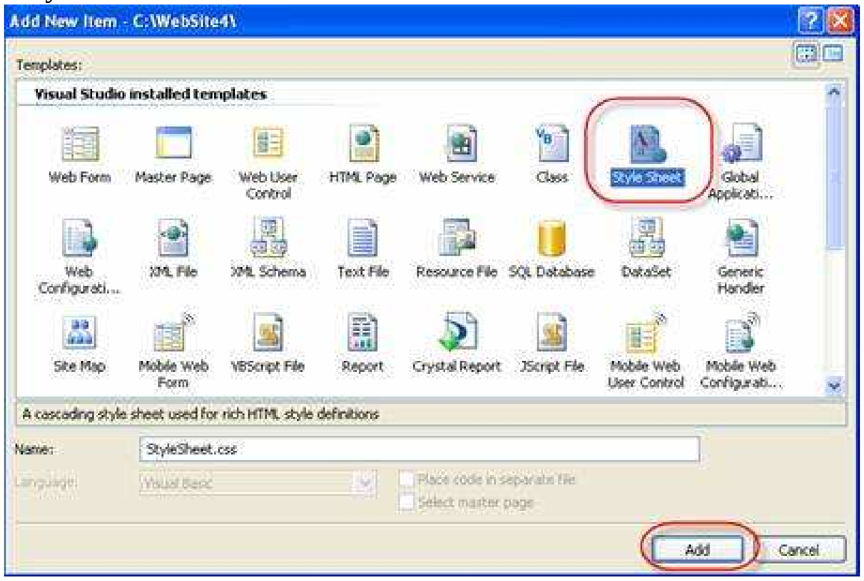
Color: Gray

You need to add 5 style classes

1. background color of the page
2. All tabs
3. Each tab
4. The selected tab
5. the contents of each tab

Add a new item

- o Stylesheet

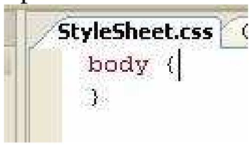

Add New Item - C:\WebSite4\

A cascading style sheet used for rich HTML style definitions

Name: StyleSheet.css

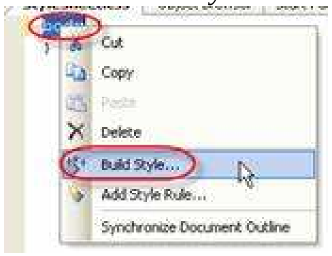
Language: Visual Basic

- Double-click it in the solution explorer

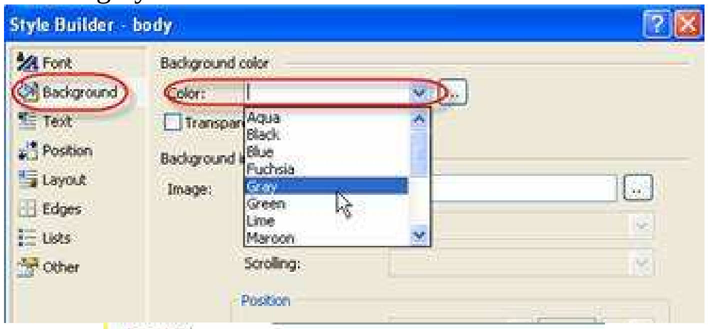

StyleSheet.css

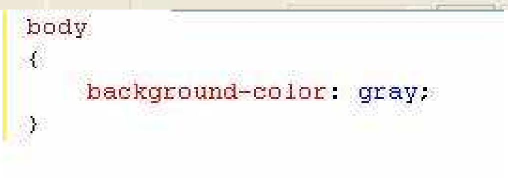
```
body {
}
```

- right-click on the body tag and select *Build style*



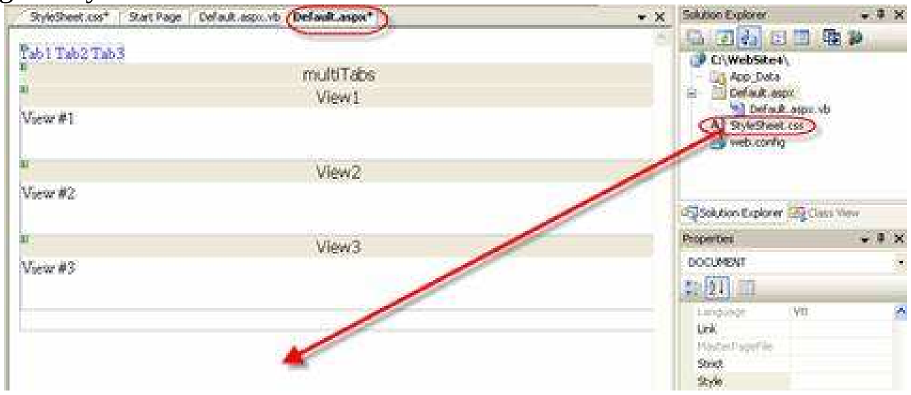
- Select background
- Change the color to gray



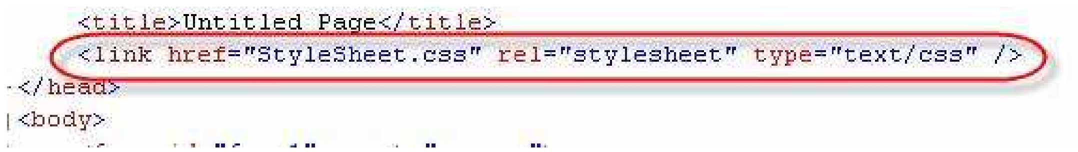


```
body
{
    background-color: gray;
}
```

- Go back to your web form
- Drag the stylesheet to the web form

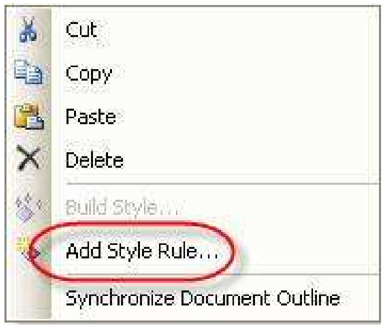


It adds the code to link your page to the style sheet

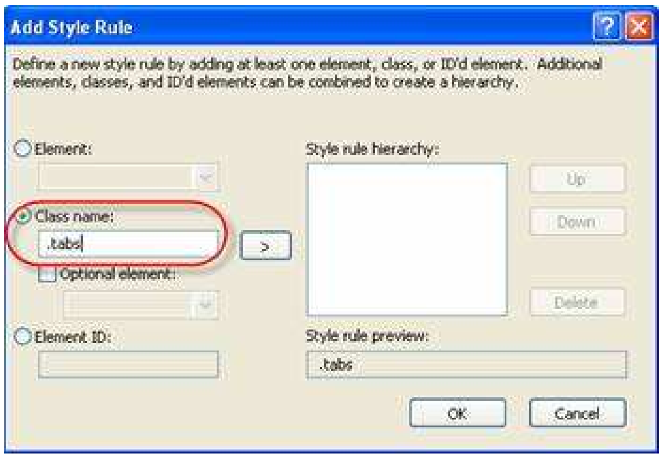


```
    <title>Untitled Page</title>
    <link href="StyleSheet.css" rel="stylesheet" type="text/css" />
</head>
<body>
```

- Select the CSS page again
- Right-click the web form and select *Add Style Rule*



Select *Class Name*
Name it *.tabs*

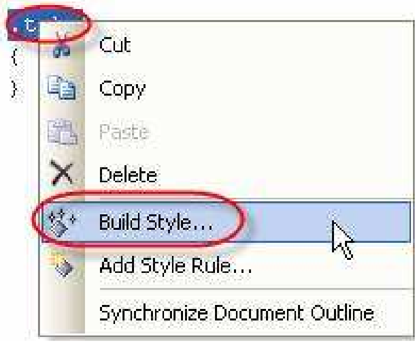


Define a new style rule by adding at least one element, class, or ID'd element. Additional elements, classes, and ID'd elements can be combined to create a hierarchy.

Class name: .tabs

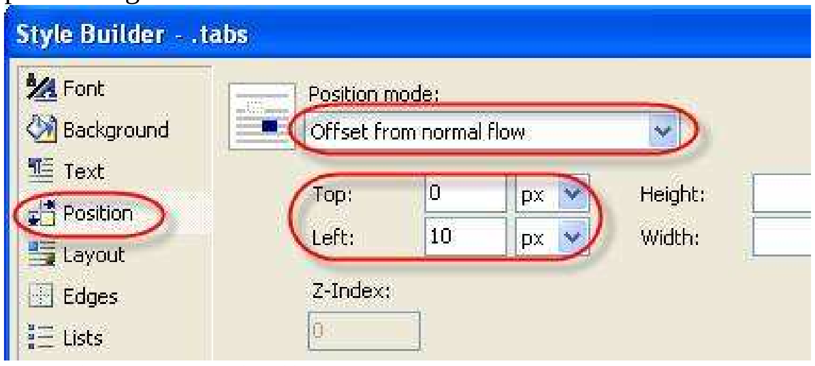
Style rule preview: .tabs

- Click *OK*
- Right-click *.tabs*
- Select *Build Style*



- Select Position and Offset from normal mode

This makes the positioning relative



Position mode: Offset from normal flow

Top: 0 px

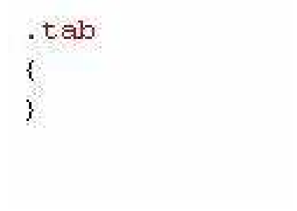
Left: 10 px

Z-Index: 0

- Set the pixels for top and left offsets
- Go back to your web form
- Select the menu
- Change the CSSClass property to tabs

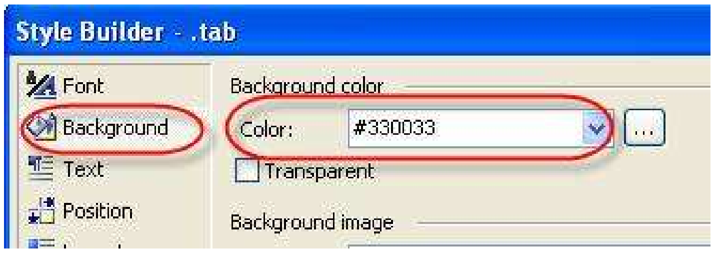
Back to the stylesheet

- Add a .tab class



```
.tab
{
}
```

- Select background color and pick a dark color


Style Builder - .tab

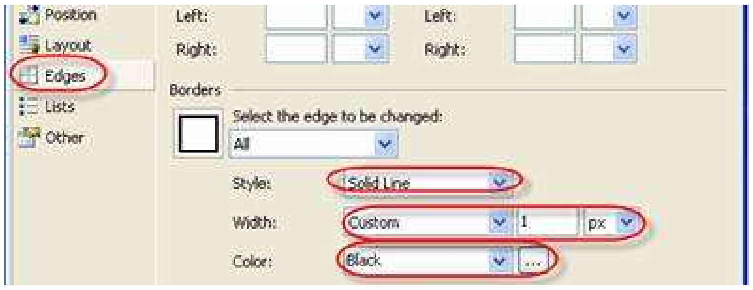
Background color

Color: #330033

Transparent

Background image

- Select edges
  - Solid line
  - Custom 1 px
  - black


Borders

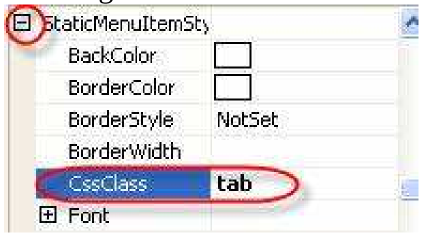
Select the edge to be changed: All

Style: Solid Line

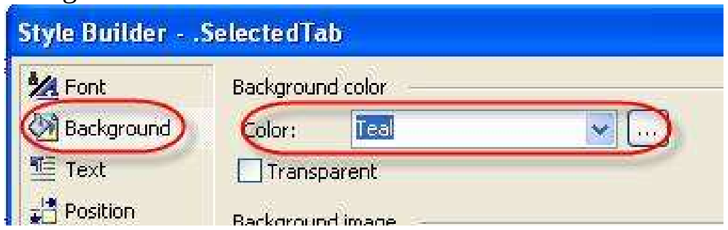
Width: Custom 1 px

Color: Black

Go to the web form and select the menu
Open the StaticMenuItemSyle and change the CssClass to *tab*


⊟ StaticMenuItemSty	
BackColor	☐
BorderColor	☐
BorderStyle	NotSet
BorderWidth	
CssClass	**tab**
⊞ Font	

- Add another CSS class and name it *.SelectedTab*
- Change the background color


Style Builder - .SelectedTab

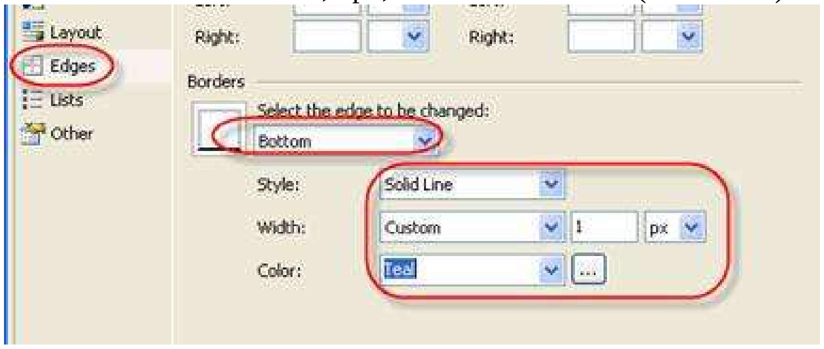
Background color

Color: Teal

Transparent

Background image

- Change the bottom border to solid, 1px, the color of the tabs(to blend in)


Borders

Select the edge to be changed: Bottom

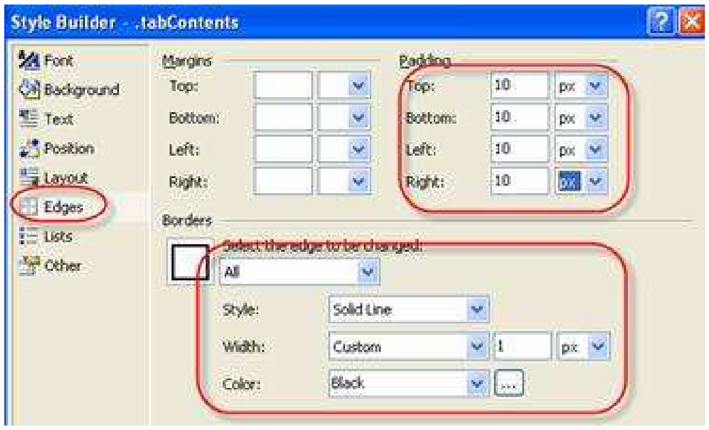
Style: Solid Line

Width: Custom 1 px

Color: Teal

- Add a class for *.tabContents*
- Change the background to the same color as the tabs

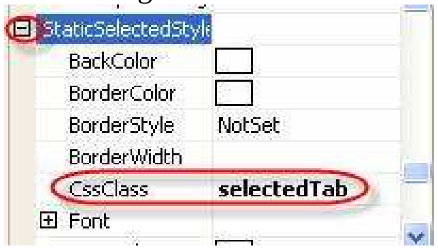
- Change all the padding to 10px
- Change all border to solid, 1px, black


Style Builder - .tabContents

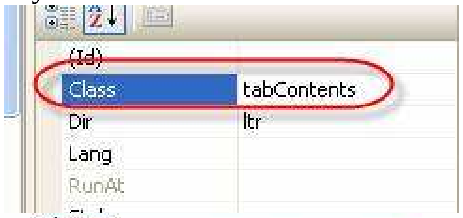
Padding
Top: 10 px
Bottom: 10 px
Left: 10 px
Right: 10 px

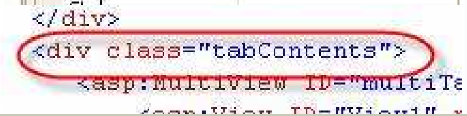
Select the edge to be changed: All
Style: Solid Line
Width: Custom 1 px
Color: Black

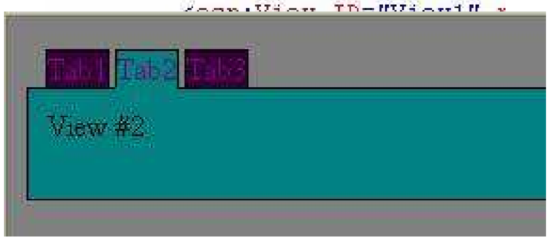
- Go back to the web form
- Select the menu
- Open StaticSelectedStyle and change the cssClass to *selectedTab*


StaticSelectedStyle
BackColor
BorderColor
BorderStyle NotSet
BorderWidth
CssClass **selectedTab**
Font

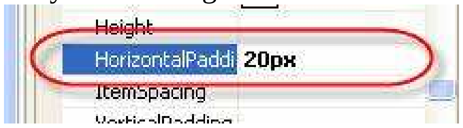
- Open the code view
- Select the <div> tab around the multiView control
- Change the Class property to *tabContents*

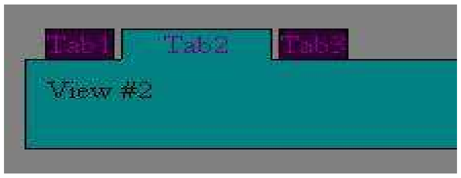

(Id)
Class tabContents
Dir ltr
Lang
RunAt


```
</div>
<div class="tabContents">
    <asp:MultiView ID="multiTa
```



- Select the StaticSelectedStyle and change the horizontal Padding to 20px


Height
HorizontalPaddi **20px**
ItemSpacing



You can change the other styles as well

Wizard Control

The wizard control can be used to divide a large form into small subforms
A wizard has more features than a multiView control
It contains one or more wizardStep controls
Only one can be displayed at a time

Properties	
CancelDestinationPageURL	The URL the user is sent when they click cancel
DisplayCancelButton	Hide or display cancel button
DisplaySideBar	Hide or display the Wizard's side bar which displays a list of all the steps
FinishDestinationPageURL	The URL the user is sent when they click the finish button
headerText	Text that appears at the top of the wizard control

Templates	
FinishNavigationTemplate	Control appearance of navigation area of the finish step
HeaderTemplate	Control appearance of the header area of the wizard control
SideBarTemplate	Control the appearance of the sidebar of the wizard control
StartNavigationTemplate	Control the appearance of the navigation area of the start step
StepNavigationTemplate	Control the appearance of the navigation area of steps that are not the complete, finish or start steps

Method	
MoveTo()	Move to a wizardStep

Events	
ActivateStepChanged	When a new wizardStep gets active
CancelButtonClick	When cancel button clicked
FinishButtonClick	When finish button clicked
NextButtonClick	When next button clicked
PreviousButtonClick	When previous button clicked
SideBarButtonClick	When a sidebar button clicked

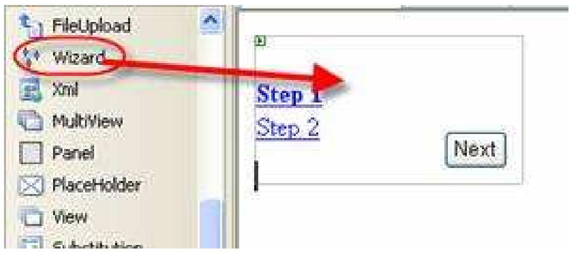
WizardStep controls:

Properties	
AllowReturn	Prevent or allow a user to return to this step from a

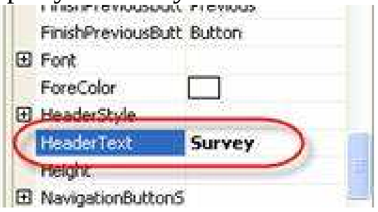
	future step
StepType	• Auto – default, position determines the setting • Complete – no buttons • Finish – previous and finish buttons • Start - no previous button • Step – previous and next buttons
Title	Title displayed in sidebar

Try This in Visual Studio:

- Add a new webform
- Name it *wizard.aspx*
- Add a wizard control, name it *wizard1*

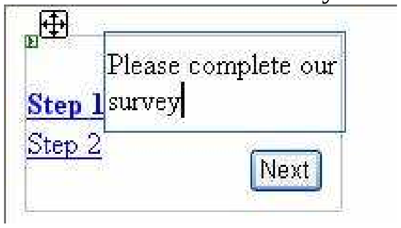


- Change the headerText property to *Survey*



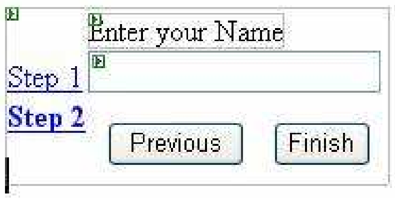
HeaderText Survey

- Click in the wizard control and a container box lets you add to it

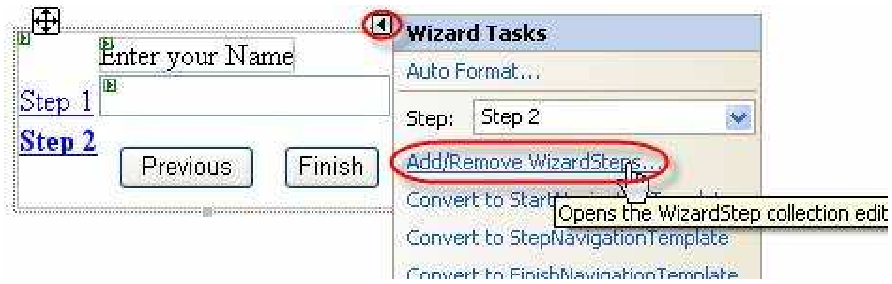


Please complete our survey

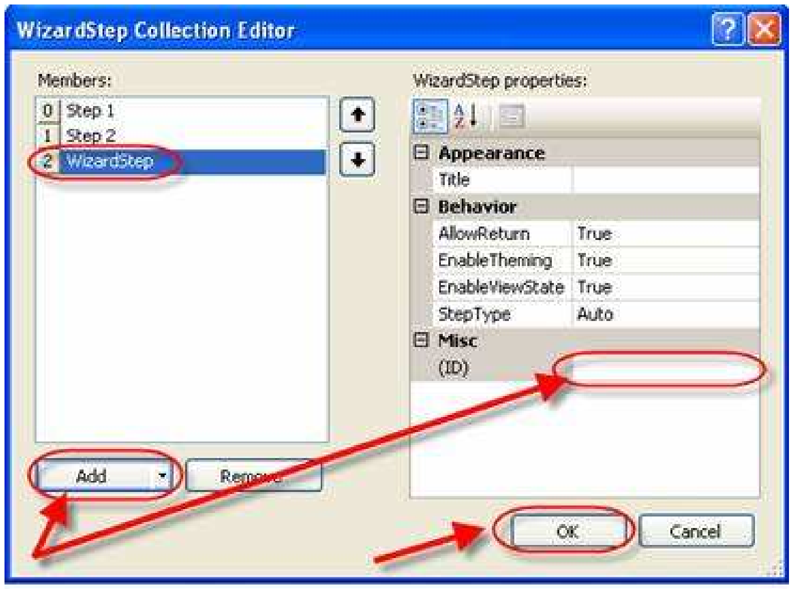
- Click on step2
- Add a label control
- Set the text to *Enter your name*
- Add a textbox
- Name it *txtName*
- Change the label's *associatedControlID* to *txtname*



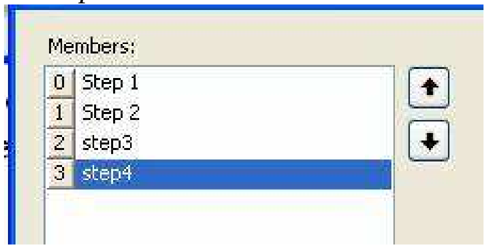
- Click the smart tag and select *Add/Remove Wizard Steps*


Enter your Name
Step 1
Step 2
Previous
Finish
Wizard Tasks
Auto Format...
Step: Step 2
Add/Remove WizardSteps...
Convert to StartNavigationTemplate
Opens the WizardStep collection edit
Convert to StepNavigationTemplate
Convert to FinishNavigationTemplate

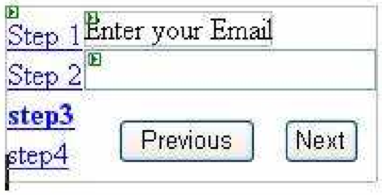
- Click Add



- Change the ID to *Step 3*
- Add another and name it *step4*

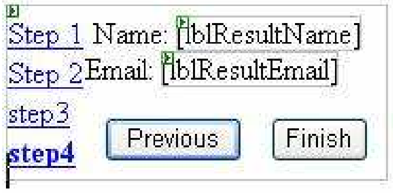


- Click *OK*
- Click on step3
- Add a label control
- Set the text to *Enter your email*
- Add a textbox
- Name it *txtEmail*
- Change the label’s *associatedControlID* to *txtEmail*

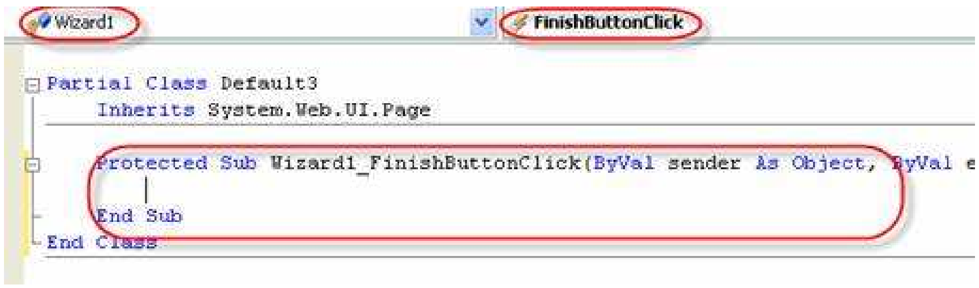


- Click on step4
- Type Name: Add a label called *lblResultName* and clear the text

- Type Email: Add a label called *lblResultEmail* and clear the text



- Go to the code view
- Select wizard1 and FinishButtonClick event



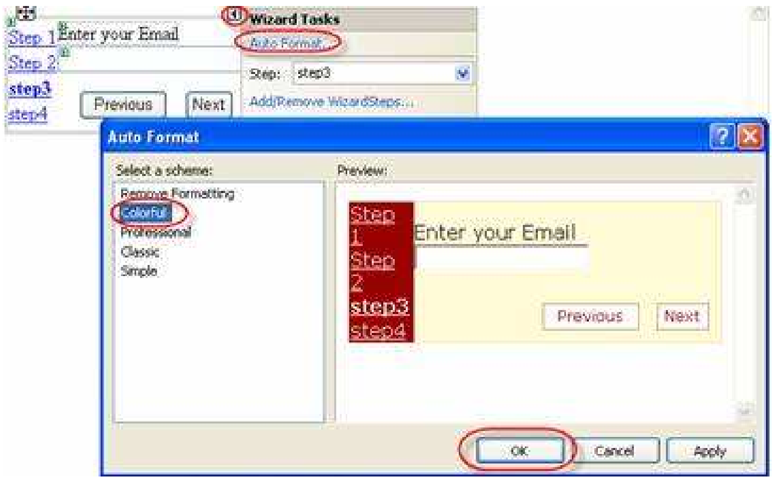
```
Partial Class Default3
    Inherits System.Web.UI.Page

    Protected Sub Wizard1_FinishButtonClick(ByVal sender As Object, ByVal e
        |
    End Sub
End Class
```

- Add this code:

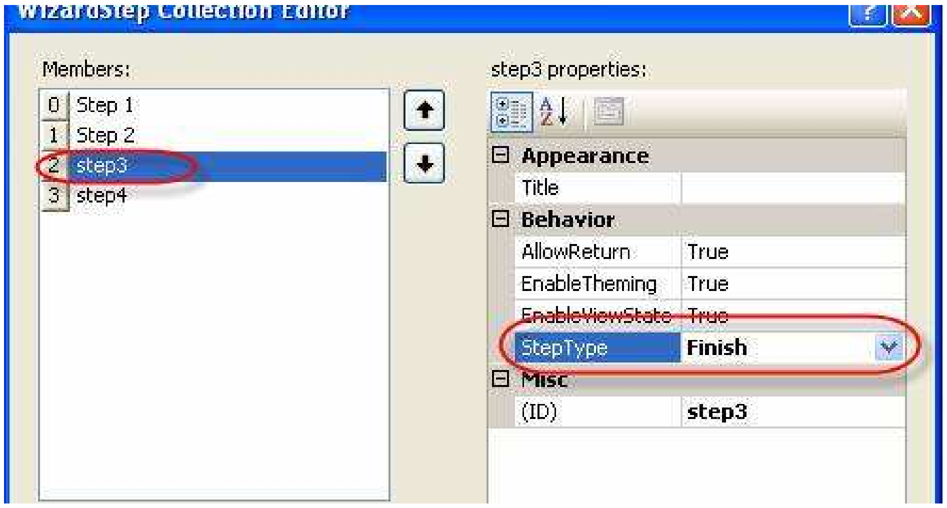
lblResultName.text=txtName.text
lblResultEmail.text=txtEmail.text

- Select the smart tab and click on autoformat
- Pick a format



To enhance the behavior:

- Select the smart tag
- Add/remove wizard steps
- Click step3
- Change the stepType to *Finish*


WizardStep Collection Editor

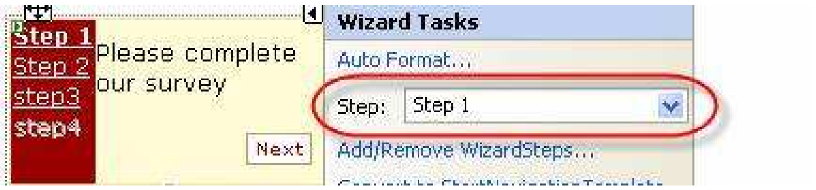
Members:

0	Step 1
1	Step 2
2	step3
3	step4

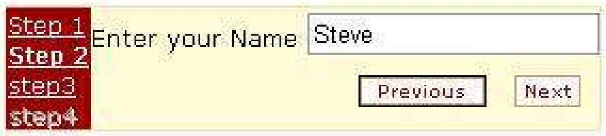
step3 properties:

Appearance	
Title	
Behavior	
AllowReturn	True
EnableTheming	True
EnableViewState	True
StepType	Finish
Misc	
(ID)	step3

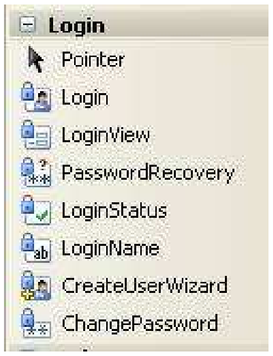
- Click Step 4
- Change the stepType to *Complete*
- Make sure step is set to *step1*



- Test it



Login Controls

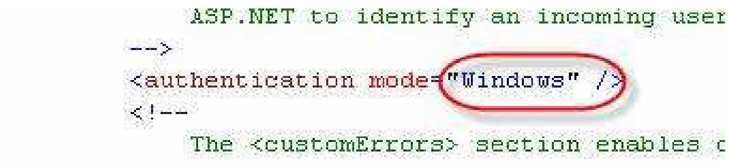


ASP.Net uses Membership to create users, authenticate users and change user settings by default
Login Controls:
Login Control – Login form
CreateUserWizard – user registration form
LoginStatus – login or logout link
Loginname – display username
ChangePassword – allows the user to change their password
PasswordRecovery – allow the user to retrieve their password
LoginView – Display content depending on logged in or out

Web.Config

Web applications are set up for Windows authentication by default

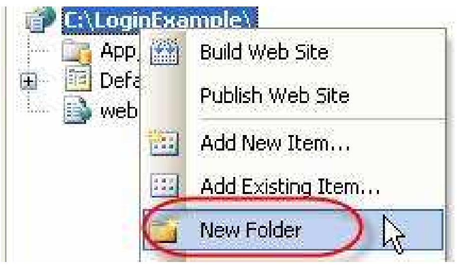
You must change it to forms authentication



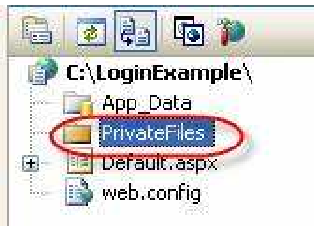
```
     ASP.NET to identify an incoming user
-->
<authentication mode="Windows" />
<!--
     The <customErrors> section enables c
```

Login Control

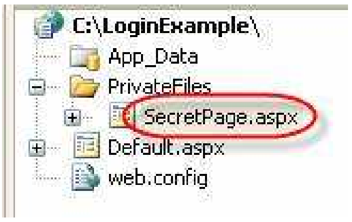
Create a new folder



Name it PrivateFiles



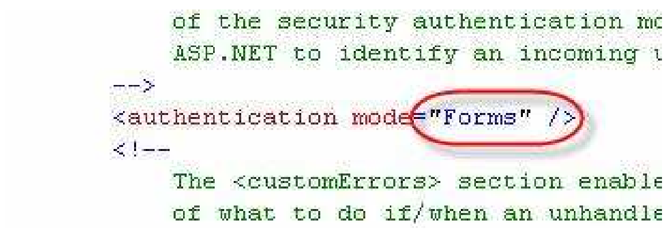
With the folder selected, add a new webform, name is secretpage.aspx



Write This is the secret page on this page

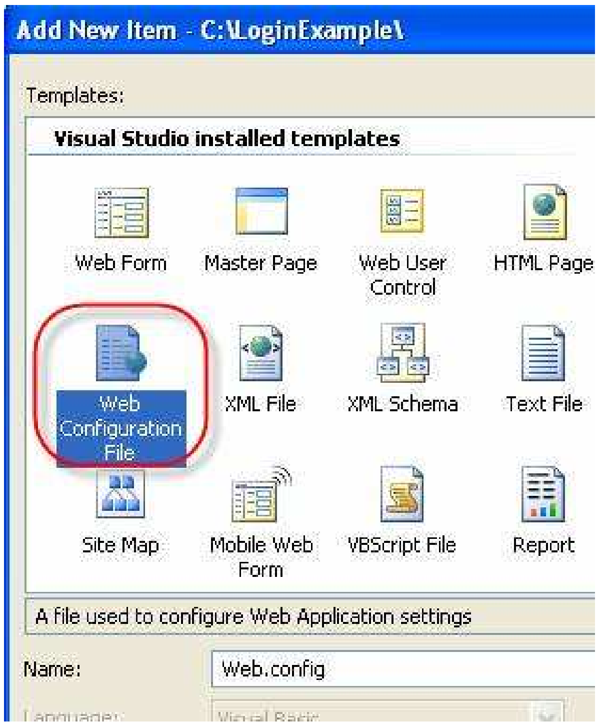
First we will password protect the page and all other page sin this folder

Make sure authentication Mode is set to forms in the web.config in the root folder



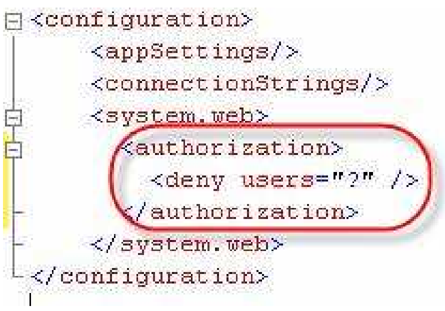
```
     of the security authentication mc
     ASP.NET to identify an incoming u
-->
<authentication mode="Forms" />
<!--
     The <customErrors> section enable
     of what to do if/when an unhandle
```

Add a web.config file to the folder



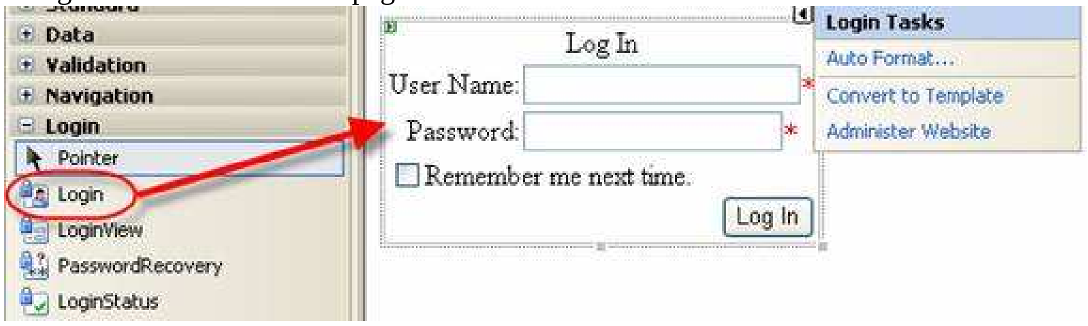
To restrict users from viewing the contents of a folder you must configure the authorization of the folder
Add the following code

```
<authorization>
  <deny users=”?” />
</authorization>
```

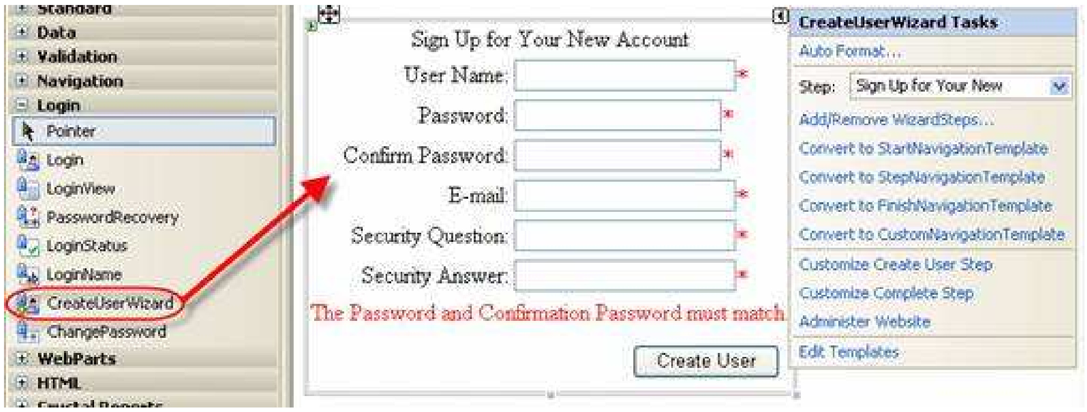


```
<configuration>
    <appSettings/>
    <connectionStrings/>
    <system.web>
      <authorization>
        <deny users="?" />
      </authorization>
    </system.web>
</configuration>
```

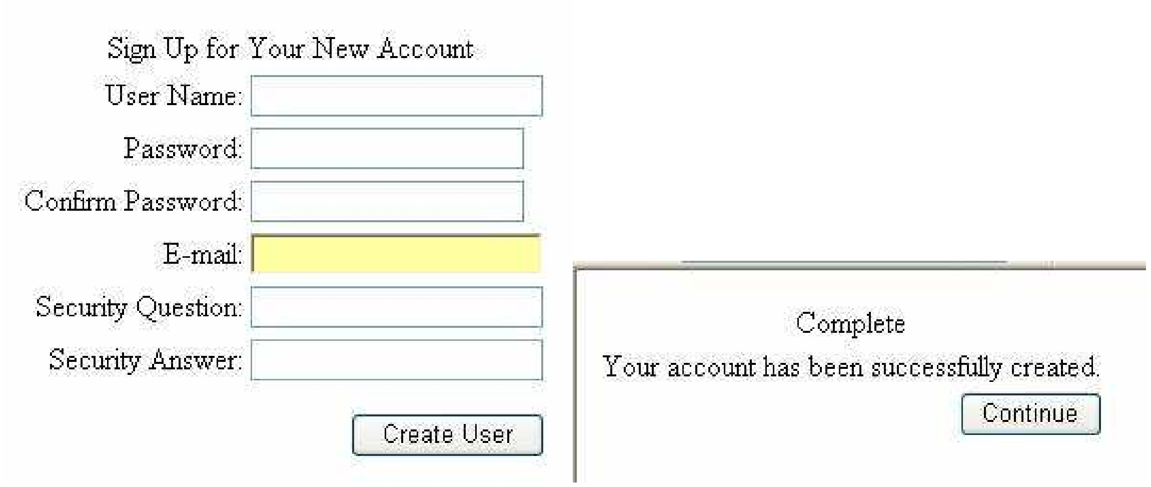
Now if you attempt to request any file in the PrivateFiles folder you will be redirected to login.aspx
Next you have to create the Login.aspx page
Add a login control and save the page



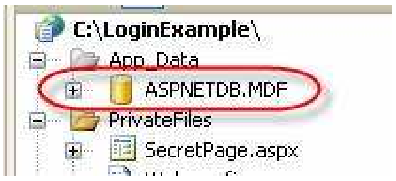
Create another page named CreateUser.aspx



Run this page and create a new user



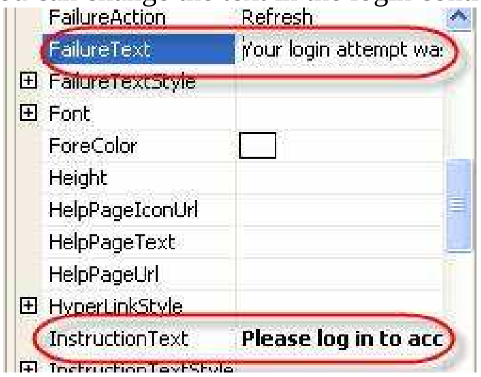
This automatically creates a SQL Server Express database and puts it in the App_Data folder



Now run the secretpage and it will redirect you to the login page. Enter your username and password and you will go back to the secret page.

Login Properties

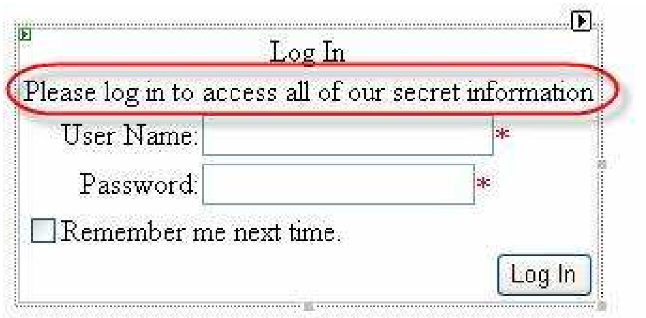
You can change the text in the login control



FailureAction	Refresh
FailureText	Your login attempt wa:
⊞ FailureTextStyle	
⊞ Font	
ForeColor	
Height	
HelpPageIconUrl	
HelpPageText	
HelpPageUrl	
⊞ HyperLinkStyle	
InstructionText	Please log in to acc

Failuretext is the text displayed when you login incorrectly

Instructiontext is the directions given to the user to login



Log In

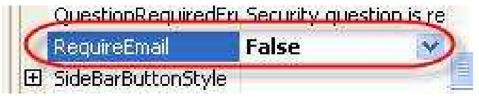
Please log in to access all of our secret information

User Name: *

Password: *

Remember me next time.

Modifying the CreateUserWizard control.You can set the CreateUserWizard control so it does not ask for an email by setting the RequireEmail to false



QuestionRequiredEr Security question is re

RequireEmail False

Site Navigation

Site Structure- logical categories of a website's pages

Create the site's structure
Then create the site's navigation

A Site's navigation is used to assist user to browse your site
ASP.Net navigation controls:

- Menu
- Treeview
- breadcrumbs

ASP.Net uses a *sitemap* to document the site's structure
A sitemap is an XML file
It defines the logical sections of the site
And may tie each section to a URL
After you have your sitemap you can use several ASP.Net controls to navigate the site

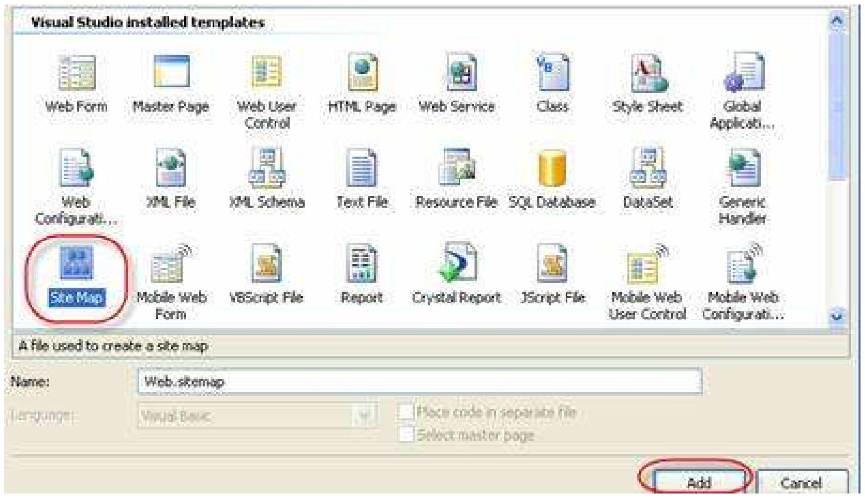
- SiteMapPath
  - Create a breadcrumb
    - A single line of text showing the user their location in the website structure
- TreeView
  - Provides a hierarchical view of the site's structure
  - Renders as an expandable/cdollapsible tree
- Menu
  - Menu items and subitems

Updating the sitemap immediately updates the navigational controls
Define the sitemap

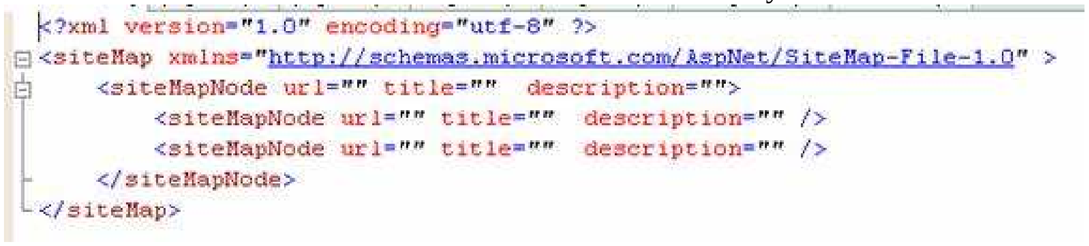
Try This in Visual Studio:

- Open Visual Studio
- Add a new webform
- Name it *navigate.aspx*
- Add 4 more aspx pages, name them *page1.aspx, page2.aspx,page3.aspx,page4.aspx*
- Add text to each page identifying it
- Add a new item

- Select sitemap, it should name it *web.sitemap*

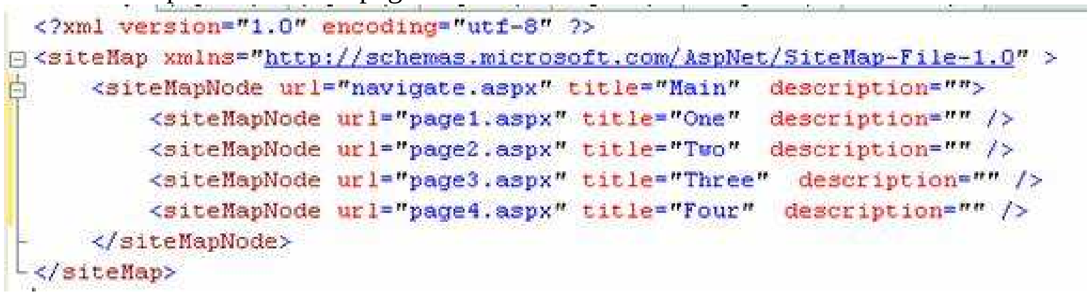


Put the sitemap in the root directory.
You need to edit this xml file manually



```
<?xml version="1.0" encoding="utf-8" ?>
<siteMap xmlns="http://schemas.microsoft.com/AspNet/SiteMap-File-1.0" >
    <siteMapNode url="" title=""  description="">
        <siteMapNode url="" title=""  description="" />
        <siteMapNode url="" title=""  description="" />
    </siteMapNode>
</siteMap>
```

It has a *sitemap* element
Inside are a couple siteMapNode elements
Each siteMapNode has a title, URL, and description attribute
Add a siteMapNode for each page

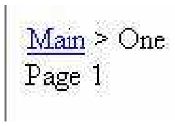


```
<?xml version="1.0" encoding="utf-8" ?>
<siteMap xmlns="http://schemas.microsoft.com/AspNet/SiteMap-File-1.0" >
    <siteMapNode url="navigate.aspx" title="Main"  description="">
        <siteMapNode url="page1.aspx" title="One"  description="" />
        <siteMapNode url="page2.aspx" title="Two"  description="" />
        <siteMapNode url="page3.aspx" title="Three"  description="" />
        <siteMapNode url="page4.aspx" title="Four"  description="" />
    </siteMapNode>
</siteMap>
```

Notice the navigate siteMapNode is surrounding the others
A sitemap can be set up in spite of which directories a page may be in
Using Breadcrumb Navigation
The siteMapPath control displays a breadcrumb
You can use it to show the user where they are in the site
It also allows the user to move back to higher levels
You must have a sitemap for this control

- Drag a siteMapPath control to page1.aspx
- Test it

It displays a breadcrumb showing where in the site the user is

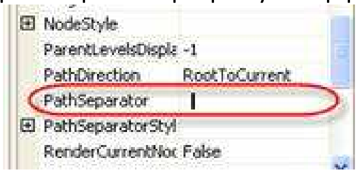


Main > One
Page 1

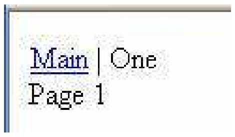
- Add a siteMapPath control to each page

Customize the appearance

- Change the path separator property to a pipe symbol



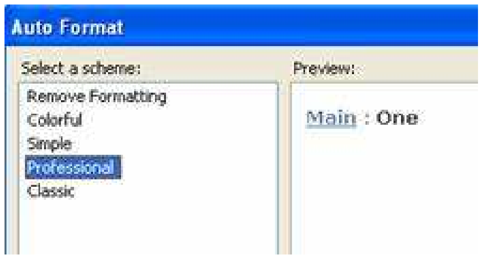
NodeStyle	
ParentLevelsDispl	-1
PathDirection	RootToCurrent
PathSeparator	|
PathSeparatorStyl	
RenderCurrentNoc	False

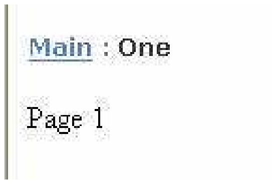


There are 3 types of nodes

- Root Node
  - Each siteMapPath has one root node
- Current Node
  - Each siteMapPath has one Current node
  - The current node matches the page the user is on
- General Nodes
  - Rest of the nodes

- Click the smart tag on the siteMapPath control
- Select auto Format
- Pick a different format





TreeView

TreeView allows the user to navigate through the entire site

A treeview control requires a siteMapDataSource control which allows the control to automatically get the data for navigation

Each node in the tree is rendered as a hyperlink to the particular page

- Add a SiteMapPathControl to the page
- Add a treeView control to the page
- Using the smart tag pick the SiteMapDataSource as the dataSource
- Test it

There are 4 types of nodes in a treeview

- Root Node
  - Each siteMapPath has one root node
- Selected Node
  - The current node matches the page the user is on
- Parent Nodes
  - A node that has children besides the root node
- Leaf Nodes
  - Nodes that have a parent but no children

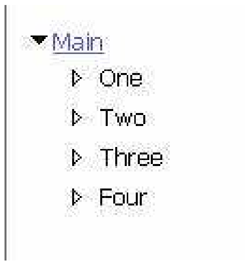
Customizing

Click the autoformat option in the smart tag of the treeView

There are also several property that you can attach a style sheet to

- nodeStyle
  - default style of all nodes in the treeView

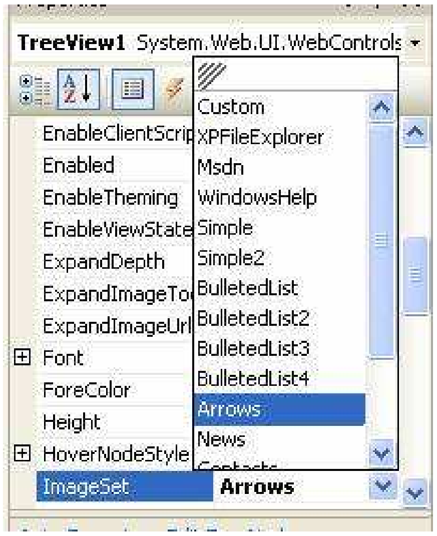
- HoverNodeStyle
  - o Style spplied when the user hovers his mouse over a certain node
- levelStyles
  - o allows you to apply style info for certain levels of the treeview



Other properties	
collapseImageToolTip	Tooltop shown to the user hovering over expand and collapse.You can use {0} in the property to use the nodes text
CollapseImageURL	Image URL for the collapse icon
ExpandImageURL	Image URL for the expand icon
NoExpandImageURL	Image URL for leaf icon
ImageSet	Package of images can be used to define treeView images
NodeIndent	Number of pixels to indent, 20 by default
NodeWrap	Boolean property. If node's text will wrap. Default is false
ShowExpandCollapse	Boolean. If expand and collapse icons are show, true by default
ShowLines	Boolean. If lines are drawn between each node

The imageSet has a list of packaged images to display next to icons

- Choices like:
  Custom
- XPFileExplorer
- Msdn
- Windowshelp
- Simple1 and 2
- Bulletedlist 1,2,3,4
- Arrows
- News
- contacts
- Inbox
- events
- faq



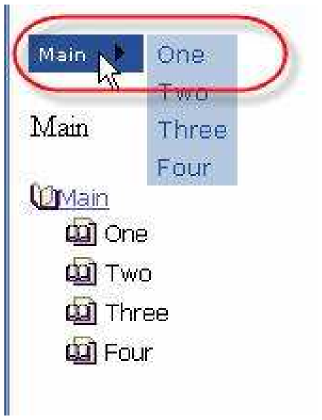
ImageSet Arrows

Each provide different images for expand, collapse, for nonLeaf nodes and images for nonexpendable and nonCollapsible leaf
You can provide your own images by setting it to custom and providing the URLs to the custom images in the CollapseImageURL, ExpandImageURL and noExpandImageURL properties

Menus

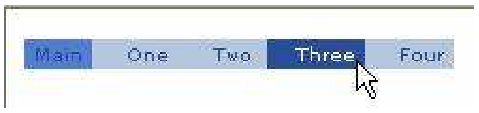
The menu will use the sitemap to display each item and it uses submenus for each item in a lower hierarchy

- Add a menu control
- Configure it to the siteMapDataAccess Control



The menu control has both static and dynamic parts
The static part is always shown
The dynamic part is shown when the user interacts with it
StaticDisplayLevels property can be used to control how many levels display

- Set the staticDisplayLevels to *2*
- Set the orientation to *horizontal*



DisappearAfter property controls how long the submenu appears after the mouse leaves it. The default is 500 for .5 seconds

Appearance of the Menus
The names of the properties start with either static or dynamic

Menu Control Properties	
DynamicEnableDefaultPopOutImage StaticEnableDefaultPopOutImage	If an image is displayed to show an item is a submenu. Default is true
DynamicItemFormatString StaticItemFormatString	Text of the menu Item. You can use {o} to include the menu item's sitemap value
DynamicPopOutImageTextFormatString StaticPopOutImageTextFormatString	Tooltip to display for the pop out. Can use {0}
DynamicPopOutImageURL Static PopOutImageURL	url of your image if you want to use an image instead of an arrow
StaticSubMenuIndent	Indentation between static menu item and its static submenu
Orientation	Vertical or horizontal
DynamicHorizontalOffset DynamicVerticalOffset	Offset in pixelsbetween the right border of a menu and the left border of its submenu item
ItemWrap	If text in a menu item should be wrapped. Default is false

Classes

Classes let you reuse application logic on multiple pages or even multiple applications.
If you need to write the same method more than once it should be in a class.

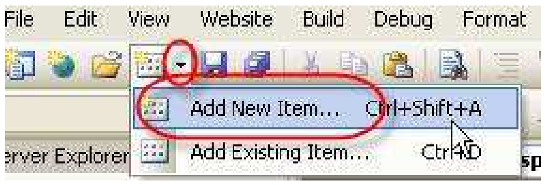
Access Modifiers

Used when declaring a class, method or property
Access modifiers determine who can have access to what in your classes

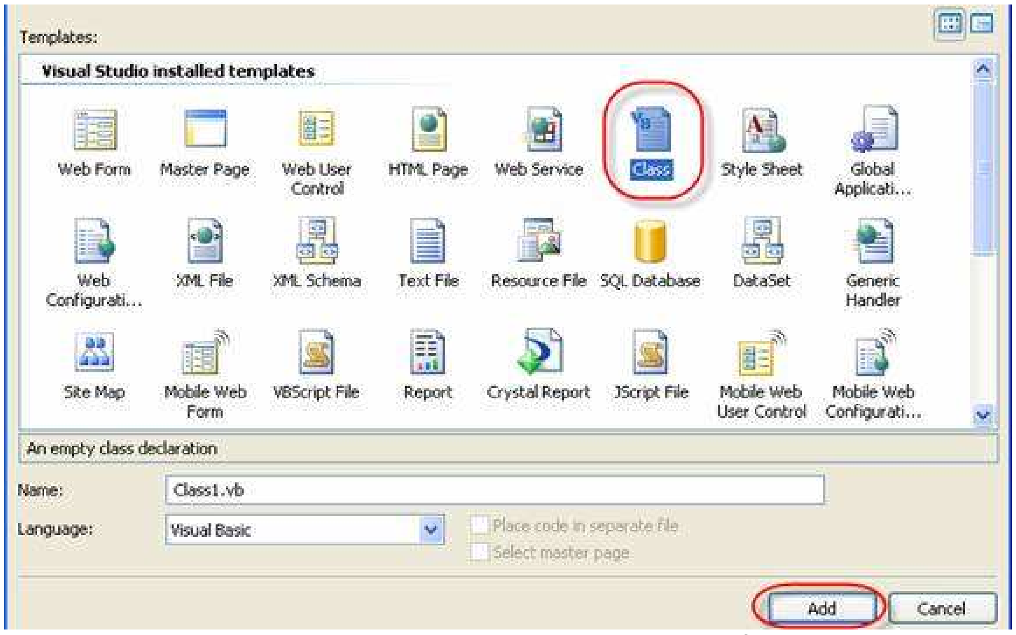
- Public
  - No restrictions, everyone has access
- Private
  - Can only be accessed from within THIS class
- Protected
  - Can be accessed from only THIS class or a derived class
- Friend
  - Can be accessed only from a class within the same assembly (.DLL). In ASP.Net this would be everything in the same subdirectory.
- Protected Friend
  - Can be accessed from the class, a derived class or another other class in the same assembly

Let's build a basic example:

- Add a new item



- Select Class



An empty class declaration

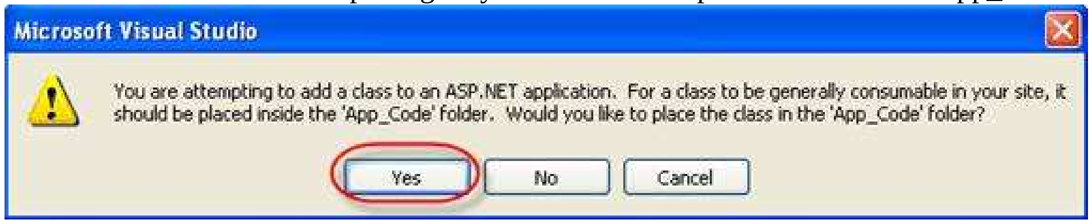
Name: Class1.vb

Language: Visual Basic

Place code in separate file

Select master page

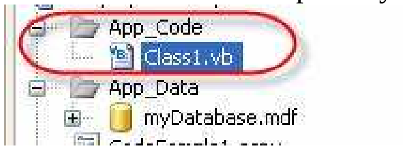
Visual Studio recommend putting all your classes in a special folder called App_Code



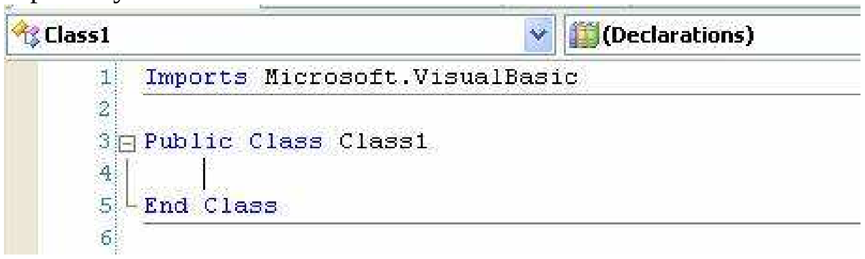
You are attempting to add a class to an ASP.NET application. For a class to be generally consumable in your site, it should be placed inside the 'App_Code' folder. Would you like to place the class in the 'App_Code' folder?

- Click on Yes when it asks you to put your class in that folder

It creates the folder and places your file in it



It places you in the code:



```
Imports Microsoft.VisualBasic

Public Class Class1

End Class
```

Add the following code:

```
 Public Function Display() As String
     Return "Hello World"
 End Function
```

- Save it
- Now we need to make a web page to display this string
- Add a new webform
- Add a label, name it *lblDisplay*
- Double-click it
- Add the following code in the Page_load event:

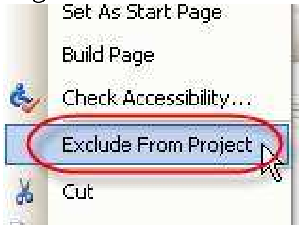
(If webform is not available to add you may have to click the project name in the solutions explorer first)

```
Dim objMyDisplay As New Class1
lblDisplay.Text = objMyDisplay.Display()
```

- Class1 has to be the same as your class filename
- Display() is the name of the function in the class

App_Code

You can add subdirectories in the app_code folder
If you have an error in one of these files and you want to come back to it later you must temporarily hide it or the rest of your site will not work properly.
Right-click on it and select Exclude from project



You can write classes in Visual Basic or C# in the same website.
Each class file has to be in the same language
You must place classes written in a different language in their own subdirectory
You cannot mix different languages in the same folder because they get compiled together.
You also need to modify the web.config file to specify you are using subdirectories.

```
<configuration>
  <system.web>
    <compilation>
    <codeSubDirectories>
      <add directoryName=”VBDirectory” />
      <add directoryName=”CSDirectory” />
    </codeSubDirectories>
    </compilation>
  </system.web>
</configuration>
```

This way two assemblies (DLL files) are created. One for C# and the other for Visual Basic. You can call from both of these classes in the same webpage.

Methods

Methods can be subroutines or functions

- Functions return a value
- Subroutines do not return a value

Shared/Static Methods

A shared method is called directly and does not have to be instantiated.
Visual Basic and C# both have these methods but call them by a different name

- Shared - Visual Basic
- Static - C#

Many of the classes in the .Net Framework have shared methods. That is why they can be called without instantiating them first.
We will use the same example we did earlier but this time make it a shared method
Change the code in your class file:

```
Public Shared Function Display() As String
    Return "Hello World"
 End Function
```

Change the code in your webform by erasing the following line:

```
Dim objMyDisplay As New Class1
```

You only need this line:

```
lblDisplay.Text = objMyDisplay.Display()
```

Fields

You can declare a field with the Public access modifier so it can be accessed from outside the class.

- Add a new class
- Name it *FieldExample.vb*
- Add the following code:

```
 Public StrVar as String
Public Function Display() As String
    Return "Hello World"
 End Function
```

- Add a webform
- Add a label, name it lblDisplay
- Double-click the form and add this code to the page_load event

```
Dim objFieldEx as new FieldExample
objFieldEx.strvar=”Hello World”
lblDisplay.text=objFieldEx.Display()
```

Properties

Properties give you a way to set or retrieve a variable from a class and apply validation to it. With properties you make the variable private so it can only be access from within the class Then the property is made public so it can be accessed. The property does the retrieving (GET) and modifying (SET). This way error checking can be added.
You can leave out the SET and it becomes a readOnly property
It is customary to begin a provate member of a class with an underscore (_)

- Add a new class
- Call it *propertyEx.vb*
- Add

Imports System

- To line 1
- Add the following code in the class

```
Private _strVar as string
Public Property Display() as String
  Get
    Return _strVar
  End Get
  Set (ByVal Value as String)
    If Value.Length > 10 then
      Throw new exception("Example error")
    End if
     _strvar=Value
   End Set

  Public Function Display() As String
    Return _strVar
  End Function
```

- Add a webform
- Add a label named lblDisplay
- Add this code to the page_load

```
 Dim objPropertyVar as new PropertyEx
objPropertyVar.strVar="Hello"
lblDisplay.text= objPropertyVar.Display()
```

Overloading Methods

Overloading is when you have two methods with the same name in a class. The methods have different signatures. Signature are the order and type of parameters the method accepts.
Example

```
Public class OverloadExample
Public Sub Example(ByVal name as String)
        ' do something
End Sub
Public Sub Example(ByVal Name as String, ByVal age as integer)
        'do something
End Sub
End Class
```

You can call the Example subroutine by passing a String or a String and an Integer

Partial Classes
You can define a class that spans two or more files
Include *Partial* in the class declaration
Code-behind pages in ASP.net use partial classes
Example:

```
Partial Public Class Parts
  Public StrVar as String
End Class
Partial Public Class Parts
   Public Function Display() As String
      Return "Hello World"
   End Function
End Class
```

Inheritance

One class can inherit from another class
When it does it includes all the non-private methods and properties of the parent class.
.Net uses inheritance extensively
All classes derive from the System.Object class
ASP.Net classes derive from System.Web.UI.Page class

Example:

```
Public Class FirstClass
    Private _price As Decimal
    Public Property Price() As Decimal
        Get
            Return _price
        End Get
        Set(ByVal value As Decimal)
            _price = value
        End Set
    End Property
End Class

Public Class secondClass
    Inherits FirstClass
    Private _tax As Decimal
    Public Property Tax() As Decimal
        Get
            Return Tax
        End Get
        Set(ByVal value As Decimal)
            _tax = value * Price()
        End Set
    End Property
End Class
```

The second class inheritas from the firstclass and is able to retrieve the price from the first class

Overriding Classes

You can overrise a method or proerty when inheriting a class.

The class that is inherited from is called the base class.

Example:
```
Public Class FirstClass
    Private _price As Decimal
    Public Overridable Property Price() As Decimal
        Get
            Return _price
        End Get
        Set(ByVal value As Decimal)
            _price = value
        End Set
    End Property
End Class
Public Class secondClass
    Inherits FirstClass
    Public Overrides Property Price() As Decimal
        Get
            Return MyBase.Price * 0.78
        End Get
        Set(ByVal value As Decimal)
            MyBase.Price = value
        End Set
    End Property
End Class
```

MyBase.Price refers to the base class's Property

Abstract Classes

You can use MustInherit to create an abstract class that must be inherited. An abstract class cannot be instantiates by itself.
Example:
```
Public MustInherit Class FirstClass
    Private _price As Decimal
    Public MustOverride ReadOnly Property Price() As Decimal
End Class

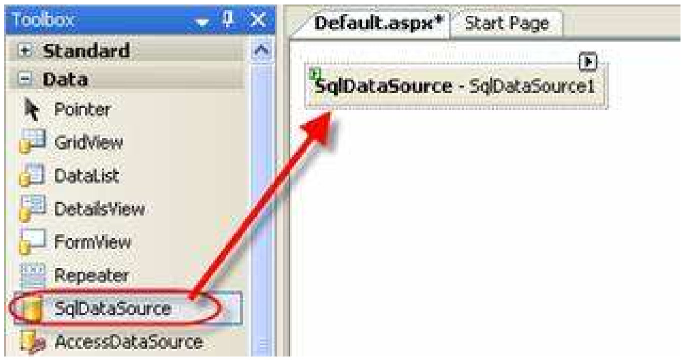
Public Class secondClass
    Inherits FirstClass
    Public Overrides ReadOnly Property Price() As Decimal
        Get
            Return 20.00
        End Get
    End Property
End Class
```

This example create an abstract class called firstClass that must be overridden
The second class overrides it

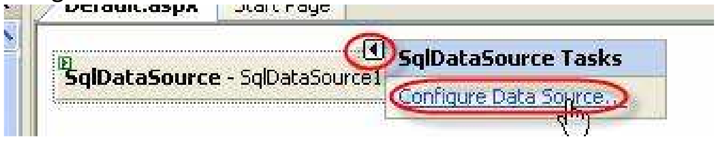
SQLDataSource Control

The SQL Server Data Source Control gives you the ability to quickly and easily use a SQL Server database in a website.
The control is build for working with SQL Server 7 or newer. You can use it for the following databases:
Microsoft SQL Server
Microsoft SQL Server Express
Microsoft Access
Oracle
DB2
MySQL
Most other databases
If you want to use a database other than SQL Server you have to reconfigure the control
It is a non-visual control. You use it with other controls.
Important parts of the SQLDataSource Control

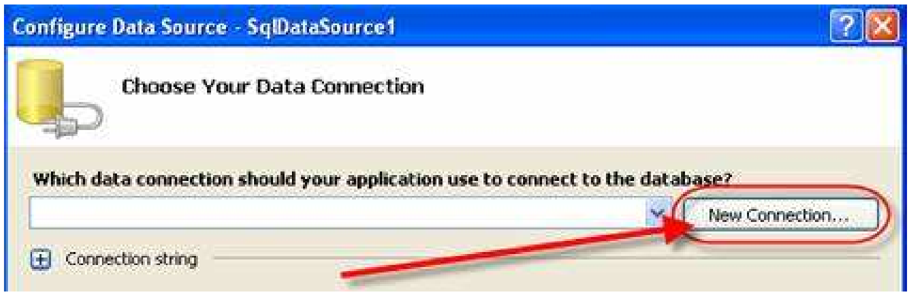
- Id
    - name of the control
- SelectCommand
    - Select statement to use to connect to the database
- ConnectionString
    - Source of the database
- Drag a SQLDataSource control to a webform



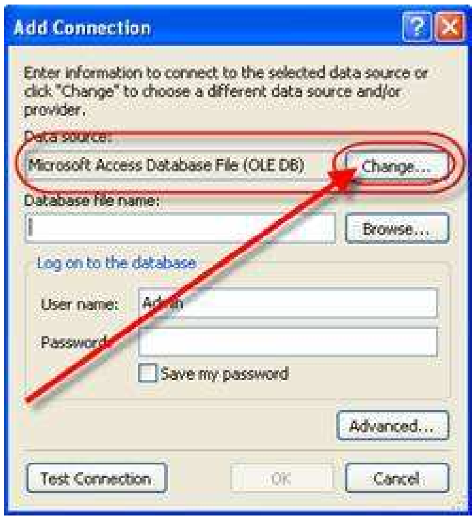
- Click the SmartTag



- Select Configure Data Source
- Click New Connection


Configure Data Source - SqlDataSource1
Choose Your Data Connection
Which data connection should your application use to connect to the database?
New Connection...
Connection string

If you want another dataProvider click on *change*



Add Connection

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

Data source: Microsoft Access Database File (OLE DB)

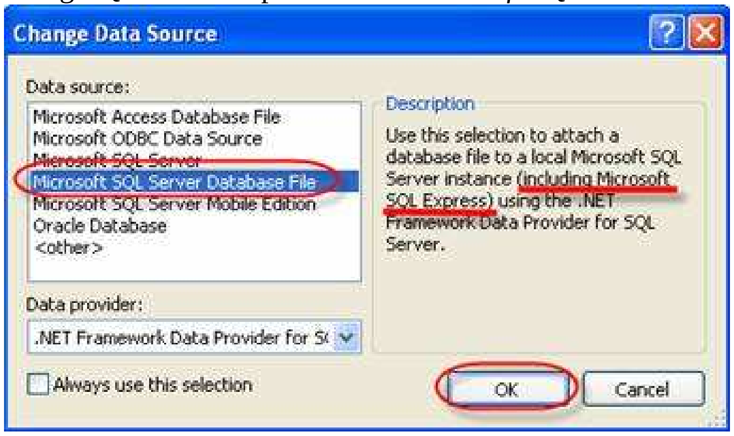
Database file name:

Log on to the database

User name: Admin

Password:

If you are using SQL Server express select *Microsoft SQL Server Database File*



Change Data Source

Data source:
Microsoft Access Database File
Microsoft ODBC Data Source
Microsoft SQL Server
Microsoft SQL Server Database File
Microsoft SQL Server Mobile Edition
Oracle Database
<other>

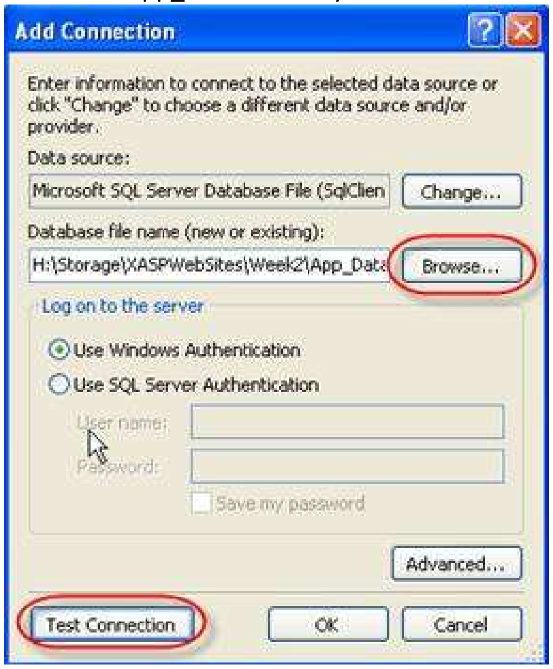
Description

Use this selection to attach a database file to a local Microsoft SQL Server instance (including Microsoft SQL Express) using the .NET Framework Data Provider for SQL Server.

Data provider: .NET Framework Data Provider for S(

You can connect to other databases besides SQL Server
You can select Oracle, Access or ODBC for other databases.

- Click Browse and select the SQL Server Express file
  - It will be located in the App_Data directory



Add Connection

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 Database File (SqlClien

Database file name (new or existing): H:\Storage\XASPWebSites\Week2\App_Data

Log on to the server

Use Windows Authentication [✓]

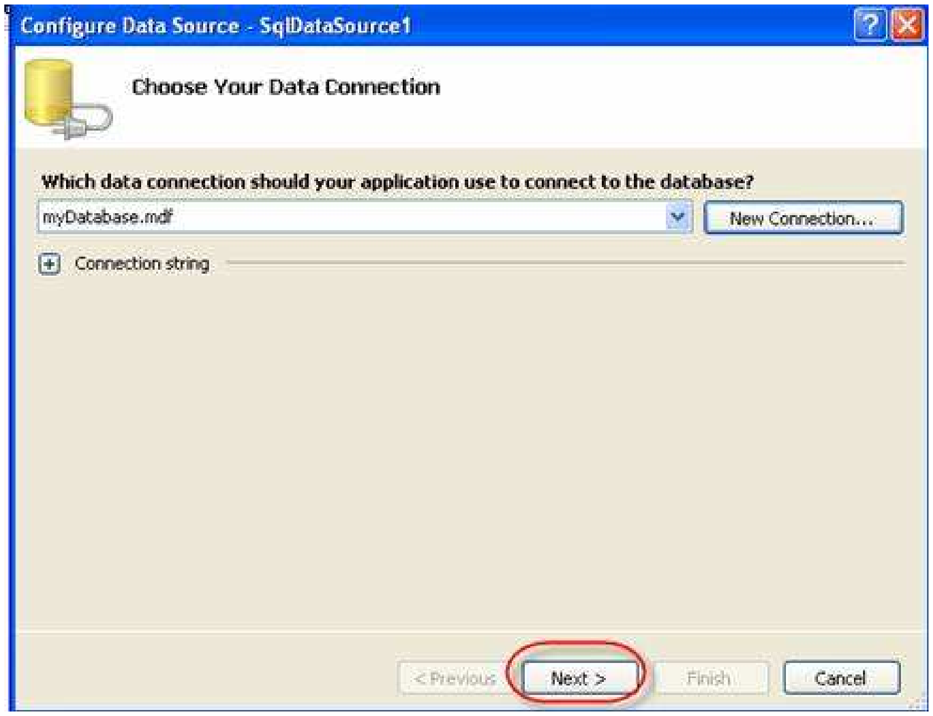
Use SQL Server Authentication

User name:

Password:

- Click *Test Connection* to check it

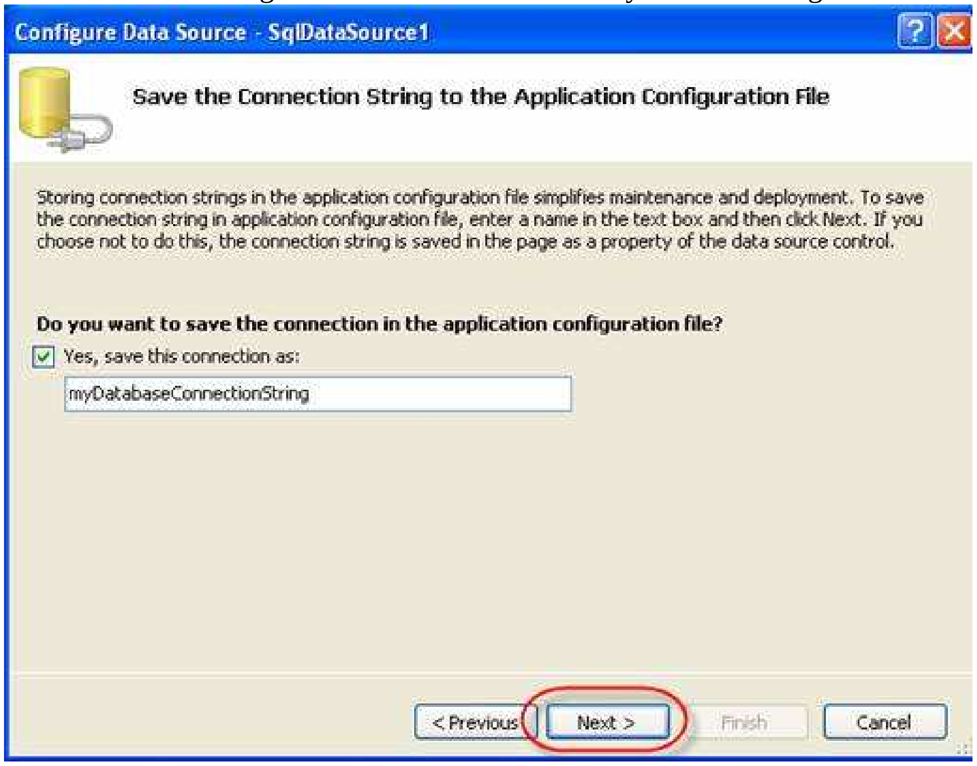
- Click *OK*
- Click *Next*


Configure Data Source - SqlDataSource1
Choose Your Data Connection
New Connection...
Connection string
< Previous
Next >
Finish
Cancel

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

myDatabase.mdf

Click Next again to save the connection in your web.config file


Configure Data Source - SqlDataSource1
Save the Connection String to the Application Configuration File
< Previous
Next >
Finish
Cancel

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.

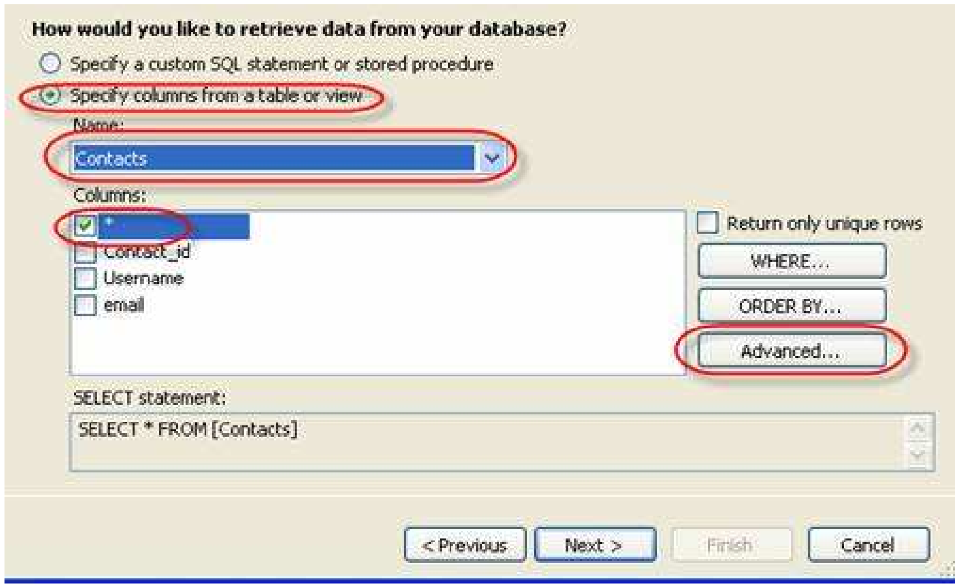
Do you want to save the connection in the application configuration file?

☑ Yes, save this connection as:

myDatabaseConnectionString

Storing connection strings in the web.config is more secure than storing them on each of your web pages. By storing your data in the web.config you can easily change it for all pages at once and allow connection pooling for better performance.

- Select Specify columns from a table or view
- Select your table
- Click * to select all columns
- Click the Advanced button


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: Contacts

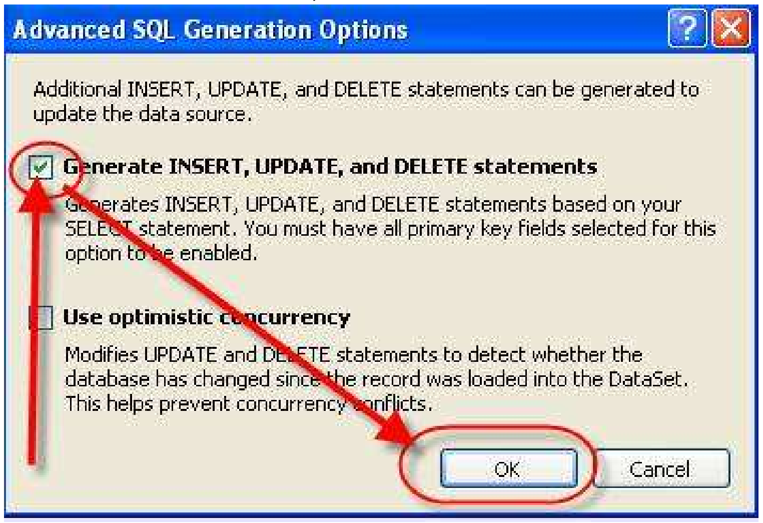
Columns: [✓ *] Contact_id, Username, email

Return only unique rows

SELECT statement:

SELECT * FROM [Contacts]

- Click the checkbox to Generate INSERT, UPDATE and DELETE statements


Advanced SQL Generation Options

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

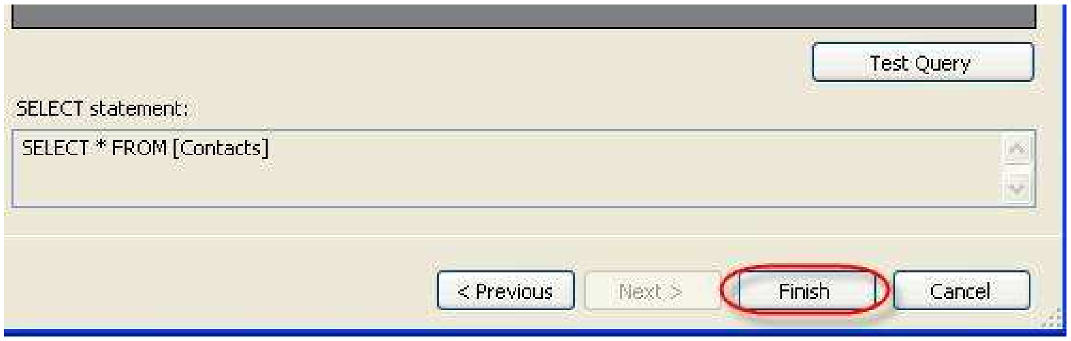
[✓ Generate INSERT, UPDATE, and DELETE statements]

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.

- Click OK
- Click Next
- Click Finish

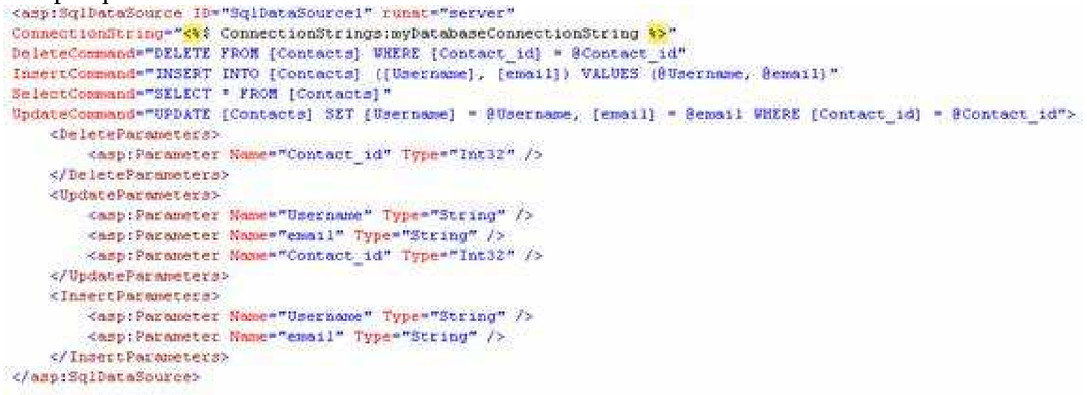

SELECT statement:

SELECT * FROM [Contacts]

Here is the code it generated:

```
<asp:SqlDataSource ID="SqlDataSource1" runat="server"
ConnectionString="<%$ ConnectionStrings:myDatabaseConnectionString %>"
DeleteCommand="DELETE FROM [Contacts] WHERE [Contact_id] = @Contact_id"
InsertCommand="INSERT INTO [Contacts] ([Username], [email]) VALUES (@Username,
@email)"
SelectCommand="SELECT * FROM [Contacts]"
```

```
UpdateCommand="UPDATE [Contacts] SET [Username] = @Username, [email] = @email
WHERE [Contact_id] = @Contact_id">
        <DeleteParameters>
            <asp:Parameter Name="Contact_id" Type="Int32" />
        </DeleteParameters>
        <UpdateParameters>
            <asp:Parameter Name="Username" Type="String" />
            <asp:Parameter Name="email" Type="String" />
            <asp:Parameter Name="Contact_id" Type="Int32" />
        </UpdateParameters>
        <InsertParameters>
            <asp:Parameter Name="Username" Type="String" />
            <asp:Parameter Name="email" Type="String" />
        </InsertParameters>
</asp:SqlDataSource>
```



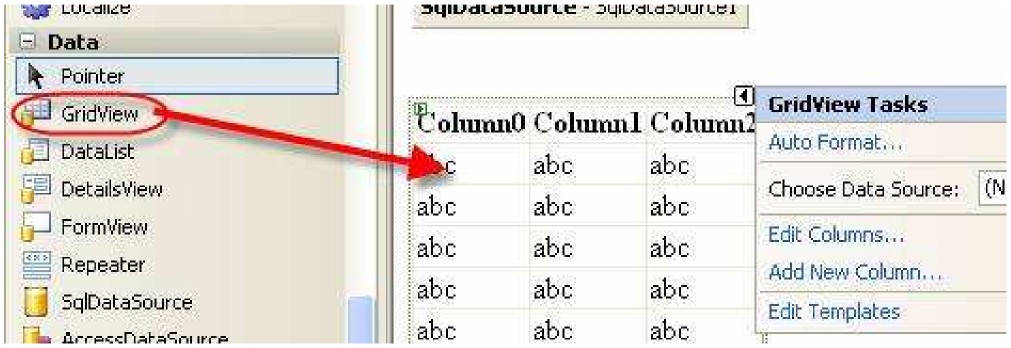
```
<asp:SqlDataSource ID="SqlDataSource1" runat="server"
ConnectionString="<%$ ConnectionStrings:myDatabaseConnectionString %>"
DeleteCommand="DELETE FROM [Contacts] WHERE [Contact_id] = @Contact_id"
InsertCommand="INSERT INTO [Contacts] ([Username], [email]) VALUES (@Username, @email)"
SelectCommand="SELECT * FROM [Contacts]"
UpdateCommand="UPDATE [Contacts] SET [Username] = @Username, [email] = @email WHERE [Contact_id] = @Contact_id">
    <DeleteParameters>
        <asp:Parameter Name="Contact_id" Type="Int32" />
    </DeleteParameters>
    <UpdateParameters>
        <asp:Parameter Name="Username" Type="String" />
        <asp:Parameter Name="email" Type="String" />
        <asp:Parameter Name="Contact_id" Type="Int32" />
    </UpdateParameters>
    <InsertParameters>
        <asp:Parameter Name="Username" Type="String" />
        <asp:Parameter Name="email" Type="String" />
    </InsertParameters>
</asp:SqlDataSource>
```

Here is the code in the web.config:

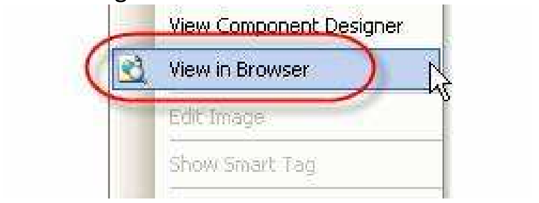
```
  <connectionStrings>
    <add name="myDatabaseConnectionString"
       connectionString="Data
Source=.\SQLEXPRESS;AttachDbFilename=E:\Storage\XASPWebSites\Week2\App_Data\myD
atabase.mdf;Integrated Security=True;Connect Timeout=30;User Instance=True"
      providerName="System.Data.SqlClient" />
  </connectionStrings>
```

You can modify it so the attachDbFilename is relative instead of an absolute one
I changed
AttachDbFilename=E:\Storage\XASPWebSites\Week2\App_Data\myDatabase.mdf
To
AttachDbFilename=|DataDirectory|\myDatabase.mdf
This will automatically look in the App_Data directory
ConnectionString="<%$ ConnectionStrings:myDatabaseConnectionString %>"
Is the expression in the sqldatasource control that represents the string in the web.config

- Add a gridView by dragging it to the webform



- Select your SQLDataSource control from the dropdown list under Choose Data Source
- Right click on the webform and select View in Browser



Database Commands

The SQLDataSource control can represent four types of SQL commands

1. SelectCommand
2. InsertCommand
3. UpdateCommand
4. DeleteCommand

Here are the commands automatically created:
DeleteCommand="DELETE FROM [Contacts] WHERE [Contact_id] = @Contact_id"
InsertCommand="INSERT INTO [Contacts] ([Username], [email]) VALUES (@Username, @email)"
SelectCommand="SELECT * FROM [Contacts]"
UpdateCommand="UPDATE [Contacts] SET [Username] = @Username, [email] = @email WHERE [Contact_id] = @Contact_id">
You can modify these if you like

Parameters

SQLDataSource supports the following parameter objects

ControlParameter	Represents the value of a control or the value of a page property
CookieParameter	Value of a browser cookie
FormParameter	Value of an HTML form field
ProfileParameter	Value of a profile property
QuerystringParameter	Value of a querystring field
SessionParameter	Value of an item stored in a session

SQLDataSource control can have five collections of parameters

- SelectParameters
- InsertParameters
- DeleteParameters
- UpdateParameters
- Filterparameters

Look at the code from our example:
<asp:SqlDataSource ID="SqlDataSource1" runat="server"
ConnectionString="<%$ ConnectionStrings:myDatabaseConnectionString %>"

```
DeleteCommand="DELETE FROM [Contacts] WHERE [Contact_id] = @Contact_id"
InsertCommand="INSERT INTO [Contacts] ([Username], [email]) VALUES (@Username,
@email)"
SelectCommand="SELECT * FROM [Contacts]"
UpdateCommand="UPDATE [Contacts] SET [Username] = @Username, [email] = @email
WHERE [Contact_id] = @Contact_id">
        <DeleteParameters>
            <asp:Parameter Name="Contact_id" Type="Int32" />
        </DeleteParameters>
        <UpdateParameters>
            <asp:Parameter Name="Username" Type="String" />
            <asp:Parameter Name="email" Type="String" />
            <asp:Parameter Name="Contact_id" Type="Int32" />
        </UpdateParameters>
        <InsertParameters>
            <asp:Parameter Name="Username" Type="String" />
            <asp:Parameter Name="email" Type="String" />
        </InsertParameters>
</asp:SqlDataSource>
```

After the SQL commands there are DeleteParameters, UpdateParameters and InsertParameters tags

These allow the user to enter dynamic data into the SQL statements
Look at the Delete statement:

```
DeleteCommand="DELETE FROM [Contacts] WHERE [Contact_id] = @Contact_id"
```

@Contact_id is a parameter

```
<DeleteParameters>
  <asp:Parameter Name="Contact_id" Type="Int32" />
</DeleteParameters>
```

Creates a parameter of type Int32 named Contact_id that is used in the delete statement

Update Statement:

```
UpdateCommand="UPDATE [Contacts] SET [Username] = @Username, [email] = @email
WHERE [Contact_id] = @Contact_id">
```

Update Parameter:

```
<UpdateParameters>
  <asp:Parameter Name="Username" Type="String" />
  <asp:Parameter Name="email" Type="String" />
  <asp:Parameter Name="Contact_id" Type="Int32" />
</UpdateParameters>
```

Notice a parameter for each one in the SQL statement

Insert statement:

```
InsertCommand="INSERT INTO [Contacts] ([Username], [email]) VALUES (@Username,
@email)"
```

Insert Parameter:

```
<InsertParameters>
  <asp:Parameter Name="Username" Type="String" />
  <asp:Parameter Name="email" Type="String" />
</InsertParameters>
```

Notice that Contact_id is not listed as a parameter. That is because it is set to auto increment. It would give you an error if you tried to add to this column.

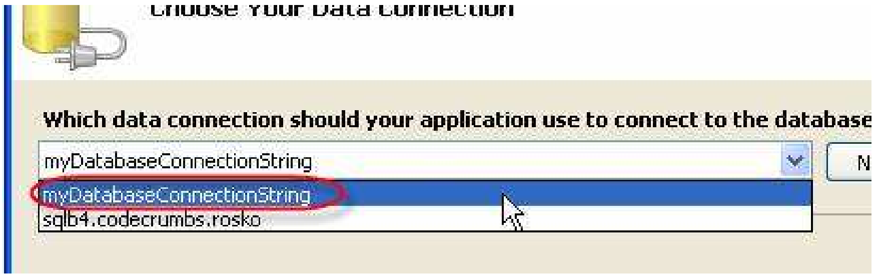
ControlParameter

The controlParameter object allows you to retrieve a value from another control. The other control has to be on the same page as the SQLDataSource control.
It includes two additional properties:
ControlID - control to retrieve data from
PropertyName - name of the property in the control to retrieve from

Using the ControlParameter

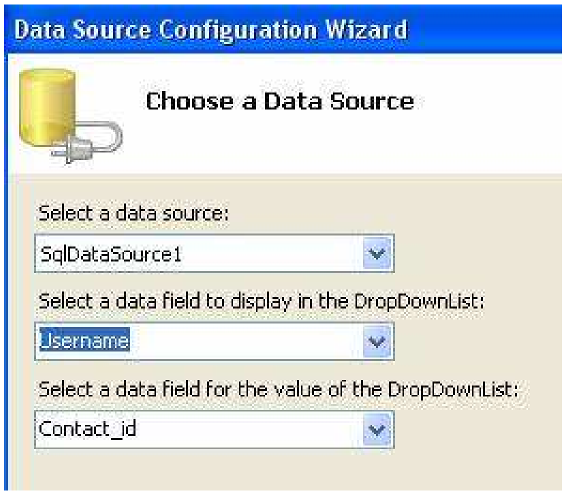
- Add another webform
- Drag a SQLDataSource control to the page and set it to your database

You can select the connectionstring you created earlier to quickly connect to your database. Select all columns and generate insert,update and delete.



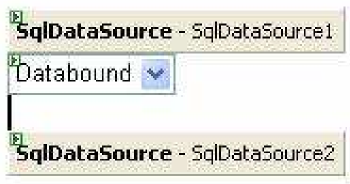
Which data connection should your application use to connect to the database
myDatabaseConnectionString
myDatabaseConnectionString
sqlb4.codecrumbs.rosko

- Add a dropDownList control and set autoPostback to true
- Click the smarttag and confige the data source

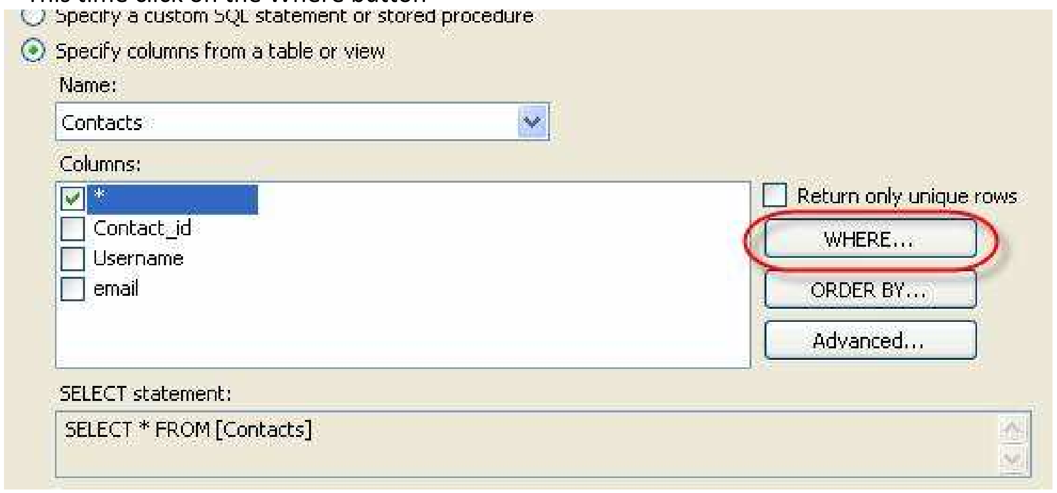


Select a data source: SqlDataSource1
Select a data field to display in the DropDownList: Username
Select a data field for the value of the DropDownList: Contact_id

- Select your SQLDataSource control for the data source
- Select Username column to display and Contact_id as the value
- Add another SQLDataSource control

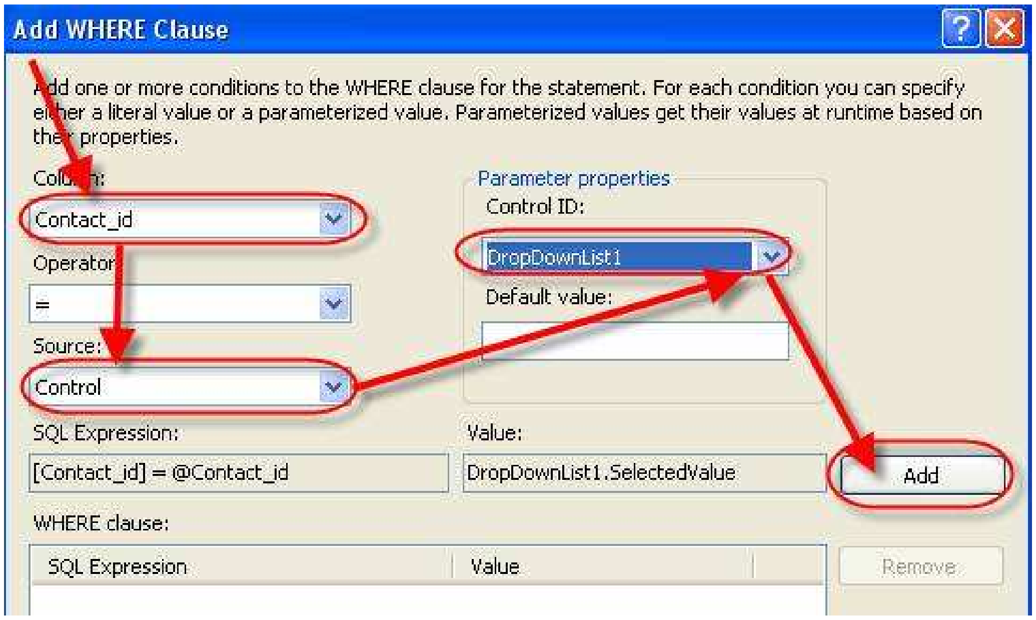

SqlDataSource - SqlDataSource1
Databound
SqlDataSource - SqlDataSource2

- Configure your data source by selecting the connection string and Select all columns.
- This time click on the Where button



SELECT * FROM [Contacts]

- Select Contact_id as the column
- Select Control as the source
- Select your dropDownList as your controlID
- Then click on Add

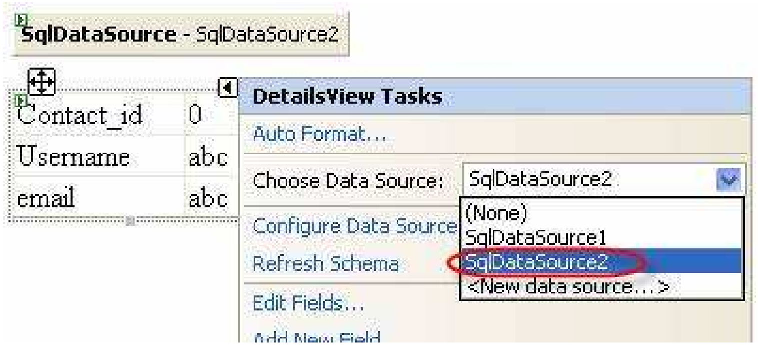


Add one or more conditions to the WHERE clause for the statement. For each condition you can specify either a literal value or a parameterized value. Parameterized values get their values at runtime based on their properties.

SQL Expression: [Contact_id] = @Contact_id

Value: DropDownList1.SelectedValue

- Click Next
- Click Finish
- Add a detailsView control and set the data source to the second SQLDataSource control



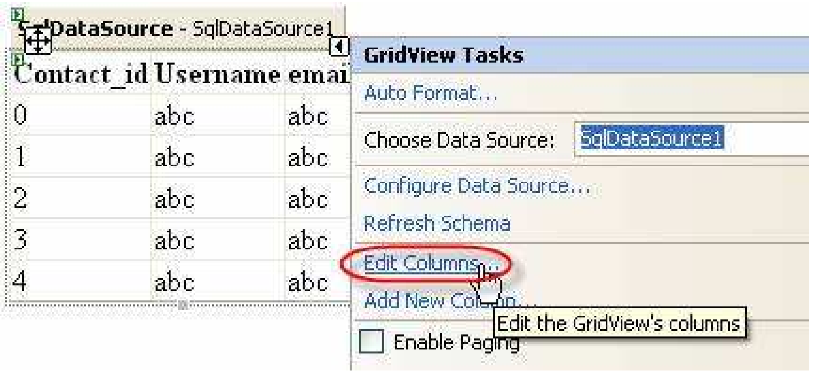
- Run it, now when you change the dropdownlist your detailsView data will change

Here is the code:
<asp:SqlDataSource ID="SqlDataSource2" runat="server" ConnectionString="<%$ ConnectionStrings:myDatabaseConnectionString %>"
SelectCommand="SELECT * FROM [Contacts] WHERE ([Contact_id] = @Contact_id)" >
<SelectParameters>
<asp:ControlParameter ControlID="DropDownList1" Name="Contact_id" PropertyName="SelectedValue" Type="Int32" />
</SelectParameters></asp:SqlDataSource>

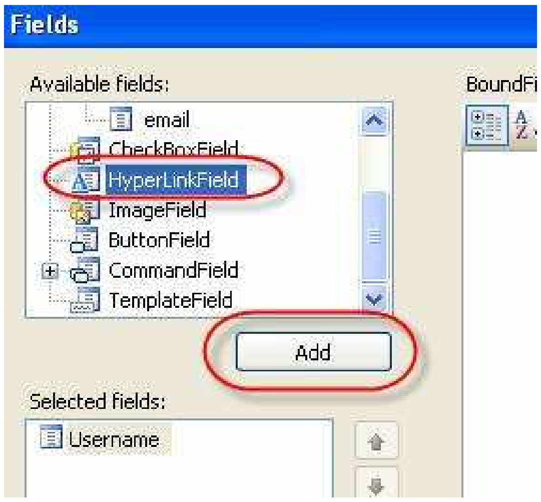
QueryStringParameter Object

Querystrings are often used when you want to create Master/Detail pages. A hyperlink on a Master page is used to take the user to a more detailed page.
Using the QuerystringParameter Object to create Master/Detail pages

- Add a new webform
- Add a SQLDataSource control and configure it to your database.
- Add a gridView and configure it to your SqlDataSource control
- On the gridView click on Edit Columns

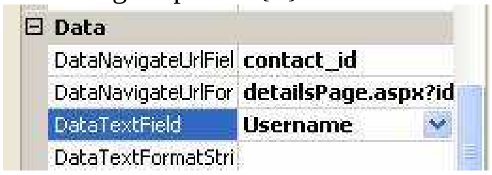


- Select the email column and click the delete button
- Do the same for the contact_id column and the username column
- Click on the hyperlink field and click add



- Click on the dataTextField and select username
- Click on dataNavigateURLField and select contact_id
- Add this line to the dataNavigateURLFormatString:

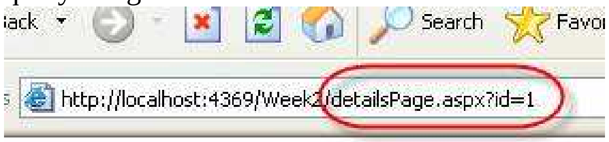
detailsPage.aspx?id={0}



Data	
DataNavigateUrlFiel	contact_id
DataNavigateUrlFor	detailsPage.aspx?id
DataTextField	Username
DataTextFormatStri	

- test it

Now if you clicked on one of the hyperlinks it would send you to details.aspx and also send a querystring



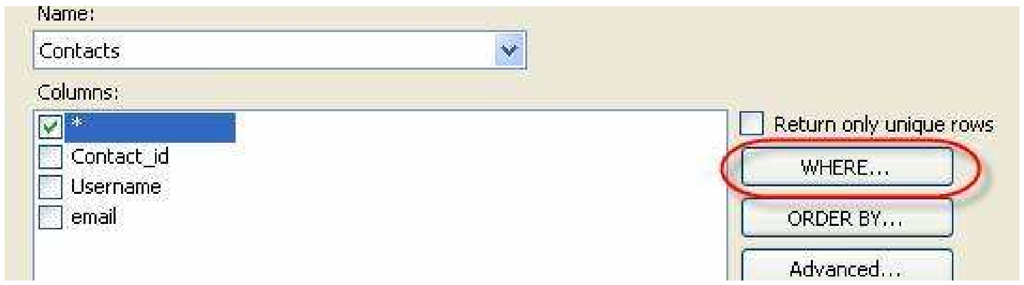
http://localhost:4369/Week2/detailsPage.aspx?id=1

Here is the code created for the gridView:

```
<asp:GridView ID="GridView1" runat="server" AutoGenerateColumns="False"
DataKeyNames="Contact_id" DataSourceID="SqlDataSource1">
<Columns>
  <asp:HyperLinkField DataNavigateUrlFields="contact_id"
  DataNavigateUrlFormatString="detailsPage.aspx?id={0}"
  DataTextField="Username" HeaderText="Select" />
</Columns>
</asp:GridView>
```

Next we must create the details.aspx page

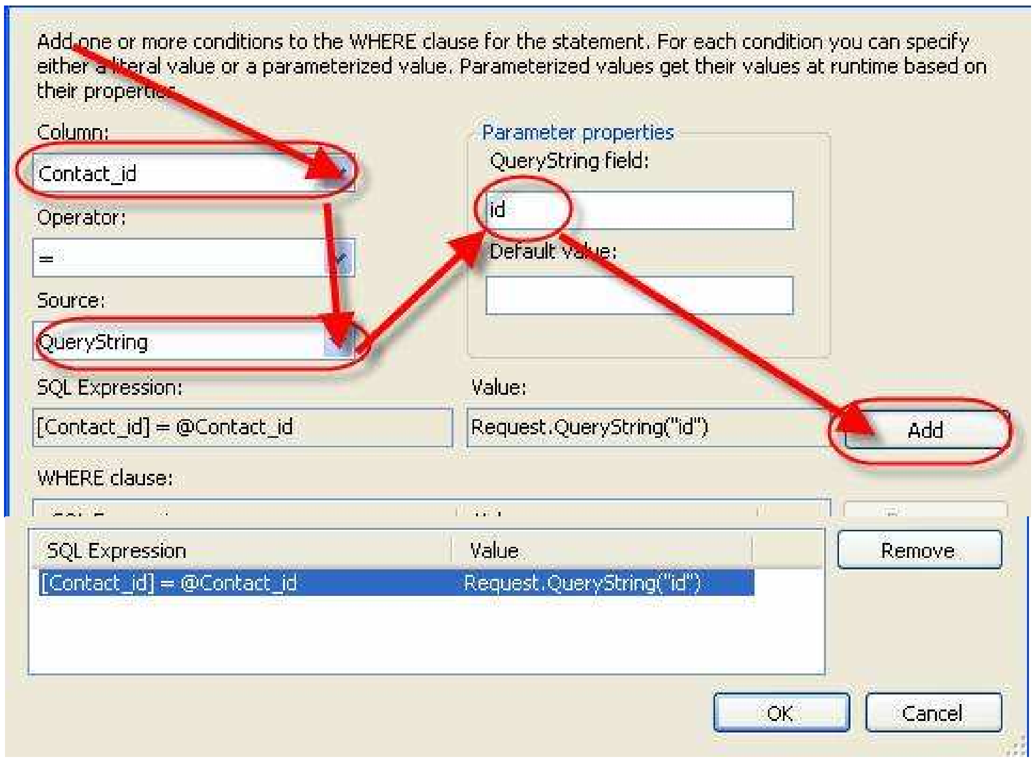
- Add another webform and name it *detailsPage.aspx*
- Add a SQLDataSource control and configure it to your connectionstring
- Add all the columns
- Click on the where button



Name:
Contacts

Columns:
- [✓] *
- [ ] Contact_id
- [ ] Username
- [ ] email

- Select contact_id as the column
- Select Querystring as the Source
- The querystring field is contact_id
- Click on Add



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: Contact_id
Operator: =
Source: QueryString
Parameter properties
QueryString field: id
Default value:
SQL Expression: [Contact_id] = @Contact_id
Value: Request.QueryString("id")
WHERE clause:

SQL Expression	Value
[Contact_id] = @Contact_id	Request.QueryString("id")

- Click OK
- Click Next
- Click Finish
- Add a detailsView control and configure it to your SQLDataSource
- Save it and test your previous page with the hyperlinks again

This time click one of the hyperlinks

Programming SQL Commands

These events fire AFTER a SQLDataSource command

- Deleted - fires after its delete command
- Inserted - fires after its insert command
- Selected - fires after its select command
- Updated - fires after its update command

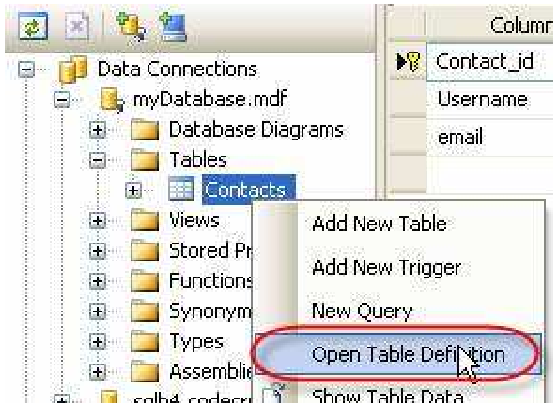
You can add code to run when these events fire
These events fire BEFORE a SQLDataSource command

- Deleting - fires before the delete command is executed
- Inserting - fires before the insert command is executed
- Selecting - fires before the select command is executed
- Updating - fires before the update command is executed
- Filtering - fires before the SQLDataSource filters its data

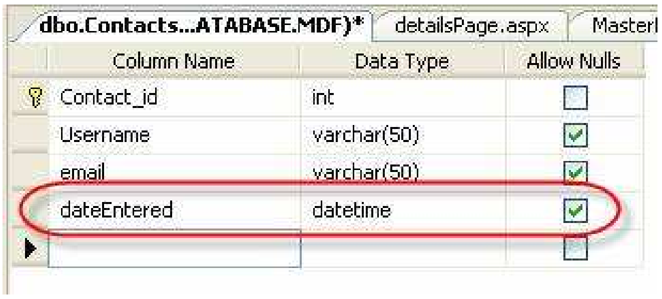
You can add your own parameters in code before inserting, updating or deleting

Creating Parameters in Code

- Open the server Explorer
- Right click on the *Contacts* table
- Select Open Table Definition



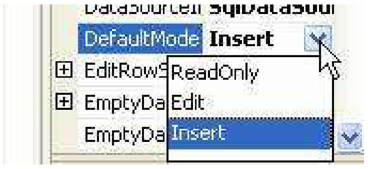
- Add the following column information



dbo.Contacts...ATABASE.MDF)* | detailsPage.aspx | Master

Column Name	Data Type	Allow Nulls
Contact_id	int	☐
Username	varchar(50)	✓
email	varchar(50)	✓
dateEntered	datetime	✓
		☐

- Add another webform
- Add a SQLDataSource control to the webform and configure it to your database
- Select all column and click advanced and generate your SQL statements
- Add a detailsView control and configure it to your SQLDataSource control
- Check the enable Inserting checkbox in the smarttag
- Change the DefaultMode property to Insert



DefaultMode **Insert**

Here is the current parameters created for you:

```
<InsertParameters>
  <asp:Parameter Name="Username" Type="String" />
  <asp:Parameter Name="email" Type="String" />
  <asp:Parameter Name="dateEntered" Type="DateTime" />
</InsertParameters>
```

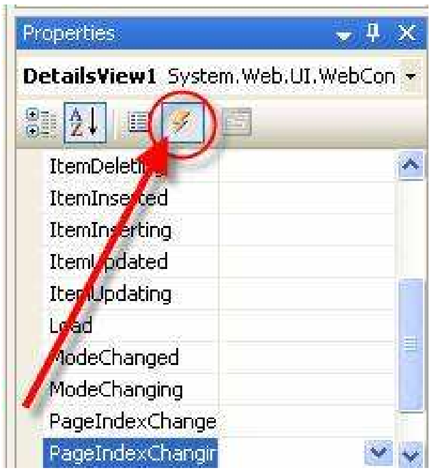
Look at the code for the detailsView:

```
<asp:DetailsView ID="DetailsView1" runat="server" AutoGenerateRows="False"
DataKeyNames="Contact_id"
DataSourceID="SqlDataSource1" DefaultMode="Insert" Height="50px" Width="125px"
OnItemInserting="DetailsView1_ItemInserting">
<Fields>
<asp:BoundField DataField="Contact_id" HeaderText="Contact_id" InsertVisible="False"
ReadOnly="True" SortExpression="Contact_id" />
<asp:BoundField DataField="Username" HeaderText="Username" SortExpression="Username"
/>
<asp:BoundField DataField="email" HeaderText="email" SortExpression="email" />
<asp:BoundField DataField="dateEntered" HeaderText="dateEntered"
SortExpression="dateEntered" />
<asp:CommandField ShowInsertButton="True" />
</Fields>
</asp:DetailsView>
```

- Delete the asp:BoundField named dateEntered.

We are going to programmatically add the value to this parameter. This will remove it from the visual end of the control.
We want to add this code before the data is entered so we are going to use the Inserting event

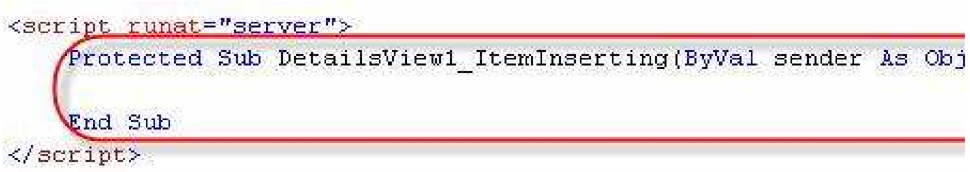
- In the properties window click on the events button



We want ItemInserting

- Double click on the box beside it

It adds a code block for you:

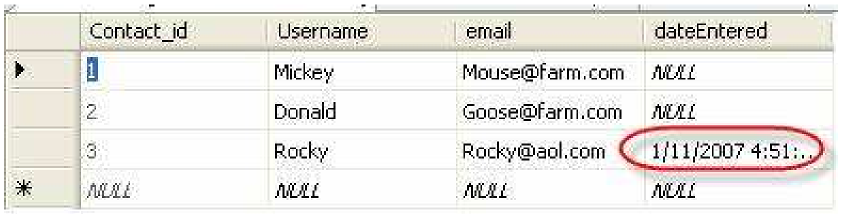


```
<script runat="server">
    Protected Sub DetailsView1_ItemInserting(ByVal sender As Obj

    End Sub
</script>
```

Here we can add the code to give the dateEntered parameter a value of the current date and time:
SQLDataSource1.InsertParameters.Item("dateEntered").DefaultValue = dateTime.Now()

Try it
Add some data
Open your table and you will see that your data has been entered and the current time and date are also entered



	Contact_id	Username	email	dateEntered
▶	1	Mickey	Mouse@farm.com	NULL
	2	Donald	Goose@farm.com	NULL
	3	Rocky	Rocky@aol.com	1/11/2007 4:51:...
*	NULL	NULL	NULL	NULL

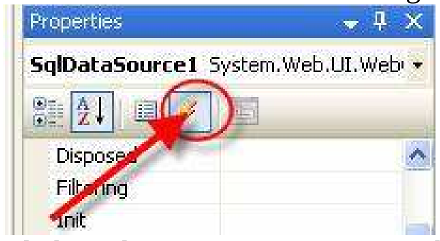
Execute Select, Insert, update or delete command in code
The SQLDataSource control has 4 method that execute SQL commands

1. Select
2. Insert
3. Update
4. Delete

Each executes the appropriate SQL command

- Create a new webform
- Add 2 textboxes
- Name them *txtUsername* and *txtEmail*
- Add labels to identify the textboxes
- Add a button, change the text to *Add*
- Add a SQLDataSource control and configure it to your database
- Make sure to generate the SQL statements with the advanced button
- You can delete the update and delete command and parameters if you want they are not needed
- Add a gridView and configure it to your SQLDataSource control
- Double-click the button and add the following code:

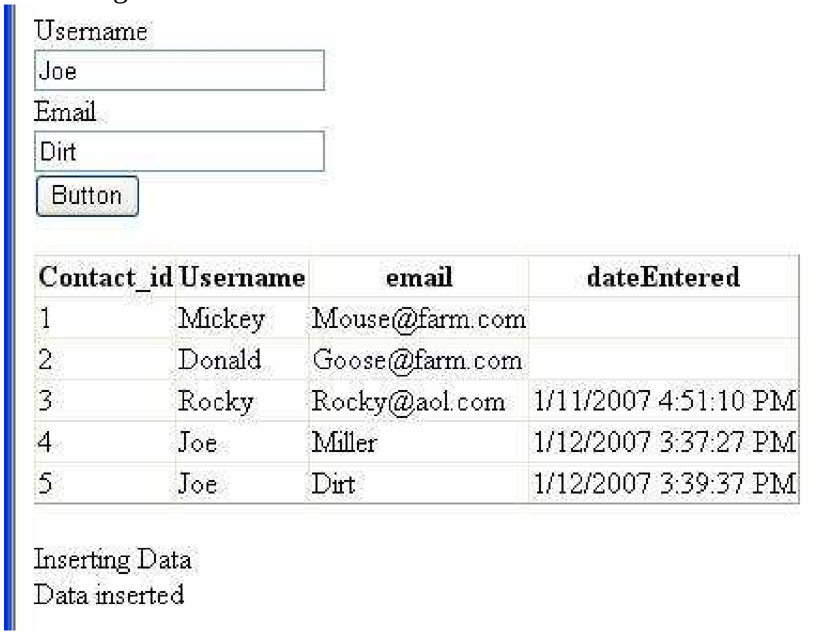
SQLDataSource1.InsertParameters(“username”).DefaultValue=txtusername.text
SQLDataSource1.InsertParameters(“email”).DefaultValue=txtemail.text
SQLDataSource1.InsertParameters(“dateEntered”).DefaultValue=datetime.Now()
SQLDataSource1.Insert( )
This code will create your parameters from the information passed in the textboxes when the user clicks the button
Add a label and name it lblMessage



Click on the SQLDataSource event button and double-click *inserting*
Add this code:

lblMessage.text="Inserting Data"
Add another label and name it txtMessage2
Click on the SQLDataSource event button and double-click *inserted*

Add this code:
lblMessage2.text="Data Inserted"



Username

Joe

Email

Dirt

Contact_id	Username	email	dateEntered
1	Mickey	Mouse@farm.com	
2	Donald	Goose@farm.com	
3	Rocky	Rocky@aol.com	1/11/2007 4:51:10 PM
4	Joe	Miller	1/12/2007 3:37:27 PM
5	Joe	Dirt	1/12/2007 3:39:37 PM

Inserting Data
Data inserted

Data Source Mode

SQLDataSource control retrieves data in 2 ways

- Dataset (DataView)
- DataReader

The dataset is used by default
A Datareader is faster and more efficient.
It is a forward-only representation of the data
If you want to just get a fast retrieval of data
Erase the InsertCommand, DeleteCommand and UpdateCommands in the SQLDataSource control code
Delete the insertParameters, UpdateParameters and DeleteParameters tags
Add the following line:
DataSourceMode="DataReader"
The complete code should now look like this:

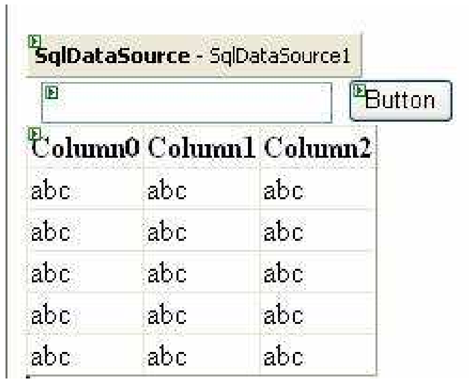
```
<asp:SqlDataSource ID="SqlDataSource1" runat="server"
DataSourceMode="DataReader"
ConnectionString="<%$ ConnectionStrings:myDatabaseConnectionString %>"
SelectCommand="SELECT * FROM [Contacts]" >
</asp:SqlDataSource>
```

This technique is good for fast data retrieval when all you need is to view data
Make sure the gridView is set to your SQLDataSource control

Filtering Rows

You can filter the data returned by the SQLDataSource control

- Add a new webform
- Add a textbox, button, SQLDataSource and gridView control
- Name the textbox control *txtFilter*



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

- Configure the SQLDataSource control for your connection string
- Select all columns
- Configure the gridView to the SQLDataSource
- Look at the code for the SQLDataSource control:

```
<asp:SqlDataSource ID="SqlDataSource1" runat="server" ConnectionString="<%$
ConnectionStrings:myDatabaseConnectionString %>"
SelectCommand="SELECT * FROM [Contacts]">
</asp:SqlDataSource>
```

Add a filter expression:

```
<asp:SqlDataSource ID="SqlDataSource1" runat="server" ConnectionString="<%$
ConnectionStrings:myDatabaseConnectionString %>"
FilterExpression=”Username like ‘{0}%’ ”
SelectCommand="SELECT * FROM [Contacts]">
</asp:SqlDataSource>
```

Then add a FilterParameter tag between the SQLDataSource tags:

```
<asp:SqlDataSource ID="SqlDataSource1" runat="server" ConnectionString="<%$
ConnectionStrings:myDatabaseConnectionString %>"
FilterExpression=”Username like ‘{0}%’ ”
SelectCommand="SELECT * FROM [Contacts]">
<FilterParameters>
   <asp:controlParameter Name=”username” controlID=”txtFilter” />
</FilterParameters>
</asp:SqlDataSource>
```

Stored procedures

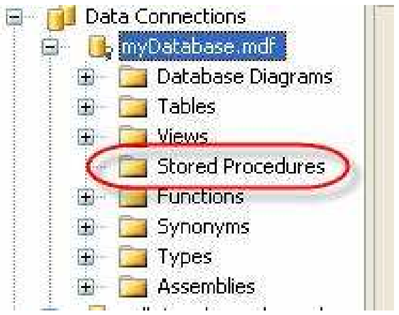
You can assign the value StoredProcedure in any of the following properties

1. SelectCommandType
2. InsertCommandType
3. UpdateCommandType
4. DeleteCommandType

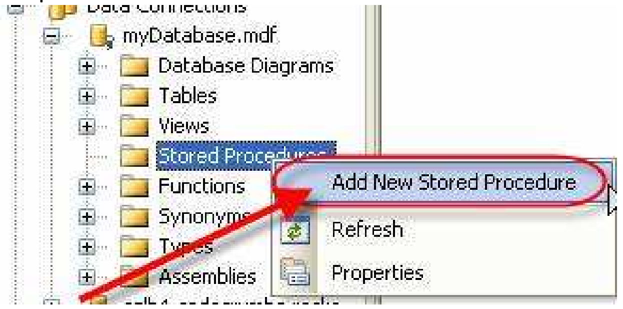
Creating a stored procedure in Visual Studio

- Open the server explorer

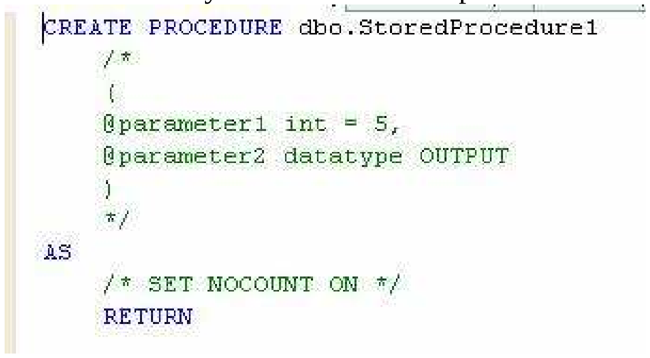
- Expand the database until you see Stored Procedures



- Right-click on stored procedures and select *Add New Stored Procedure*



From here you can add a stored procedure

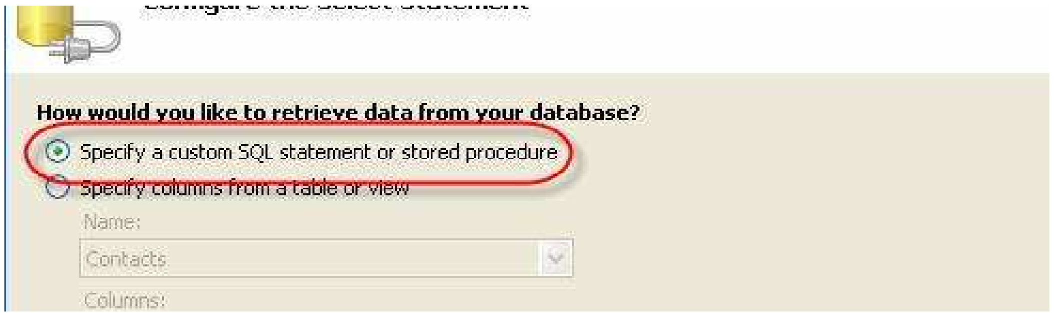


```
CREATE PROCEDURE dbo.StoredProcedure1
    /*
    (
    @parameter1 int = 5,
    @parameter2 datatype OUTPUT
    )
    */
AS
    /* SET NOCOUNT ON */
    RETURN
```

Type:
CREATE PROCEDURE myStoredProcedure
AS

Select Count(*) as NumUsers from Contacts

- Add a new webform
- Add a SQLDataSOurce control and configure it to your connectionstring
- Select *Specify a custom SQL statement or stored procedure*
- Click *Next*



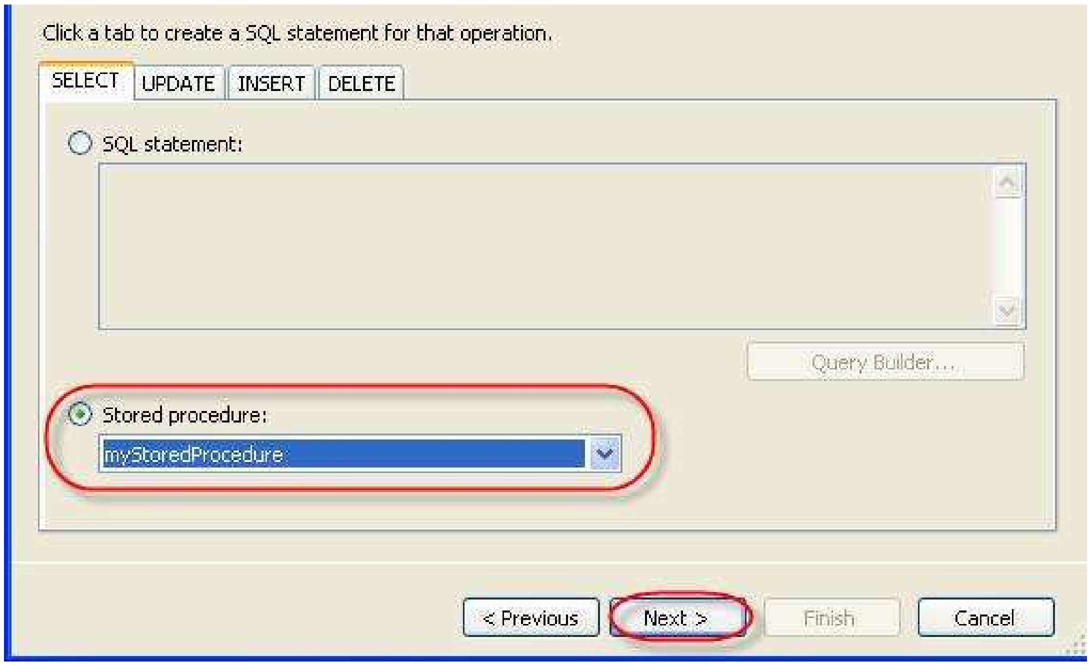
How would you like to retrieve data from your database?

(●) Specify a custom SQL statement or stored procedure
( ) Specify columns from a table or view

Name:
Contacts

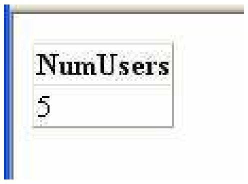
Columns:

- Select the Stored Procedure option
- Select your stored procedure from the dropdown list


Click a tab to create a SQL statement for that operation.

Stored procedure: myStoredProcedure

- Click Next
- Click Finish
- Test it



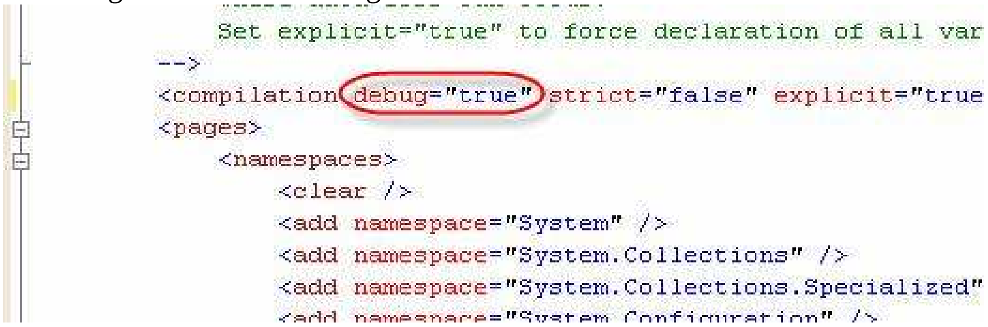
NumUsers
5

ASP.Net 2.0 tutorials & training

Error Handling

Try Catch Blocks

Open your web.config file
Set debug to true in web.config



```
            Set explicit="true" to force declaration of all var
        -->
        <compilation debug="true" strict="false" explicit="true
        <pages>
            <namespaces>
                <clear />
                <add namespace="System" />
                <add namespace="System.Collections" />
                <add namespace="System.Collections.Specialized"
                <add namespace="System.Configuration" />
```

- Add a new webform
- Type *Generate an exception*
- Add a button
- Double-click the button and add this code:

Dim test as string=nothing
Response.write(test.toString( ))
This will cause an exception

- Test it

Add try catch around it
Try
Dim test as string=nothing
Response.write(test.toString( ))
Catch ex as exception
Response.write(string.concat("An error occurred",ex.message)
End try
Generates a generic exception
Modify it:
Try
Dim test as string=nothing
Response.write(test.toString( ))
Catch nex as nullreferenceexception
    Response.write(string.concat("The variable was not initialized"))
Catch ex as exception
Response.write(string.concat("An error occurred",ex.message)
End try

Exception handling stops trying to catch once an exception is handled
Put specific handlers first
Put generic handlers last

Error Handling

Try Catch Blocks

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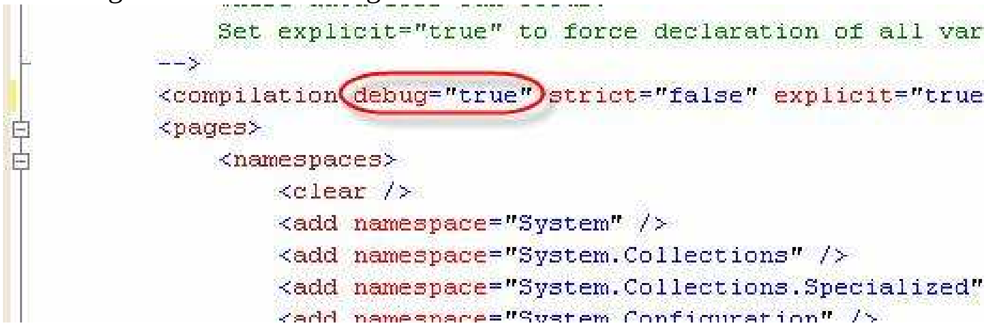
Set debug to true in web.config



```
            Set explicit="true" to force declaration of all var
        -->
        <compilation debug="true" strict="false" explicit="true
        <pages>
            <namespaces>
                <clear />
                <add namespace="System" />
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End try

Exception handling stops trying to catch once an exception is handled
Put specific handlers first
Put generic handlers last

Venky

DataSet Object in ADO.Net 2.0

The dataset object is an in-memory representation of data
The dataset object has a collection of dataTables and dataRelation objects
The dataset can contain one or more dataTables
Example:
The following example shows how you can have two dataTables in a single dataset and add a dataRelation
Add this line above the page_load

```
Imports System.data
```

Add this to the page_load

```
'create new dataset
Dim ShoppingCart As New DataSet("Cart")
'create dataTable
Dim products As DataTable = ShoppingCart.Tables.Add("Products")
'add columns
products.Columns.Add("product_ID", GetType(Guid))
products.Columns.Add("ProductName", GetType(String))
products.Columns.Add("Price", GetType(Integer))
products.Columns.Add("cat_id", GetType(Guid))
'add primary key
products.PrimaryKey = New DataColumn() {products.Columns("product_ID")}
'create second dataTable
Dim category As DataTable = ShoppingCart.Tables.Add("category")
'add columns
category.Columns.Add("cat_id", GetType(Guid))
category.Columns.Add("catName", GetType(String))
'add primary key
category.PrimaryKey = New DataColumn() {category.Columns("cat_id")}
'create data relation
ShoppingCart.Relations.Add("shoppingcart_Products", _
        category.Columns("cat_id"),products.Columns("cat_id") )
```

Add some sample data

```
'add data
Dim shop, cat As Guid
'get new guids
shop = Guid.NewGuid()
cat = Guid.NewGuid()
'add row to category table
category.Rows.Add(cat, "household")
'Add row to products
products.Rows.Add(shop, "toaster", 25.21, cat)
'get another guid
shop = Guid.NewGuid()
'Add another row to products
products.Rows.Add(shop, "microwave", 250.0, cat)
'get another guid
shop = Guid.NewGuid()
'Add another row to products
products.Rows.Add(shop, "Silverware", 27.5, cat)
'get two new guids
cat = Guid.NewGuid()
shop = Guid.NewGuid()
```

```
'add another row to category
category.Rows.Add(cat, "electronics")
'Add another row to products
products.Rows.Add(shop, "television", 300.0, cat)
'get another guid
shop = Guid.NewGuid()
'Add another row to products
products.Rows.Add(shop, "VCR", 250.0, cat)
```

Add 2 gridVIews to the webform

Add this code

```
'bind to first gridView
GridView1.DataSource = ShoppingCart
GridView1.DataMember = "products"
GridView1.DataBind()
'bind to second gridView
GridView2.DataSource = ShoppingCart
GridView2.DataMember = "category"
GridView2.DataBind()
```

Since a dataset can have more than one dataTable you must set the datasource to the dataset and the dataMember to each dataTable

Serialize dataSet as XML

Use the dataset’s writeXML method to serialize a dataset to XML

Add this code

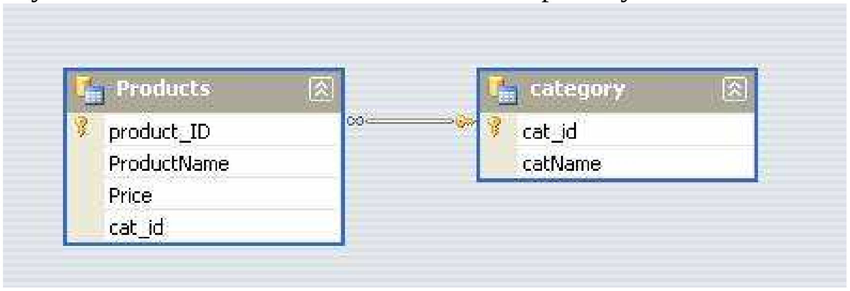
```
ShoppingCart.WriteXml(MapPath("Cart.xml"))
```

Here is the XML is created:

```
<?xml version="1.0" standalone="yes"?>
<Cart>
  <Products>
    <product_ID>9e5ff882-9f22-4ca2-a114-84b93abac05d</product_ID>
    <ProductName>toaster</ProductName>
    <Price>25</Price>
    <cat_id>231a895d-0094-4cb5-bd82-c1ac40c1f0e9</cat_id>
  </Products>
  <Products>
    <product_ID>4a13fd47-cfd1-4b78-a516-ea7c069b2ea2</product_ID>
    <ProductName>microwave</ProductName>
    <Price>250</Price>
    <cat_id>231a895d-0094-4cb5-bd82-c1ac40c1f0e9</cat_id>
  </Products>
  <Products>
    <product_ID>5ae1f57d-8ee1-47f8-b32c-9629cb64e9ec</product_ID>
    <ProductName>Silverware</ProductName>
    <Price>28</Price>
    <cat_id>231a895d-0094-4cb5-bd82-c1ac40c1f0e9</cat_id>
  </Products>
  <Products>
    <product_ID>9a14e5e7-c569-4ae1-8e76-a2809a6a8ed8</product_ID>
    <ProductName>television</ProductName>
    <Price>300</Price>
    <cat_id>c35ef4d4-b702-4fec-89b8-8620a24ffd24</cat_id>
  </Products>
  <Products>
    <product_ID>84c059a2-0c18-472a-8bf2-3c1e5c679dd0</product_ID>
    <ProductName>VCR</ProductName>
    <Price>250</Price>
    <cat_id>c35ef4d4-b702-4fec-89b8-8620a24ffd24</cat_id>
  </Products>
  <category>
    <cat_id>231a895d-0094-4cb5-bd82-c1ac40c1f0e9</cat_id>
    <catName>household</catName>
  </category>
  <category>
    <cat_id>c35ef4d4-b702-4fec-89b8-8620a24ffd24</cat_id>
    <catName>electronics</catName>
  </category>
</Cart>
```

Adding DataType info to the XML file

Change the last line to this
ShoppingCart.WriteXml(MapPath("Cart2.xml"), XmlWriteMode.WriteSchema)
You can also put the schema info into a separate file with the following code
ShoppingCart.WriteXml(MapPath("Cart.xml"))
ShoppingCart.WriteXmlSchema(MapPath("cart.xsd"))
If you double-click on this file in solution explorer you see



Serialize dataset as diffGram

A diffgram is an XML file with all the data from your dataset
It also has the original datarow info
Add this code to create a diffgram:
ShoppingCart.WriteXml(MapPath("cartDiffGram.xml"), _
    XmlWriteMode.DiffGram)
A diffgram has all the datarow version info, whether rows have been added, changed etc.

Deserializing from a diffGram

You can use a diffgram to create a dataset from an XML file
Dim fromXml As New DataSet()
'create structure
fromXml.ReadXmlSchema(MapPath("cart.xsd"))
'populate from the XML file
fromXml.ReadXml(MapPath("cartDiffGram.xml"))
'bind to a third gridView
GridView3.DataSource = fromXml
GridView3.DataBind()