Multiview and *Wizard* controls

The *MultiView* and *Wizard* controls provide two ways to divide a page into multiple views or steps. Both of these controls let you navigate between views or steps without writing any *C#* code, and they make it easy to work with the data that's stored within these views or steps.

Checkout application uses three views of the *MultiView* control. Although each of these views appears to be a separate page, each view is actually on the same *Checkout.aspx* page.

How to add views

To use a *Multiview* control you need drug and drop it on the form from the Toolbox (*"Standard"* tab). Then, you can add it contains three *View* controls named *vContact*, *vShippingMethod*, and *cCreditCard*. To keep this figure simple, each view only contains some plain text and a *Button* control or two. Due limit of space we show this page by two parts – up part and down part:

Up part of the *myCheckout.aspx*

Down part of the *myCheckout.aspx*

The *Multiview* control allows you navigate between views without writing any *C#* code. To start, you can set the *ActiveViewIndex* attribute of the *Multiview* control to select the view that's displayed when the page is first loaded. For example, in this figure, this attribute is set to 0 to display the first view.

```
<asp:MultiView ID="mvCheckout" Runat="server" ActiveViewIndex="0">
  <asp:View ID="vContact" Runat="server">
    Please enter your contact information:<br /><br />
    <table>
    <tr>
      <td style="width: 100px">
        <div style="text-align: right">
          First Name:</div>
      </td>
      <td style="width: 402px">
        <asp:TextBox ID="txtFirstName" Runat="server"
          Width="200px" Height="22px"></asp:TextBox>
```

```
            <asp:RequiredFieldValidator
               ID="RequiredFieldValidator1" Runat="server"
               ErrorMessage="First Name is required."
               ControlToValidate="txtFirstName">
            </asp:RequiredFieldValidator>
          </td>
        </tr>
        <tr>
          <td style="width: 100px">
             <div style="text-align: right">
                Last name:</div>
          </td>
          <td style="width: 402px">
             <asp:TextBox ID="txtLastName" Runat="server"
                Width="200px" Height="22px"></asp:TextBox>
             <asp:RequiredFieldValidator
                ID="RequiredFieldValidator2" Runat="server"
                ErrorMessage="Last Name is required."
                ControlToValidate="txtLastName">
             </asp:RequiredFieldValidator>
          </td>
        </tr>
        <tr>
          <td style="width: 100px">
             <div style="text-align: right">
                Email:</div>
          </td>
          <td style="width: 402px">
             <asp:TextBox ID="txtEmail" Runat="server"
                Width="200px" Height="22px"></asp:TextBox>
             <asp:RequiredFieldValidator
                ID="RequiredFieldValidator3" Runat="server"
                ErrorMessage="Email is required."
                ControlToValidate="txtEmail">
             </asp:RequiredFieldValidator>
          </td>
        </tr>
      </table>
      <br />
      <asp:Button ID="Button1" runat="server"
         CommandName="NextView" Text="Next" />
   </asp:View>
   <asp:View ID="vShippingMethod" Runat="server">
      <asp:Panel ID="Panel1" Runat="server" Width="492">
         Please select a shipping method:<br /><br />
         <asp:RadioButton ID="rdoUPSGround" Runat="server"
```

```
                Text="UPS Ground" GroupName="ShipVia"
                Checked="True" />
            <br />
            <asp:RadioButton ID="rdoUPS2Day" Runat="server"
                Text="UPS Second Day" GroupName="ShipVia" />
            <br />
            <asp:RadioButton ID="rdoFedEx" Runat="server"
                Text="Federal Express Overnight" GroupName="ShipVia" />
            <br />
        </asp:Panel><br />
        <asp:Button ID="Button2" runat="server"
            CommandName="PrevView" Text="Previous" />
        <asp:Button ID="Button3" runat="server"
            CommandName="NextView" Text="Next" />
    </asp:View>
    <asp:View ID="vCreditCard" Runat="server">
        <asp:Panel ID="Panel2" Runat="server" Width="492px">
            Please enter your credit card information:<br />
            <br />
            <table>
                <tr>
                    <td style="width: 100px" rowspan="2">
                        <div style="text-align: right">
                            <asp:ListBox ID="listCardType"
                                Runat="server">
                                <asp:ListItem Value="VISA"
                                    Selected="True">Visa</asp:ListItem>
                                <asp:ListItem Value="MC">
                                    MasterCard</asp:ListItem>
                                <asp:ListItem Value="AMEX">
                                    American Express</asp:ListItem>
                            </asp:ListBox>
                        </div>
                    </td>
                    <td style="width: 143px">
                        <div style="text-align: right">
                        Card Number:</div>
                    </td>
                    <td style="width: 265px" valign="middle">
                        <asp:TextBox ID="txtCardNumber" Runat="server"
                            Height="22px" Width="262px"></asp:TextBox>
                    </td>
                </tr>
                <tr>
                    <td style="width: 143px; height: 16px">
                        <div style="text-align: right">
```

```
            Expiration Date:</div>
        </td>
        <td style="width: 265px; height: 16px" valign="middle">
          <asp:DropDownList ID="ddlExpirationMonth"
            Runat="server">
            <asp:ListItem Value="1">January</asp:ListItem>
            <asp:ListItem Value="2">February</asp:ListItem>
            <asp:ListItem Value="3">March</asp:ListItem>
            <asp:ListItem Value="4">April</asp:ListItem>
            <asp:ListItem Value="5">May</asp:ListItem>
            <asp:ListItem Value="6">June</asp:ListItem>
            <asp:ListItem Value="7">July</asp:ListItem>
            <asp:ListItem Value="8">August</asp:ListItem>
            <asp:ListItem Value="9">September</asp:ListItem>
            <asp:ListItem Value="10">October</asp:ListItem>
            <asp:ListItem Value="11">November</asp:ListItem>
            <asp:ListItem Value="12">December</asp:ListItem>
          </asp:DropDownList> 
          <asp:DropDownList ID="ddlExpirationYear"
            Runat="server"></asp:DropDownList>
        </td>
      </tr>
    </table>
    <br />
    <asp:Button ID="Button4" runat="server"
      CommandName="PrevView" Text="Previous" />
    <asp:Button ID="btnFinish" Runat="server"
      CommandName="NextView" Text="Finish"
      OnClick="btnFinish_Click" />
  </asp:Panel>
</asp:View>
<asp:View ID="vFinish" runat="server">
  Your order is complete!<br /><br />
  Here is the data you entered:<br /><br />
  <asp:TextBox ID="txtMessage" runat="server"
    Height="182px" TextMode="MultiLine" Width="346px">
  </asp:TextBox><br />
</asp:View>

</asp:MultiView>
```

Then, you can set a button's *CommandName* attribute to one of the commands that work with the *Multiview* control. In our case, the *CommandName* attribute of the *Next* button is set to *NextView*, and the *CommandName* attribute of the *Previous* button is set to *PrevView*.

The second view of the *myCheckout.aspx*
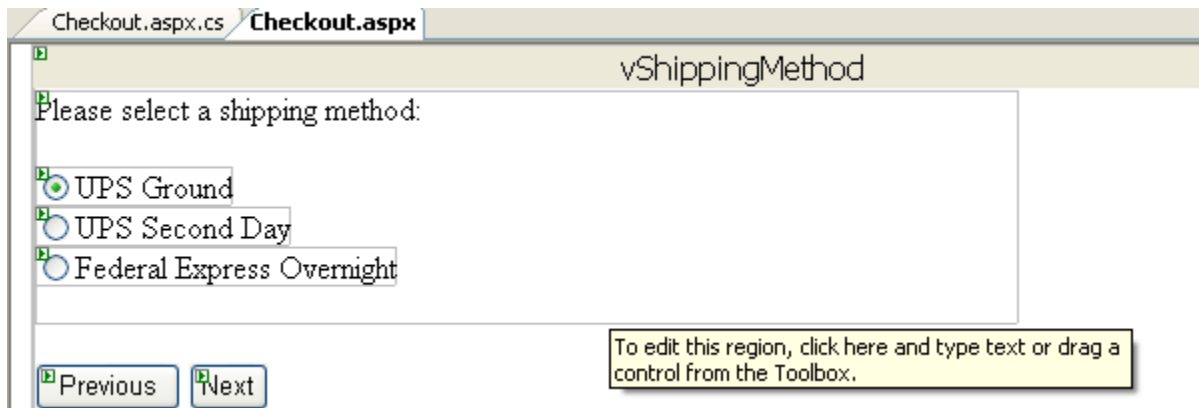
The *aspx* code for the second *View* control

```
<asp:MultiView ID="mvCheckout" Runat="server" ActiveViewIndex="0">

  <asp:View ID="vContact" Runat="server">
         <-- code for the first view goes here -->
  </asp:View>

  <asp:View ID="vShippingMethod" Runat="server">
    <asp:Panel ID="Panel1" Runat="server" Width="492">
      Please select a shipping method:<br /><br />
      <asp:RadioButton ID="rdoUPSGround" Runat="server"
        Text="UPS Ground" GroupName="ShipVia"
        Checked="True" />
      <br />
      <asp:RadioButton ID="rdoUPS2Day" Runat="server"
        Text="UPS Second Day" GroupName="ShipVia" />
      <br />
      <asp:RadioButton ID="rdoFedEx" Runat="server"
        Text="Federal Express Overnight" GroupName="ShipVia" />
      <br />
    </asp:Panel><br />
    <asp:Button ID="Button2" runat="server"
      CommandName="PrevView" Text="Previous" />
    <asp:Button ID="Button3" runat="server"
      CommandName="NextView" Text="Next" />
  </asp:View>

  <asp:View ID="vCreditCard" Runat="server">
         <-- code for the second view goes here -->
  </asp:View>
```

```
<asp:View ID="vFinish" runat="server">
        <-- code for the third view goes here -->
</asp:View>

</asp:MultiView>
```
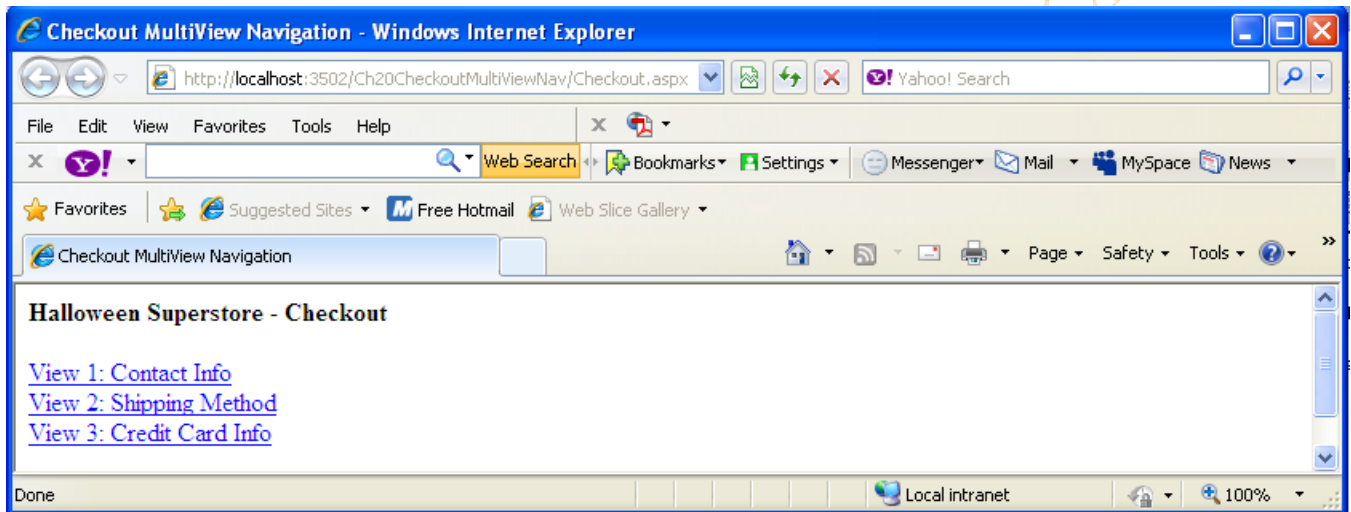
Navigation between views with command

For most *MultiView* controls, you can navigate between the views by adding one or more buttons to each view the setting the *CommandName* attribute of each button to *NextView* or *PrevView* as shown below.

How to navigate by index

```
<asp:View ID="vNavigate" runat="server">
  <asp:LinkButton ID="LinkButton1" runat="server"
     CommandArgument="0" CommandName="SwitchViewByIndex" >
    View 1: Contact Info</asp:LinkButton><br />
  <asp:LinkButton ID="LinkButton2" runat="server"
     CommandArgument="1" CommandName=" SwitchViewByIndex">
    View 2: Shipping Method</asp:LinkButton><br />
  <asp:LinkButton ID="LinkButton3" runat="server"
     CommandArgument="2" CommandName=" SwitchViewByIndex">
    View 3: Credit Card Info</asp:LinkButton>
</asp:View>
```

How to navigate by ID

```
<asp:View ID="vNavigate" runat="server">
    <asp:LinkButton ID="LinkButton1" runat="server"
        CommandArgument="vContect" CommandName=" SwitchViewByID " >
        View 1: Contact Info</asp:LinkButton><br />
    <asp:LinkButton ID="LinkButton2" runat="server"
        CommandArgument="vShippingMethod" CommandName="SwitchViewByID">
        View 2: Shipping Method</asp:LinkButton><br />
    <asp:LinkButton ID="LinkButton3" runat="server"
        CommandArgument="vCreditCard" CommandName="SwitchViewByID">
        View 3: Credit Card Info</asp:LinkButton>
</asp:View>
```

How to access the data stored in a *MultiView* control

The final view is displayed how to access the data that's stored within a *MultiView* control. This final view is displayed when the user clicks on the *Finish* button that's available from the third view. Since the data for each of the previous views is automatically stored in the view state of the page, the code for this final view can access that data. In other words, the state of these controls is automatically maintained. And since all of the controls are on the same page, you can directly access them just as you would any controls.

A view that displays the data of the *MultiView* control
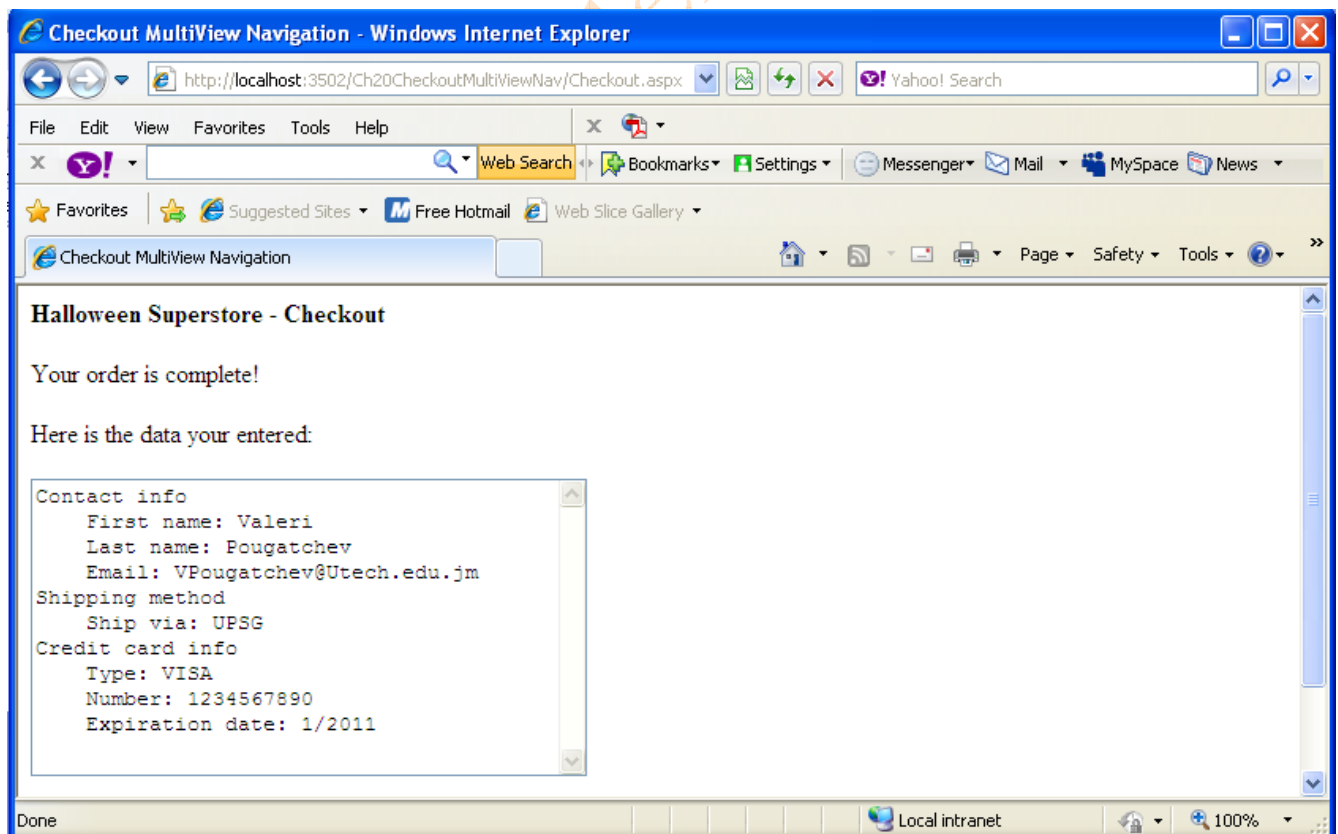
Code that access the data that's stored in the *MultiView* control

```
protected void btnFinish_Click(object sender, EventArgs e)
{
    mvCheckout.ActiveViewIndex = 3;

    this.DisplayMessage();
}

private void DisplayMessage()
{
    string shipVia = "";

    if (rdoUPSGround.Checked)
        shipVia = "UPSG";
    else if (rdoUPS2Day.Checked)
        shipVia = "UPS2D";
    else if (rdoFedEx.Checked)
        shipVia = "FEDEX";

    string message =
        "Contact info\n" +
        "   First name: " + txtFirstName.Text + "\n" +
        "   Last name: " + txtLastName.Text + "\n" +
        "   Email: " + txtEmail.Text + "\n" +
        "Shipping method\n" +
        "   Ship via: " + shipVia + "\n" +
        "Credit card info\n" +
        "   Type: " + listCardType.SelectedValue + "\n" +
        "   Number: " + txtCardNumber.Text + "\n" +
        "   Expiration date: " + ddlExpirationMonth.SelectedValue + "/"
                        + ddlExpirationYear.SelectedValue;
    txtMessage.Text = message;
}
```

For example, the code in the *DisplayMessage* begins by getting the shipping type from the radio buttons that are in the second view. Then, this code builds a string that contains the data that's stored in the first three views. To do that, it directly accesses the text box, list box, and drop-down list controls from the first and third views. Finally, it displays this message in the multi-line text box of the fourth and final view.

Properties and events of the *MultiView* and *View* controls

Properties of the *MultiView* control

Property	Description
ActiveViewIndex	Gets or sets the index for the active view where 0 is the first view, 1 is the second view, and so on. By default, this is set to -1 so no view is selected as the active view.
Views	Gets the collection of *View* objects contained within the *MultiView* control. The Count property of this collection can be used to determine the total number of *View* controls in the *MultiView* control.

Button properties that work with the *MultiView* control

Property	Description
CommandName	Sets the navigation command for the button. This property can be set to *NextView*, *PrevView*, *SwitchViewByIndex*, or *SwitchViewByID*.
CommandArgument	Sets the arguments required by the *SwitchViewByIndex* and *SwitchViewByID* commands.

An event of the *MultiView* control

Event	Description
ActiveViewChanged	Fires every time active view changes

An event of the *View* control

Event	Description
Activate	Fires every time the view is activated
Deactivate	Fires every time the view is deactivated

Code that uses the *ActiveViewChanged* event of the *MultiView* control

```
protected void mvCheckout_ActiveViewChanged(object sender, EventArgs e)
{
    int viewNumber = myCheckout.ActiveViewIndex + 1;
    lblStatus.Text = "View " + viewNumber + " of " + mvCheckout.Views.Count;
}
```

Wizard control

The steps below show a *Checkout* application that uses three steps of a *Wizard* control. Although each of these steps appears to be a separate page, each step is actually part of the same *Check.aspx* page. This works like the views within a *MultiView* control. The main difference is that, by default, the *Wizard* control includes a side bar on the left side of the control, which provides links to each step in the control. As a result, you can see easily navigate to any step in the wizard.

I addition, by default, the *Wizard* control automatically include the *Next, Previous*, and *Finish* buttons shown on these steps.

Step 1 of a *Wizard* control

Step 2 of a *Wizard* control

Step 3 of a *Wizard* control

Adding or removing steps

Figures below shows how to add or remove steps from a *Wizard* control. To start, you place a *Wizard* control on a page. Next, you select the *Add/Remove WizardSteps* command from the smart tag menu to display the *WizardStep* Collection Editor.
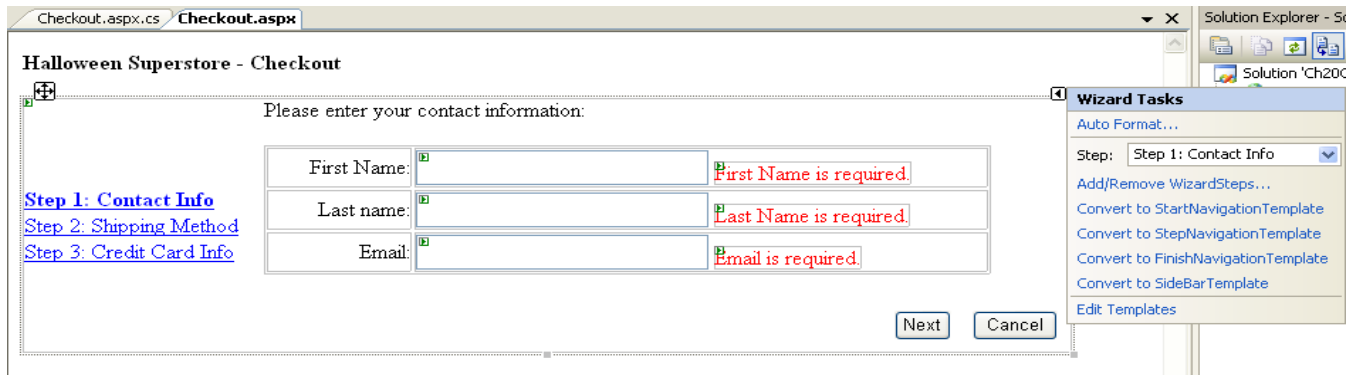
The *WizardStep* Collection Editor
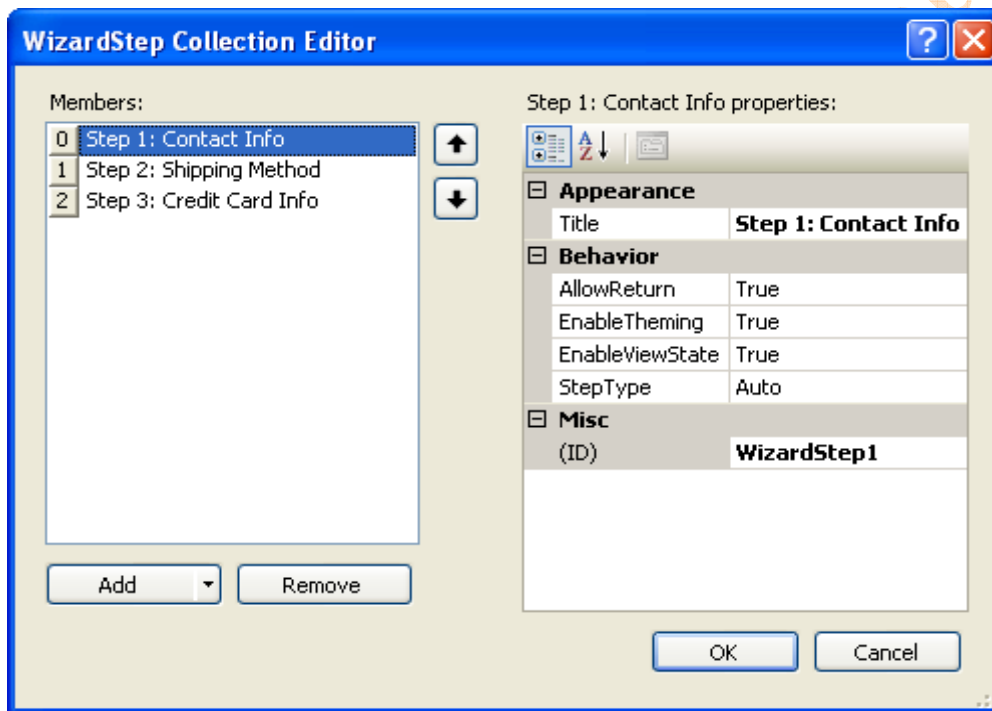
Whenever you prefer, you can work with the steps of a wizard directly in the aspx code:

```
<asp:Wizard ID="wizCheckout" runat="server"  Width="739px"
  DisplayCancelButton="True"
  OnCancelButtonClick="wizCheckout_CancelButtonClick" >
  <WizardSteps>
    <asp:WizardStep ID="WizardStep1" runat="server"
      Title="Step 1: Contact Info">
      Please enter your contact information:<br /><br />
      <table>
```

```
<tr>
  <td style="width: 100px; text-align: right">
    First Name:
  </td>
  <td style="width: 402px">
    <asp:TextBox ID="txtFirstName" runat="server"
      Height="22px" Width="200px"></asp:TextBox>
    <asp:RequiredFieldValidator
      ID="RequiredFieldValidator1"
      runat="server"
      ControlToValidate="txtFirstName"
      ErrorMessage="First Name is required."></asp:RequiredFieldValidator>
  </td>
</tr>
<tr>
  <td style="width: 100px; text-align: right" >
    Last name:
  </td>
  <td style="width: 402px">
    <asp:TextBox ID="txtLastName" runat="server"
      Height="22px" Width="200px"></asp:TextBox>
    <asp:RequiredFieldValidator
      ID="RequiredFieldValidator2"
      runat="server"
      ControlToValidate="txtLastName"
      ErrorMessage="Last Name is required."></asp:RequiredFieldValidator>
  </td>
</tr>
<tr>
  <td style="width: 100px; text-align: right">
    Email:
  </td>
  <td style="width: 402px">
    <asp:TextBox ID="txtEmail" runat="server"
      Height="22px" Width="200px"></asp:TextBox>
    <asp:RequiredFieldValidator
      ID="RequiredFieldValidator3"
      runat="server"
      ControlToValidate="txtEmail"
      ErrorMessage="Email is required."></asp:RequiredFieldValidator>
  </td>
</tr>
</table>
</asp:WizardStep>
<asp:WizardStep ID="WizardStep2" runat="server"
  Title="Step 2: Shipping Method">
```

```
Please select a shipping method:<br /><br />
<asp:RadioButton ID="rdoUPSGround" runat="server"
    Checked="True" GroupName="ShipVia" Text="UPS Ground" />
<br />
<asp:RadioButton ID="rdoUPS2Day" runat="server"
    GroupName="ShipVia" Text="UPS Second Day" />
<br />
<asp:RadioButton ID="rdoFedEx" runat="server"
    GroupName="ShipVia" Text="Federal Express Overnight" />
<br />
</asp:WizardStep>
<asp:WizardStep ID="WizardStep3" runat="server"
    Title="Step 3: Credit Card Info">
    Please enter your credit card information:<br />
    <br />
    <table>
        <tr>
            <td rowspan="2" style="width: 100px; text-align: right">
                <asp:ListBox ID="lstCardType"
                    runat="server">
                    <asp:ListItem Selected="True"
                        Value="VISA">Visa</asp:ListItem>
                    <asp:ListItem Value="MC">
                        MasterCard</asp:ListItem>
                    <asp:ListItem Value="AMEX">
                        American Express</asp:ListItem>
                </asp:ListBox>
            </td>
            <td style="width: 143px; text-align: right">
                Card Number:
            </td>
            <td style="width: 265px" valign="middle">
                <asp:TextBox ID="txtCardNumber" runat="server"
                    Height="22px" Width="262px"></asp:TextBox>
            </td>
        </tr>
        <tr>
            <td style="width: 143px; height: 16px; text-align: right">
                Expiration Date:
            </td>
            <td style="width: 265px; height: 16px"
                valign="middle">
                <asp:DropDownList ID="ddlExpirationMonth"
                    runat="server">
                    <asp:ListItem Value="1">January</asp:ListItem>
                    <asp:ListItem Value="2">February</asp:ListItem>
```

```
        <asp:ListItem Value="3">March</asp:ListItem>
        <asp:ListItem Value="4">April</asp:ListItem>
        <asp:ListItem Value="5">May</asp:ListItem>
        <asp:ListItem Value="6">June</asp:ListItem>
        <asp:ListItem Value="7">July</asp:ListItem>
        <asp:ListItem Value="8">August</asp:ListItem>
        <asp:ListItem Value="9">September</asp:ListItem>
        <asp:ListItem Value="10">October</asp:ListItem>
        <asp:ListItem Value="11">November</asp:ListItem>
        <asp:ListItem Value="12">December</asp:ListItem>
      </asp:DropDownList> 
      <asp:DropDownList ID="ddlExpirationYear"
        runat="server">
      </asp:DropDownList>
    </td>
   </tr>
  </table>
 </asp:WizardStep>
</WizardSteps>

</asp:Wizard>
```
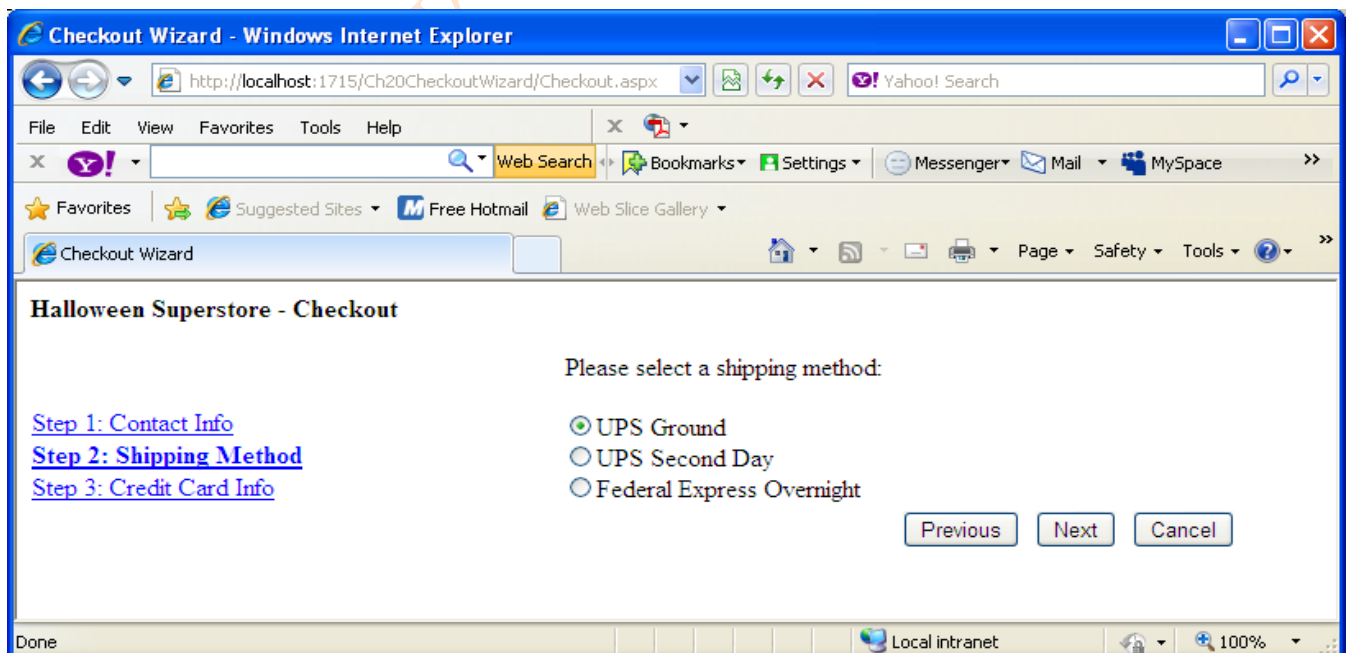
How to add a *Cancel* button

Figure below shows how to add a *Cancel* button to each step in a *Wizard* control. To do that, you set the *DisplayCancelButton* property of the wizard to *True*. Once you display the *Cancel* button, you can code an event handler to handle the *CancelButtonClick* event that occurs when the user clicks this button.

A *Wizard* with a *Cancel* button

A *Wizard* tag that displays a *Cancel* button

```
<asp:Wizard ID="wizCheckout" runat="server"  Width="739px"
    DisplayCancelButton="True"
    OnCancelButtonClick="wizCheckout_CancelButtonClick" >
```

C# code that works with the *Cancel* button

```
protected void wizCheckout_CancelButtonClick(object sender, EventArgs e)
{
    wizCheckout.ActiveStepIndex = 0;
    txtFirstName.Text = "";
    txtLastName.Text = "";
    txtEmail.Text = "";
    rdoUPSGround.Checked = true;
    rdoUPS2Day.Checked = false;
    rdoFedEx.Checked = false;
    lstCardType.SelectedIndex = 0;
    txtCardNumber.Text = "";

    ddlExpirationMonth.SelectedIndex = 0;

    ddlExpirationYear.SelectedIndex = 0;
}
```

How to add a completion step

Figure below shows how to add a fourth and final step to the wizard. This step is displayed when the user clicks on the *Finish* button in the third step. But first, the event handler that handles the *FinishButtonClick* event of the wizard is executed.
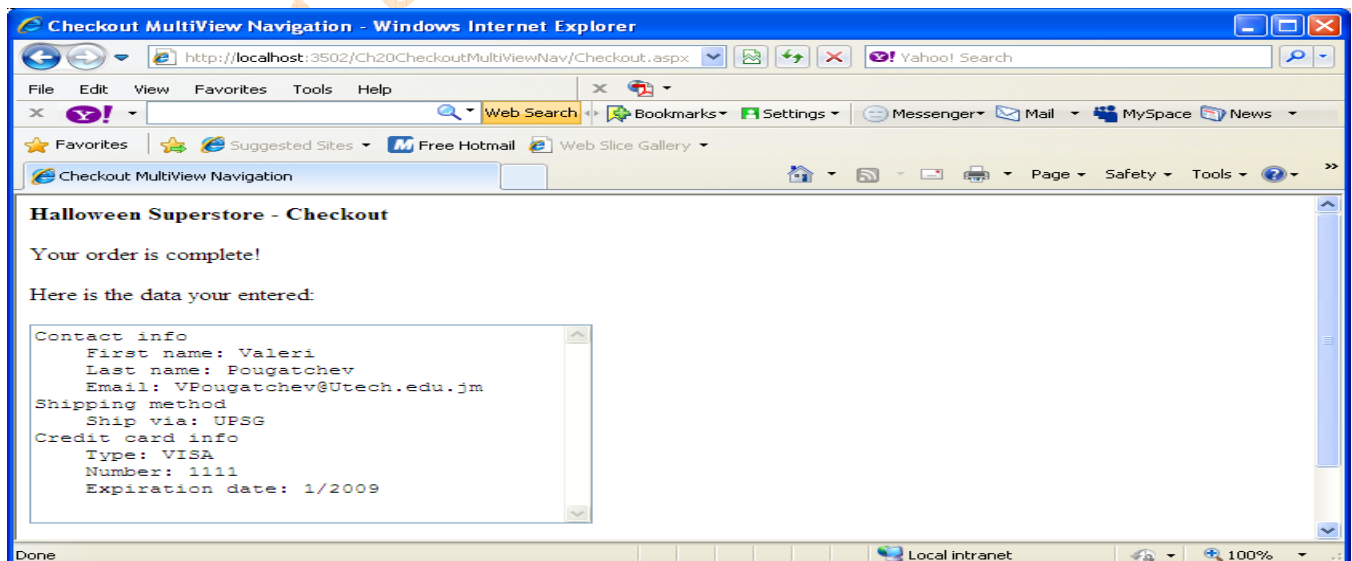
In this figure, this event handler calls the *DisplayMessage* method, which displays all of the data that's been entered in the first three steps in the multiline text box of the fourth step.

The *DisplayMessage* method called by this event handler contains the same code as the technique fo accessing the data that's stored in a *Wizard* control is the same as the technique for accessing the data that's stored in a *MultiView* control. That's because, like the *MultiView* control, the *Wizard* control stores its data in the view state for the page.

A *WizardStep* tag that defines a completion step

```
<asp:WizardStep ID="WizardStep4" runat="server" StepType="Complete"
      Title="Step 4: Complete">
               Congratulations. You have completed the Checkout wizard.<br /><br />
               Here is the data you entered:<br /><br />
       <asp:TextBox ID="txtMessage" runat="server" Height="166px"
               TextMode="MultiLine" Width="489px"></asp:TextBox>
</asp:WizardStep>
```

C# code that displays a message on the completion page

```
protected void wizCheckout_FinalButtonClick(object sender, WizardNavigationEventArgs e)
{
       this.DisplayMessage();
}

private void DisplayMessage()
{
  string shipVia = "";

  if (rdoUPSGround.Checked)
    shipVia = "UPSG";
  else if (rdoUPS2Day.Checked)
    shipVia = "UPS2D";
  else if (rdoFedEx.Checked)
    shipVia = "FEDEX";

  string message =
      "Contact info\n" +
      "   First name: " + txtFirstName.Text + "\n" +
      "   Last name: " + txtLastName.Text + "\n" +
      "   Email: " + txtEmail.Text + "\n" +
      "Shipping method\n" +
      "   Ship via: " + shipVia + "\n" +
      "Credit card info\n" +
      "   Type: " + lstCardType.SelectedValue + "\n" +
      "   Number: " + txtCardNumber.Text + "\n" +
      "   Expiration date: " + ddlExpirationMonth.SelectedValue + "/"
                + ddlExpirationYear.SelectedValue;
```

txtMessage.Text = message;
}

Possible values for the *StepType* attribute

Value	Description
Auto	Automatically sets the first step to *Start*, the last step to *Finish*, and any intermediate steps to *Step*. This is the default.
Start	Defines a step that doesn't have a *Previous* button.
Step	Defines a step that has *Previous* and *Next* buttons.
Finish	Defines a step that has *Previous* and *Finish* buttons.
Complete	Defines a step that doesn't have a side bar or any buttons. This step is typically used to display a completion message.

Properties and events of the *Wizard* and *WizardStep* controls

Properties of the *Wizard* control

| Property	Description
ActiveStepIndex	Gets or sets the index for the active page where 0 is the first page, 1 is the second page, and so on. By default, this property is set to the page that's selected in *Design* view.
DisplayCancelButton	To show a *Cancel* button on every step, you can set this property to *True*. The default is *False*.
DisplaySideBar	To hide the side bar, you can set this property to *False*. The default is *True*.

Events of the *Wizard* control

Event	Description
ActiveStepChanged	Fires every time the active step changes.
NextButtonClick	Fires every time a *Next* button is clicked.
PreviousButtonClick	Fires every time *Previous* button is clicked.
CancelButtonClick	Fires every time a *Cancel* button is clicked.
FinishButtonClick	Fires every time the *Finish* button is clicked.
SideBarButtonClick	Fires every time one of the side bar links is clicked.

Properties of the *WizardStep* control

Property	Description
StepType	Changes the types of buttons *(Previous, Next, Finish)* that are available for the step.
AllowReturn	To remove the *Previous* button from the step, you can set this property to *False*. The default value is *True*.

Using templates and styles with wizard

A *Wizard* control in template-editing mode
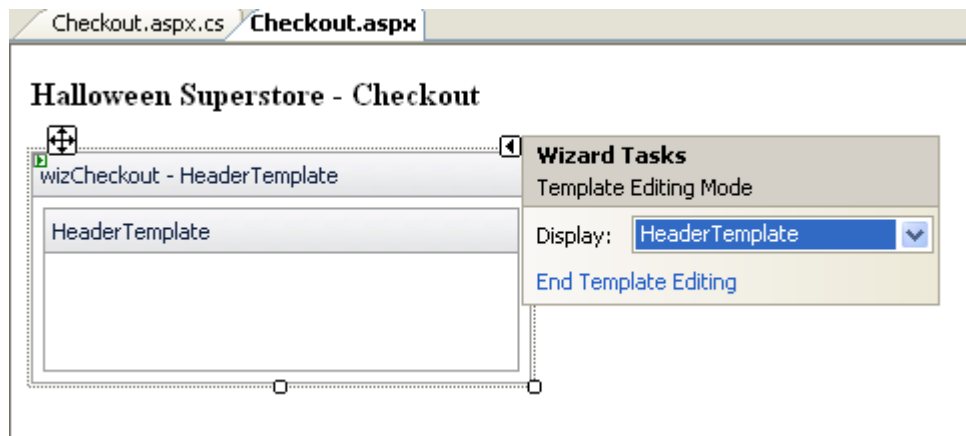
Aspx code for *Wizard* templates and styles

```
<asp:Wizard ID="wizCheckout" runat="server" >
      <StartNavigationTemplate>
            <asp:LinkButton ID="LinkButton1" runat="server" >Next
            </asp:LinkButton>

            <NavigationStyle HorizontalAlign="Left" />
            <SideBarStyle Font-Size=:Small" />

            <WizardSteps>
                  <!—wizard steps go here -->
            </WizardSteps>
      </StartNavigationTemplate>
</asp:Wizard>
```

Wizard templates and styles

Template	Style
HeadreTemplate	_HeaderStyle_
StartNavigationTemplate	_StartNextButtonStyle_
StepNavigationTemplate	_StepNextButtonStyle_
	StepPreviousButtonStyle
FinishnavigationTemplate	_FinishCompleteButtonStyle_
	FinishPreviousButtonStyle
SideBarTemplate	_SideBarButtonStyle_
	SideBarStyle
	CancelButtonStyle
	NavigationButtonStyle
	NavigationStyle