Agenda

1. *Overview of User Controls*
2. *Creating a User Control*
3. *Adding Properties to User Control*
4. *Adding Events to User Control*
5. *Using User Control in Web Form*
6. *Rendering Client Scripts using Page.ClientScript methods*

Overview of User Controls

1. Using User Control we can reuse both User Interface and Code at different places within the same Web Form or in different Web Forms of the same web application. It has the extension - **.ascx**
2. The **ascx** file has a **Control** directive and the class is inherited from "**System.Web.UI.UserControl**".
3. When a User Control is dragged and dropped onto the Web Form (design view), <%@Register directive is added to the Web Form with TagPrefix and TagName as attributes. For every instance of the User Control in the form, the tagprefix and tagname are used.
4. The Controls in User Control cannot be directly accessed in the Web Form thus for customizing the User Control, **public properties** must be added to it. These public properties in most of the circumstances wrap around the controls which are added to the User Control. In the Example below **RealName** is the wrapper around txtFirstName and txtLastName Text Property; **Caption** is the wrapper around lblCaption Text Property.
5. User control does not reflect change in properties in design view of the Web Form. The Properties of the User Control can be set by setting the attributes for the User Control tag used in Web Form.
6. When the controls in User Control are rendered to the web browser, the **Id** attribute of it is rendered as "X_Y", where X is Id of User Control as set in Web Form and Y is id of Control as set in User Control. The "Name" attribute is rendered as "X$Y". On server the client id of a control as rendered to be browser can be accessed using **ServerId.*ClientID*** *and Client side Name can be accessed using* ***ServerId.UniqueID***.

Example: To the project as UserControl by name HelloControl

User Control

```
<%@ Control Language="C#" AutoEventWireup="true"  CodeFile="HelloControl.ascx.cs" Inherits=" HelloControl" %>
<asp:Label ID="lblCaption" runat="server" Text="Name:"></asp:Label>
<asp:TextBox ID="txtFirstName" runat="server"/>
<asp:TextBox ID="txtLastName" runat="server"/>
```

Step 2:

HelloControls.acsx.cs: To this file add the following code.

```
public partial class HelloControl : System.Web.UI.UserControl
{
   //This event is raised when either FirstName or LastName is changed.
   public string RealName
   {
      get
      {
         return txtFirstName.Text + " " + txtLastName.Text;
      }
      set
      {
         txtFirstName.Text = value.Split(' ')[0];
         txtLastName.Text = value.Split(' ')[1];
      }
   }
   //The Following property is used in the Web Form to set the Text of Label.
   public string Caption
   {
      get
      {
         return lblCaption.Text;
      }
      set
```

```
    {
        lblCaption.Text = value;
    }
  }
}
```

Code: 1.5 | *C#*

Step 3: Add a Web Form to the Application (Default.aspx)

Step 4: Drag HelloUser Control from Solution explorer and on the design view of the Web Form. This adds the following to the Web Form (Default.aspx).

```
<%@ Register Src="HelloControl.ascx" TagName="HelloControl" TagPrefix="uc1" %>
```

Step 5: Add another User Control and change the Id to “hcName” and “hcFathersname”. Also add a button to the Web Form.

Using User Control

```
<uc1:HelloControl ID="hcName" runat="server" Caption=”Your Name” RealName="Test Test"/>
<uc1:HelloControl ID="hcFathersName" runat="server" RealName="Z Y" Caption="Fathers Name"/>
<asp:Button ID="btnSubmit" runat="server" Text="Submit" OnClick="btnSubmit_Click"/>
```

Step 6:

Handling btnSubmit click event

```
protected void btnSubmit_Click(object sender, EventArgs e)
{
   Response.Write(hcName.RealName);
   Response.Write("<br>" + hcFathersName.RealName);
}
```

Code: 1.5 | *C#*

Page.ClientScript Class

```
Page.ClientScript.RegisterClientScriptBlock(this.GetType(), "k1", "alert('demo')", true);
```

The above function renders the Javascript code (including the script tag) only once irrespective of number of times the above line is executed

This should be written in Page_Load event of User Control in situations where multiple instances of User Control will be included in the Web Form.