GUI на WPF
Часть 2

Юрий Литвинов
yurii.litvinov@gmail.com

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Команды

- ▶ Интерфейс ICommand:
    - ▶ Execute
    - ▶ CanExecute
    - ▶ CanExecuteChanged
- ▶ Свойство Command
- ▶ Большой набор встроенных команд
- ▶ Класс CommandBinding

```xml
<Window.CommandBindings>
  <CommandBinding Command="Help"
    CanExecute="HelpCanExecute" Executed="HelpExecuted"/>
</Window.CommandBindings>
  ...
  <Button MinWidth="75" Margin="10" Command="Help" Content=
    "{Binding RelativeSource={RelativeSource Self}, Path=Command.Text}"/>
```

Валидация

```
public class JpgValidationRule : ValidationRule
{
    public override ValidationResult Validate(object value, CultureInfo cultureInfo)
    {
        string filename = value.ToString();
        if (!File.Exists(filename))
            return new ValidationResult(false, "Value is not a valid file.");
        if (!filename.EndsWith(".jpg", StringComparison.InvariantCultureIgnoreCase))
            return new ValidationResult(false, "Value is not a .jpg file.");
        return new ValidationResult(true, null);
    }
}


<TextBox>
  <TextBox.Text>
    <Binding ...>
      <Binding.ValidationRules>
        <local:JpgValidationRule/>
      </Binding.ValidationRules>
    </Binding>
  </TextBox.Text>
</TextBox>
```

Стили

```xml
<StackPanel Orientation="Horizontal">
  <StackPanel.Resources>
    <Style x:Key="buttonStyle">
      <Setter Property="Button.FontSize" Value="22"/>
      <Setter Property="Button.Background" Value="Purple"/>
      <Setter Property="Button.Foreground" Value="White"/>
      <Setter Property="Button.Height" Value="50"/>
      <Setter Property="Button.Width" Value="50"/>
      <Setter Property="Button.RenderTransformOrigin" Value=".5,.5"/>
      <Setter Property="Button.RenderTransform">
        <Setter.Value>
          <RotateTransform Angle="10"/>
        </Setter.Value>
      </Setter>
    </Style>
  </StackPanel.Resources>
  <Button Style="{StaticResource buttonStyle}">1</Button>
  <Button Style="{StaticResource buttonStyle}">2</Button>
  <Button Style="{StaticResource buttonStyle}">3</Button>
</StackPanel>
```

Неявное применение стиля

```xml
<Application ...>
  <Application.Resources>
    <Style TargetType="{x:Type Button}">
      <Setter Property="FontSize" Value="22"/>
      <Setter Property="Background" Value="Purple"/>
      <Setter Property="Foreground" Value="White"/>
      <Setter Property="Height" Value="50"/>
      <Setter Property="Width" Value="50"/>
      <Setter Property="RenderTransformOrigin" Value=".5,.5"/>
      <Setter Property="RenderTransform">
        <Setter.Value>
          <RotateTransform Angle="10"/>
        </Setter.Value>
      </Setter>
    </Style>
  </Application.Resources>
</Application>
```

Триггеры

```xml
<Style x:Key="buttonStyle" TargetType="{x:Type Button}">
  <Style.Triggers>
    <Trigger Property="IsMouseOver" Value="True">
      <Setter Property="RenderTransform">
        <Setter.Value>
          <RotateTransform Angle="10"/>
        </Setter.Value>
      </Setter>
      <Setter Property="Foreground" Value="Black"/>
    </Trigger>
  </Style.Triggers>
  <Setter Property="FontSize" Value="22"/>
  <Setter Property="Background" Value="Purple"/>
  <Setter Property="Foreground" Value="White"/>
  <Setter Property="Height" Value="50"/>
  <Setter Property="Width" Value="50"/>
  <Setter Property="RenderTransformOrigin" Value=".5,.5"/>
</Style>
```

Триггеры на значения свойств

Data Triggers

```xml
<StackPanel Width="200">
  <StackPanel.Resources>
    <Style TargetType="{x:Type TextBox}">
      <Style.Triggers>
        <DataTrigger
          Binding="{Binding RelativeSource={RelativeSource Self}, Path=Text}"
          Value="disabled">
          <Setter Property="IsEnabled" Value="False"/>
        </DataTrigger>
      </Style.Triggers>
      <Setter Property="Background"
        Value="{Binding RelativeSource={RelativeSource Self}, Path=Text}"/>
    </Style>
  </StackPanel.Resources>
  <TextBox Margin="3"/>
</StackPanel>
```
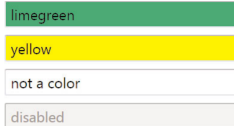
Шаблоны

Templates

```xml
<Grid>
  <Grid.Resources>
    <ControlTemplate x:Key="buttonTemplate">
      <Grid>
        <Ellipse Width="100" Height="100">
          <Ellipse.Fill>
            <LinearGradientBrush StartPoint="0,0" EndPoint="0,1">
              <GradientStop Offset="0" Color="Blue"/>
              <GradientStop Offset="1" Color="Red"/>
            </LinearGradientBrush>
          </Ellipse.Fill>
        </Ellipse>
        <Ellipse Width="80" Height="80">
          <Ellipse.Fill>
            <LinearGradientBrush StartPoint="0,0" EndPoint="0,1">
              <GradientStop Offset="0" Color="White"/>
              <GradientStop Offset="1" Color="Transparent"/>
            </LinearGradientBrush>
          </Ellipse.Fill>
        </Ellipse>
      </Grid>
    </ControlTemplate>
  </Grid.Resources>
  <Button Template="{StaticResource buttonTemplate}">OK</Button>
</Grid>
```

Сохранение свойств элемента

```xml
<Viewbox>
  <ContentControl Margin="20" Content="{TemplateBinding Content}"/>
</Viewbox>

...
<LinearGradientBrush StartPoint="0,0" EndPoint="0,1">
  <GradientStop Offset="0"
    Color="{Binding RelativeSource={RelativeSource TemplatedParent},
    Path=Background.Color}"/>
  <GradientStop Offset="1" Color="Red"/>
</LinearGradientBrush>
```

Ресурсы

```xml
<Window ...>
  <Window.Resources>
    <SolidColorBrush x:Key="backgroundBrush">Yellow</SolidColorBrush>
    <SolidColorBrush x:Key="borderBrush">Red</SolidColorBrush>
  </Window.Resources>
  <Window.Background>
    <StaticResource ResourceKey="backgroundBrush"/>
  </Window.Background>
  <DockPanel>
    <StackPanel DockPanel.Dock="Bottom" Orientation="Horizontal"
      HorizontalAlignment="Center">
    <Button Background="{StaticResource backgroundBrush}"
      BorderBrush="{StaticResource borderBrush}" Margin="5">
      <Image Height="21" Source="zoom.gif"/>
    </Button>
  </DockPanel>
</Window>
```

Data Providers

```xml
<Window xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
        xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
        Title="XML Data Binding">
  <Window.Resources>
    <XmlDataProvider x:Key="dataProvider" XPath="GameStats">
      <x:XData>
        <GameStats xmlns="">
          <!-- One stat per game type -->
          <GameStat Type="Beginner">
            <HighScore>1203</HighScore>
          </GameStat>
          <GameStat Type="Intermediate">
            <HighScore>1089</HighScore>
          </GameStat>
          <GameStat Type="Advanced">
            <HighScore>541</HighScore>
          </GameStat>
        </GameStats>
      </x:XData>
    </XmlDataProvider>
  </Window.Resources>
  <Grid>
    <ListBox ItemsSource="{Binding Source={StaticResource dataProvider},
      XPath=GameStat/HighScore}" />
  </Grid>
</Window>
```

XML data island

Binding to the XML

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