

Course 2D_SL: 2D-Computer Graphics with Silverlight Chapter C4: The Complete Code of the Controls Gallery Project

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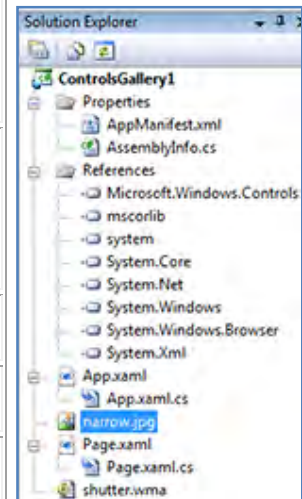
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Install 1) [Visual Web Developer 2008 Express Edition with Service Pack 1 English](#)
and 2) [Silverlight Tools for Visual Studio 2008 SP1](#)
and 3) [Silverlight Toolkit](#).

Preliminaries

Guidance for **Visual Web Developer 2008 Express**:

| | |
|---|--|
| 1 | Main Menu after start of VWD Express: File → New Project... → Project types: Visual C# (double click) → Silverlight → Templates: Silverlight Application Name: ControlsGallery1 → Location: C:\temp\SLProjects → Create directory for solution: switch off → OK. An Add Silverlight Application-Window appears. Choose "Automatically generate a test page to host Silverlight at build time" → OK. |
| 2 | In the Solution Explorer window right click branch References → Add Reference... → Tab Browse → Now you have to look where Silverlight Toolkit installed Microsoft.Windows.Controls.dll and select it. → Quit with OK and check whether Microsoft.Windows.Controls arrived as sub-branch of References. |
| 3 | Download the sound file shutter.wma and store it into the project directory C:\Temp\SLProjects\ControlsGallery1. |
| 4 | Download the image file narrow.jpg and store it into the project directory C:\Temp\SLProjects\ControlsGallery1. |
| 5 | In the Solution Explorer window right click the main branch ControlsGallery1 → Add → Existing Item... → Select both shutter.wma and narrow.jpg → Add and check if they arrived in the main branch ControlsGallery1. |
| 6 | In both Properties-windows of shutter.wma and narrow.jpg set the Build Action to Resource. |



In the Solution Explorer - ControlsGallery1 click the branch Page.xaml. A split window will appear where the lower part contains the default xaml code. Delete this code completely and replace it by the code of **Page.xaml** which follows.

Page.xaml

```

<UserControl x:Class="ControlsGallery1.Page"
  xmlns:controls="clr-
namespace:Microsoft.Windows.Controls;assembly=Microsoft.Windows.Controls"
  xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
  xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
  Width="400" Height="340" >
  <Border BorderBrush="Black" BorderThickness="2">
    <Grid ShowGridLines="True" Background="Silver">
      <Grid.ColumnDefinitions>
        <ColumnDefinition/>
        <ColumnDefinition/>
        <ColumnDefinition/>
        <ColumnDefinition/>
      </Grid.ColumnDefinitions>
      <Grid.RowDefinitions>
        <RowDefinition/>
        <RowDefinition/>
        <RowDefinition/>
        <RowDefinition/>
      </Grid.RowDefinitions>

      <!-- *****-->
      <!-- First column *****-->
      <!-- *****-->

      <!-- column 0, row 0 *****-->
      <Border Grid.Column="0" Grid.Row="0" Width="40" Height="40"
        BorderBrush="Black" BorderThickness="5" CornerRadius="6"
        ToolTipService.ToolTip=" I'm a Border around nothing."/>
      <!-- column 0, row 1 *****-->
      <Button Grid.Column="0" Grid.Row="1" Height="20" Margin="5"
        Content="Button" VerticalAlignment="Top" Click="Button_Click"
        ToolTipService.ToolTip=" I'm a useless Button."/>
      <RepeatButton Grid.Column="0" Grid.Row="1" Height="20" Margin="5"
        Content="RepeatButton" VerticalAlignment="Center"
        Interval="100" Click="Button_Click"
        ToolTipService.ToolTip=" I raise 10 Click events per second."/>
      <HyperlinkButton Grid.Column="0" Grid.Row="1" Margin="5" Click="Button_Click"
        Content="Hyperlink" HorizontalAlignment="Center" VerticalAlignment="Bottom"
        ToolTipService.ToolTip=" I'm an unlinked HyperlinkButton."/>
      <!-- column 0, row 2 *****-->
      <CheckBox Grid.Column="0" Grid.Row="2" Content="CheckBox"
        HorizontalAlignment="Center" Margin="0,15,0,0"/>
      <CheckBox Grid.Column="0" Grid.Row="2" Content="CheckBox"
        HorizontalAlignment="Center" VerticalAlignment="Bottom" Margin="0,0,0,15"/>
      <!-- column 0, row 3 *****-->
      <RadioButton Grid.Column="0" Grid.Row="3" Content="RadioButton"
        HorizontalAlignment="Center" Margin="5"/>
      <RadioButton Grid.Column="0" Grid.Row="3" Content="RadioButton"
        HorizontalAlignment="Center" VerticalAlignment="Center"/>
      <RadioButton Grid.Column="0" Grid.Row="3" Content="RadioButton"
        HorizontalAlignment="Center" VerticalAlignment="Bottom" Margin="5"/>

      <!-- *****-->
      <!-- Second column *****-->
      <!-- *****-->

      <!-- column 1, row 0 *****-->
      <Rectangle Grid.Column="1" Grid.Row="0" Stroke="Black" Fill="Cornsilk"
        Width="60" Height="60"
        ToolTipService.ToolTip=" I'm a Rectangle."/>
      <Ellipse Grid.Column="1" Grid.Row="0" Stroke="Red" Fill="Lavender"
        Width="50" Height="50"
        ToolTipService.ToolTip=" I'm an Ellipse inside a Rectangle."/>

```

```

<!-- column 1, row 1 *****-->
<!-- The ComboBox header shows the selected ComboBoxItem -->
<ComboBox Grid.Column="1" Grid.Row="1" Height="20" Margin="5"
    VerticalAlignment="Top"
    ToolTipService.ToolTip=" I'm a ComboBox with 3 ComboBoxItems.">
    <ComboBoxItem Content="Item1" Height="16" FontSize="9"/>
    <ComboBoxItem Content="Item2" Height="16" FontSize="9"/>
    <ComboBoxItem Content="ComboBox" Height="16" FontSize="9" IsSelected="True"/>
</ComboBox>
<!-- Expander is part of the Silverlight Toolkit namespace:Microsoft.Windows.Controls -->
<controls:Expander x:Name="Expander1" Grid.Column="1" Grid.Row="1" Margin="0,5,0,0"
    HorizontalAlignment="Center" VerticalAlignment="Center"
    ExpandDirection="Down" Header="Expander">
    <TextBox TextWrapping="Wrap" FontSize="8"
        Text="I'm so expanded. Please collapse me!"/>
</controls:Expander>
<!-- Popup depends on 2 events of an associated control TextBlock -->
<Popup x:Name="Popup" HorizontalOffset="410" VerticalOffset="90">
    <TextBlock Width="100" TextWrapping="Wrap" Foreground="Red"
        Text="This is a Popup with simple text.
            A Popup can also contain complex content such as images."/>
</Popup>
<TextBlock Grid.Column="1" Grid.Row="1" Text="Pop me up !"
    Foreground="Tomato" Margin="5"
    HorizontalAlignment="Center" VerticalAlignment="Bottom"
    MouseEnter="Open_Popup" MouseLeave="Close_Popup"/>
<!-- column 1, row 2 *****-->
<ListBox Grid.Column="1" Grid.Row="2" Margin="3,5,3,5"
    ToolTipService.ToolTip=" I'm a ListBox with 5 selectable ListBoxItems.">
<ListBoxItem Content="ListBoxItem 1" Height="16" FontSize="9"/>
<ListBoxItem Content="ListBoxItem 2" Height="16" FontSize="9"/>
<ListBoxItem Content="ListBoxItem 3" Height="16" FontSize="9"/>
<ListBoxItem Content="ListBoxItem 4" Height="16" FontSize="9"/>
<ListBoxItem Content="ListBoxItem 5" Height="16" FontSize="9"/>
</ListBox>
<!-- column 1, row 3 *****-->
<!-- AutoCompleteBox is part of the Silverlight Toolkit namespace:Microsoft.Windows.Controls-->
<!-- It must be initialized by code behind with an array of strings -->
<StackPanel Grid.Column="1" Grid.Row="3">
    <TextBlock Text="AutoCompleteBox" FontSize="10" HorizontalAlignment="Center"/>
    <TextBlock Text="Type in:" FontSize="10" HorizontalAlignment="Center"/>
    <TextBlock Text="'a', 'A', 'b' or 'B'" FontSize="10" HorizontalAlignment="Center"/>
    <controls:AutoCompleteBox x:Name="AutoCompleteBox" Margin="5,0,5,0"
        Text="Type here!"/>
</StackPanel>
<!--*****-->
<!-- Third column *****-->
<!--*****-->

<!-- column 2, row 0 *****-->
<Slider Grid.Column="2" Grid.Row="0" Background="Gray" Width="70" Margin="5"
    HorizontalAlignment="Center" VerticalAlignment="Top"
    ToolTipService.ToolTip=" I'm a Slider."/>
<ScrollBar Grid.Column="2" Grid.Row="0" Width="70" Margin="10"
    Orientation="Horizontal"
    HorizontalAlignment="Center" VerticalAlignment="Center"
    ToolTipService.ToolTip=" I'm a ScrollBar."/>
<!-- ProgressBar entertains the user during a time consuming process-->
<ProgressBar Grid.Column="2" Grid.Row="0" Width="70" Height="10" Margin="10"
    HorizontalAlignment="Center" VerticalAlignment="Bottom"
    Value="50" BorderBrush="Black" Foreground="Green"
    ToolTipService.ToolTip=" I'm a ProgressBar."/>
<!-- column 2, row 1 *****-->
<!-- same as above but vertical. ProgressBar can't be drawn vertically -->
<Slider Grid.Column="2" Grid.Row="1" Background="Gray"
    Height="70" Margin="20,0,0,0" Orientation="Vertical"
    HorizontalAlignment="Left" VerticalAlignment="Center"
    ToolTipService.ToolTip=" I'm a Slider."/>
<ScrollBar Grid.Column="2" Grid.Row="1" Height="70" Margin="0,0,20,0"
    Orientation="Vertical"
    HorizontalAlignment="Right" VerticalAlignment="Center"
    ToolTipService.ToolTip=" I'm a ScrollBar."/>

```

```

<!-- column 2, row 2 *****-->
<!-- ContentControl offers the simplest way to draw unformatted text. -->
<ContentControl Grid.Column="2" Grid.Row="2" Margin="0,5,0,0"
    Content="ContentControl" FontStyle="Italic"
    HorizontalAlignment="Center" VerticalAlignment="Top"
    TooltipService.ToolTip="I'm a simple ContentControl."/>
<!-- TextBlock draws formatted text. -->
<TextBlock Grid.Column="2" Grid.Row="2" Margin="0,0,0,10"
    Text="TextBlock" FontWeight="Bold"
    HorizontalAlignment="Center" VerticalAlignment="Center"
    TooltipService.ToolTip=" TextBlock for unformatted text."/>
<!-- TextBox can receive text from the keyboard. -->
<TextBox Grid.Column="2" Grid.Row="2" Margin="5" Text="Edit Me !"
    HorizontalAlignment="Center" VerticalAlignment="Bottom"
    TooltipService.ToolTip="I'm an editable TextBox."/>

<!-- column 2, row 3 *****-->
<!-- TreeView is part of the Silverlight Toolkit namespace:Microsoft.Windows.Controls -->
<!-- I wrapped it by an InkPresenter (see column 3, row 2) to prevent clipping -->
<InkPresenter Grid.Column="2" Grid.Row="3">
    <controls:TreeView Grid.Column="2" Grid.Row="2" FontSize="9">
        <controls:TreeViewItem Header="Level 0" IsExpanded="True" Foreground="Red">
            <controls:TreeViewItem Header="Level 1" IsExpanded="True" Foreground="Green">
                <controls:TreeViewItem Header="Lev 2" IsExpanded="True" Foreground="Blue">
                    </controls:TreeViewItem>
                </controls:TreeViewItem>
            </controls:TreeViewItem>
        </controls:TreeViewItem>
    </controls:TreeView>
    <TextBlock Text=" TreeView"/>
</InkPresenter>

<!--*****-->
<!-- Fourth column *****-->
<!--*****-->

<!-- column 3, row 0 *****-->
<!-- Grid overlays multiple contents by calling ContentPresenter for each of them -->
<Grid Grid.Column="3" Grid.Row="0" Margin="5">
    <Image Source="narrow.jpg"/>
    <TextBlock Text="ContentPresenter" FontSize="10"/>
</Grid>

<!-- column 3, row 1 *****-->
<ScrollViewer Grid.Column="3" Grid.Row="1" Margin="5,0,5,0"
    TooltipService.ToolTip="I'm a ScrollViewer.">
    <Image Source="narrow.jpg"/>
</ScrollViewer>

<!-- column 3, row 2 *****-->
<!-- InkPresenter draws its multiple content 1:1 without any alignment nor clipping -->
<InkPresenter Grid.Column="3" Grid.Row="2" Margin="5">
    <Image Source="narrow.jpg"/>
    <TextBlock Text="InkPresenter"/>
</InkPresenter>
<!-- end of main grid *****-->
</Grid>
</Border>
</UserControl>

```

Page.xaml.cs

```

using System;
using System.Windows;
using System.Windows.Controls;
using System.Windows.Media;
using System.Windows.Resources;

namespace ControlsGallery1
{
    public partial class Page : UserControl
    {
        MediaElement ME = new MediaElement();

        public Page()
        {
            InitializeComponent();
            //Load sound resource file for future use by
            //Button, RepeatButton and Hyperlink of column 0, row 1
            Uri U = new Uri( "ControlsGallery1;component/shutter.wma", UriKind.Relative );
            StreamResourceInfo sr = Application.GetResourceStream( U );
            ME.SetSource( sr.Stream );
            ME.AutoPlay = false;
            ME.Volume = 1;
            //Load word array for future use by the AutoCompleteBox of column 2, row 3
            AutoCompleteBox.ItemsSource = new string[]
            { "Adam", "Albert", "Adolph", "Betty", "Berta", "Bernhard", "Billy" };
        }

        //2 events of TextBlock "Pop me up !" of column 1, row 1
        private void Open_Popup ( object sender, RoutedEventArgs e )
        {
            Popup.IsOpen=true;
        }
        private void Close_Popup( object sender, RoutedEventArgs e )
        {
            Popup.IsOpen=false;
        }

        //common event of Button, RepeatButton and Hyperlink of column 0, row 1
        private void Button_Click( object sender, RoutedEventArgs e )
        {
            if ( ME.CurrentState == MediaElementState.Playing ) return;
            ME.Stop();
            ME.Play();
        }
    }
}

```

Main menu of Visual Web Developer 2008 Express → Debug → Start Debugging F5 or → Debug → Start Without Debugging Ctrl+F5.

Links

German video tutorials by Philipp Bauknecht:

[Slider](#), [ScrollView](#), [StackBanel](#), [RadioButton](#), [ListBox](#), [Grid](#), [TextBlock](#)

English mini tutorials:

| | |
|-----------------------------------|--|
| Border | ListBox |
| Button | Toolkit: AutoCompleteBox |
| RepeatButton | Slider |
| HyperlinkButton | ScrollBar |
| CheckBox | ProgressBar |
| RadioButton | ContentControl |
| Rectangle | TextBlock |
| Ellipse | TextBox |
| ComboBox | Toolkit: TreeView |
| Toolkit: Expander | InkPresenter |
| Popup | |