Лабораторная работа № 5.
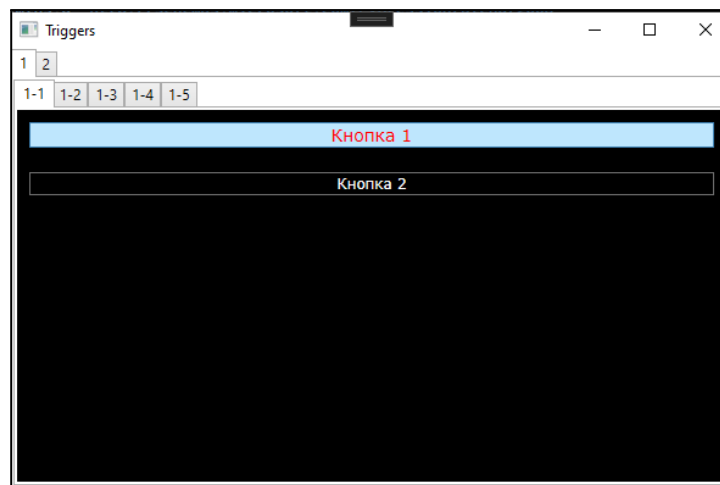
Тема: «WPF. Триггеры. Шаблоны.»

Задание 1.1. Триггеры свойств.

```xml
<StackPanel Background="Black">
    <Button x:Name="button1" Content="Кнопка 1" Style="{StaticResource Style_1-1}"/>
    <Button x:Name="button2" Content="Кнопка 2" Style="{StaticResource Style_1-1}"/>
</StackPanel>
```

```xml
<Style x:Key="Style_1-1" TargetType="Button">
    <Style.Setters>
        <Setter Property="Button.Background" Value="Black"/>
        <Setter Property="Button.Foreground" Value="White"/>
        <Setter Property="Button.FontFamily" Value="Verdana"/>
        <Setter Property="Button.Margin" Value="10"/>
    </Style.Setters>
    <Style.Triggers>
        <Trigger Property="IsMouseOver" Value="True">
            <Setter Property="FontSize" Value="14"/>
            <Setter Property="Foreground" Value="Red"/>
        </Trigger>
    </Style.Triggers>
</Style.Triggers>
```


Задание 1.2. MultiTrigger.

```xml
<TabItem Header="1-2">
    <StackPanel Background="Black">
        <Button x:Name="button3" Content="Кнопка 1" Style="{StaticResource Style_1-2}"/>
        <Button x:Name="button4" Content="Кнопка 2" Style="{StaticResource Style_1-2}"/>
    </StackPanel>
</TabItem>
```

```xml
<Style x:Key="Style_1-2" TargetType="Button">
    <Style.Setters>
        <Setter Property="Button.Background" Value="Black"/>
        <Setter Property="Button.Foreground" Value="White"/>
        <Setter Property="Button.FontFamily" Value="Verdana"/>
        <Setter Property="Button.Margin" Value="10"/>
    </Style.Setters>
    <Style.Triggers>
        <MultiTrigger>
            <MultiTrigger.Conditions>
                <Condition Property="IsMouseOver" Value="True"/>
                <Condition Property="IsPressed" Value="True"/>
            </MultiTrigger.Conditions>
            <MultiTrigger.Setters>
                <Setter Property="FontSize" Value="14"/>
                <Setter Property="Foreground" Value="Red"/>
            </MultiTrigger.Setters>
        </MultiTrigger>
    </Style.Triggers>
</Style>
```
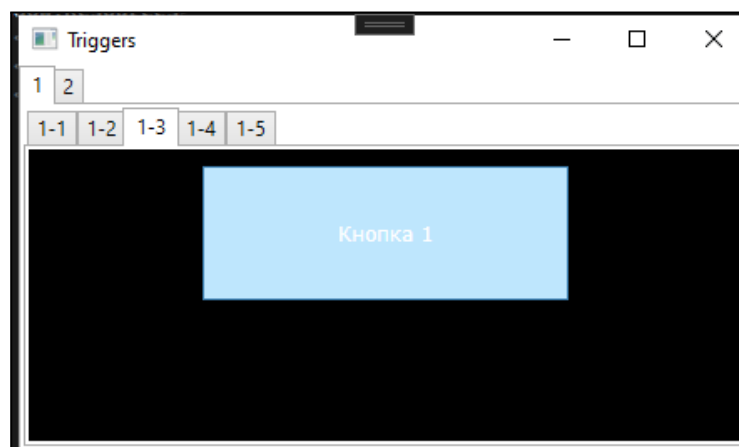

Задание 1.3. EventTrigger

```xml
<TabItem Header="1-3">
    <StackPanel Background="Black">
        <Button Style="{StaticResource Style_1-3}" x:Name="button5" Width="100" Height="30" Content="Кнопка 1"/>
    </StackPanel>
</TabItem>
```

```xml
<Style x:Key="Style_1-3" TargetType="Button">
    <Style.Setters>
        <Setter Property="Button.Background" Value="Black"/>
        <Setter Property="Button.Foreground" Value="White"/>
        <Setter Property="Button.FontFamily" Value="Verdana"/>
        <Setter Property="Button.Margin" Value="10"/>
    </Style.Setters>
    <Style.Triggers>
        <EventTrigger RoutedEvent="Click">
            <EventTrigger.Actions>
                <BeginStoryboard>
                    <Storyboard>
                        <DoubleAnimation Storyboard.TargetProperty="Width" Duration="0:0:1" To="220" AutoReverse="True"/>
                        <DoubleAnimation Storyboard.TargetProperty="Height" Duration="0:0:1" To="80" AutoReverse="True"/>
                    </Storyboard>
                </BeginStoryboard>
            </EventTrigger.Actions>
        </EventTrigger>
    </Style.Triggers>
</Style>
```
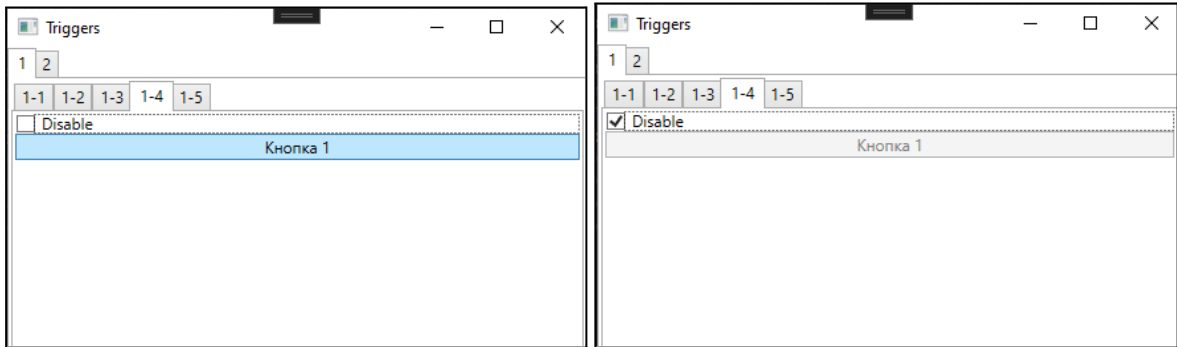

Задание 1.4. DataTrigger.

```xml
<TabItem Header="1-4">
    <StackPanel>
        <CheckBox x:Name="checkBox1" Content="Disable"/>
        <Button x:Name="button6" Content="Кнопка 1" Style="{StaticResource Style_1-4}"/>
    </StackPanel>
</TabItem>
```

```xml
<Style x:Key="Style_1-4" TargetType="Button">
    <Style.Triggers>
        <DataTrigger Binding="{Binding ElementName=checkBox1, Path=IsChecked}" Value="True">
            <Setter Property="IsEnabled" Value="False"/>
        </DataTrigger>
    </Style.Triggers>
</Style>
```
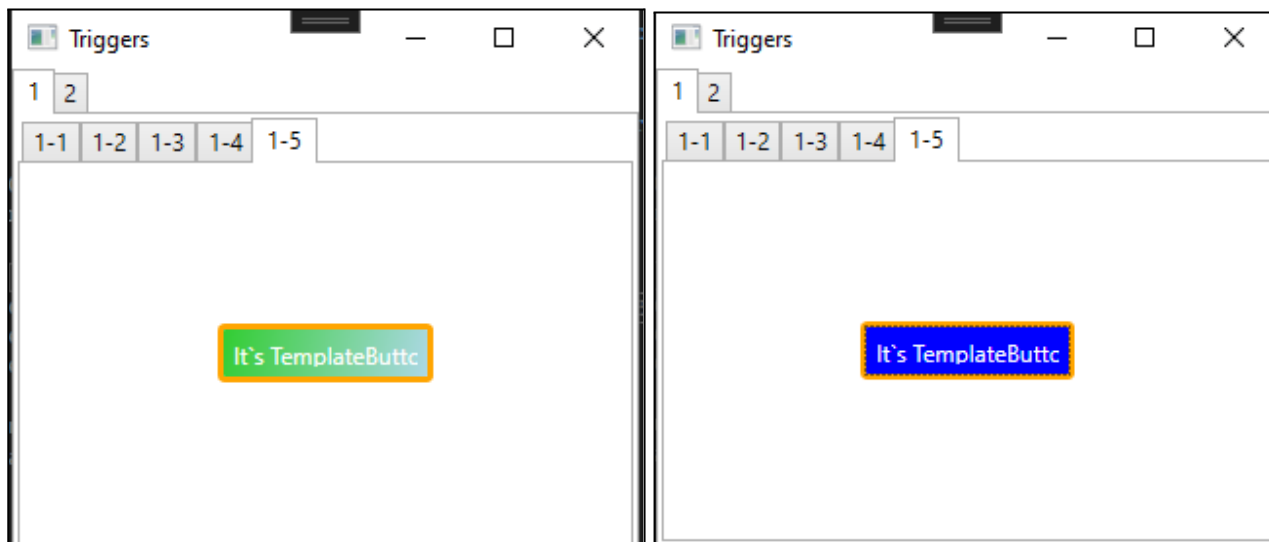
Задание 1.5. Привязки шаблона

```xml
<TabItem Header="1-5">
    <Button Margin="10" Width="110" Padding="5" Height="30" Template="{StaticResource Style_1-5}" Content="It's TemplateButton"/>
</TabItem>
```

```xml
<ControlTemplate x:Key="Style_1-5" TargetType="Button">
    <Border Name="border" BorderBrush="Orange" BorderThickness="3" CornerRadius="2" TextBlock.Foreground="White">
        <Border.Background>
            <LinearGradientBrush>
                <GradientStop Offset="0" Color="LimeGreen"/>
                <GradientStop Offset="1" Color="LightBlue"/>
            </LinearGradientBrush>
        </Border.Background>
        <Grid>
            <Rectangle Name="FocusCue" Visibility="Hidden" Stroke="Black" StrokeThickness="1.5" StrokeDashArray="1 2" SnapsToDevicePixels="True"
                       Margin="{TemplateBinding Padding}"/>
            <ContentPresenter RecognizesAccessKey="True" Margin="{TemplateBinding Padding}"/>
        </Grid>
    </Border>
    <ControlTemplate.Triggers>
        <EventTrigger RoutedEvent="MouseEnter">
            <BeginStoryboard>
                <Storyboard>
                    <ColorAnimation Storyboard.TargetName="border" Duration="0:0:1" Storyboard.TargetProperty="Background.Color" To="Blue"/>
                </Storyboard>
            </BeginStoryboard>
        </EventTrigger>
        <EventTrigger RoutedEvent="MouseLeave">
            <BeginStoryboard>
                <Storyboard>
                    <ColorAnimation Storyboard.TargetName="border" Duration="0:0:0.5" Storyboard.TargetProperty="Background.Color"/>
                </Storyboard>
            </BeginStoryboard>
        </EventTrigger>
        <Trigger Property="IsMouseOver" Value="True">
            <Setter TargetName="border" Property="Background" Value="Red"/>
        </Trigger>
        <Trigger Property="IsPressed" Value="True">
            <Setter TargetName="border" Property="BorderBrush" Value="Yellow"/>
        </Trigger>
    </ControlTemplate.Triggers>
</ControlTemplate>
```
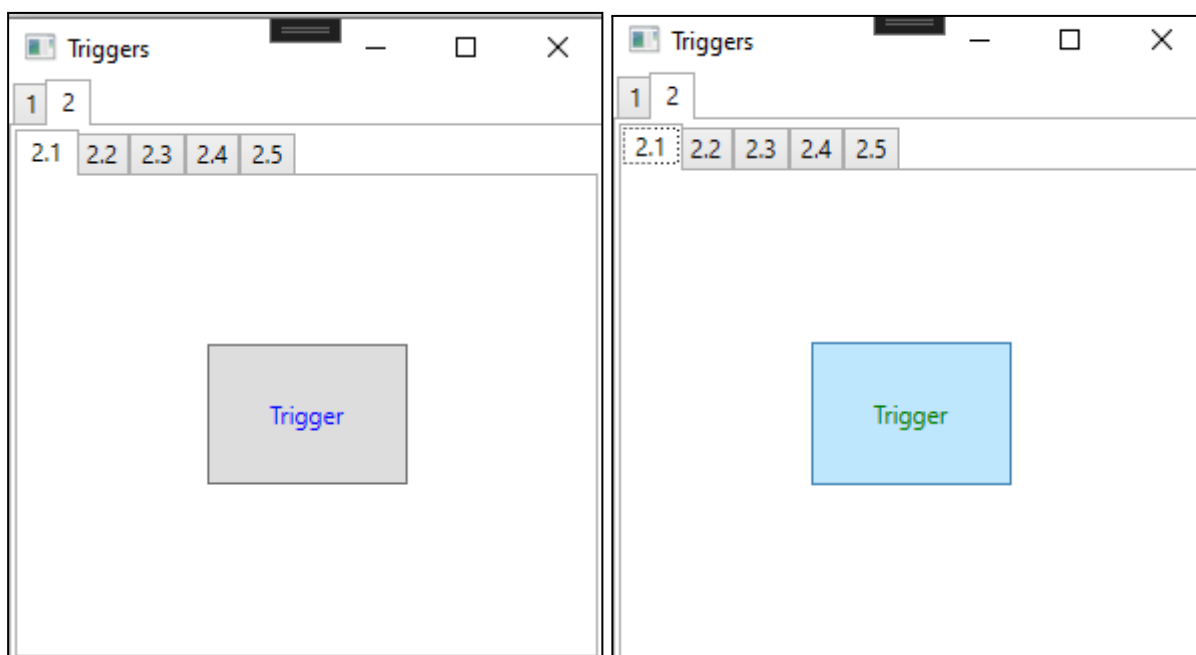
Задание 2.1. Триггеры свойств.

```xml
<TabItem Header="2.1">
    <Grid>
        <Button Width="100" Height="70" Style="{StaticResource TriggerStyle}" Content="Trigger"/>
    </Grid>
</TabItem>
```
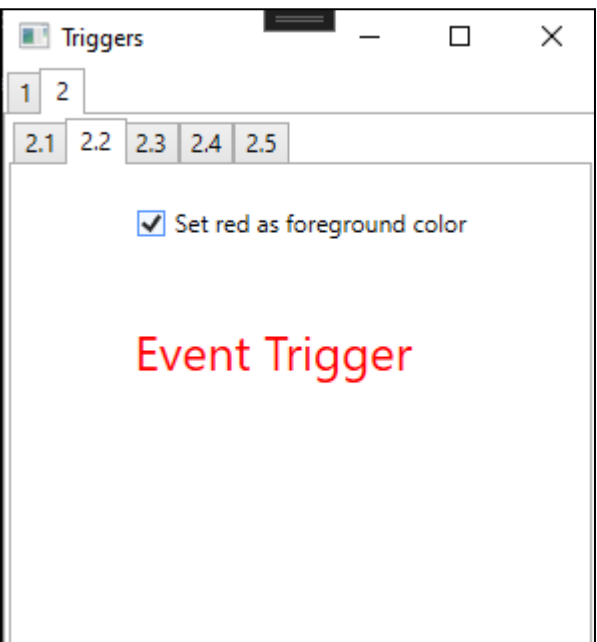
```xml
<Style x:Key="TriggerStyle" TargetType="Button">
    <Setter Property="Foreground" Value=■"Blue"/>
    <Style.Triggers>
        <Trigger Property="IsMouseOver" Value="True">
            <Setter Property="Foreground" Value=■"Green"/>
        </Trigger>
    </Style.Triggers>
</Style>
```

Задание 2.2

```xml
<TabItem Header="2.2">
    <Grid>
        <StackPanel HorizontalAlignment="Center">
            <CheckBox x:Name="redColorCheckBox" Content="Set red as foreground color" Margin="20"/>
            <TextBlock Name="txtblock" VerticalAlignment="Center" Text="Event Trigger" FontSize="24" Margin="20">
                <TextBlock.Style>
                    <Style>
                        <Style.Triggers>
                            <DataTrigger Binding="{Binding ElementName=redColorCheckBox, Path=IsChecked}" Value="true">
                                <Setter Property="TextBlock.Foreground" Value="Red"/>
                                <Setter Property="TextBlock.Cursor" Value="Hand"/>
                            </DataTrigger>
                        </Style.Triggers>
                    </Style>
                </TextBlock.Style>
            </TextBlock>
        </StackPanel>
    </Grid>
</TabItem>
```
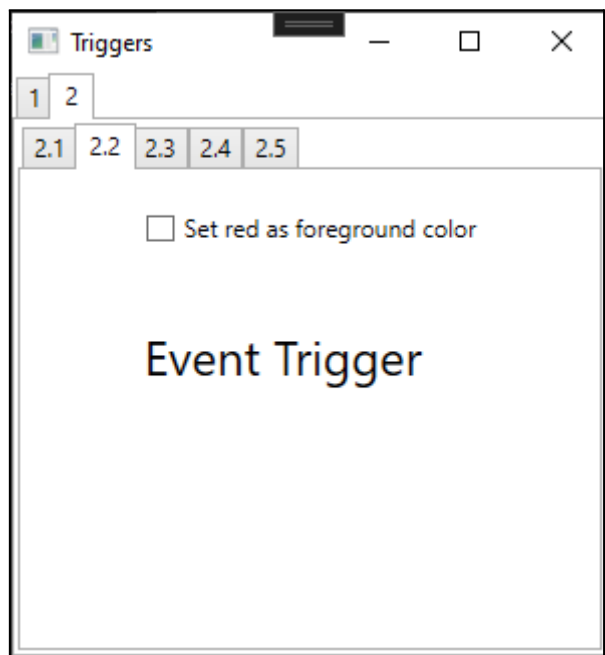

Задание 2.3

```xml
<TabItem Header="2.3">
    <Grid>
        <Button Content="Click Me" Width="60" Height="30">
            <Button.Triggers>
                <EventTrigger RoutedEvent="Button.Click">
                    <EventTrigger.Actions>
                        <BeginStoryboard>
                            <Storyboard>
                                <DoubleAnimationUsingKeyFrames Storyboard.TargetProperty="Width" Duration="0:0:4">
                                    <LinearDoubleKeyFrame Value="60" KeyTime="0:0:0"/>
                                    <LinearDoubleKeyFrame Value="120" KeyTime="0:0:1"/>
                                    <LinearDoubleKeyFrame Value="200" KeyTime="0:0:2"/>
                                    <LinearDoubleKeyFrame Value="300" KeyTime="0:0:3"/>
                                </DoubleAnimationUsingKeyFrames>
                                <DoubleAnimationUsingKeyFrames Storyboard.TargetProperty="Height" Duration="0:0:4">
                                    <LinearDoubleKeyFrame Value="30" KeyTime="0:0:0"/>
                                    <LinearDoubleKeyFrame Value="40" KeyTime="0:0:1"/>
                                    <LinearDoubleKeyFrame Value="80" KeyTime="0:0:2"/>
                                    <LinearDoubleKeyFrame Value="150" KeyTime="0:0:3"/>
                                </DoubleAnimationUsingKeyFrames>
                            </Storyboard>
                        </BeginStoryboard>
                    </EventTrigger.Actions>
                </EventTrigger>
            </Button.Triggers>
        </Button>
    </Grid>
</TabItem>
```

Задание 2.4

```xml
<TabItem Header="2.4">
    <Grid>
        <StackPanel>
            <Button Content="Round Button!" Template="{StaticResource ButtonTemplate}" Width="150" Margin="50"/>
            <Button Content="Default Button!" Height="40" Width="150" Margin="5"/>
        </StackPanel>
    </Grid>
</TabItem>
```

```xml
<ControlTemplate x:Key="ButtonTemplate" TargetType="Button">
    <Grid>
        <Ellipse x:Name="ButtonEllipse" Height="100" Width="150">
            <Ellipse.Fill>
                <LinearGradientBrush StartPoint="0,0.2" EndPoint="0.2,1.4">
                    <GradientStop Offset="0" Color="Red"/>
                    <GradientStop Offset="1" Color="Orange"/>
                </LinearGradientBrush>
            </Ellipse.Fill>
        </Ellipse>
        <ContentPresenter Content="{TemplateBinding Content}" HorizontalAlignment="Center" VerticalAlignment="Center"/>
    </Grid>
    <ControlTemplate.Triggers>
        <Trigger Property="IsMouseOver" Value="True">
            <Setter TargetName="ButtonEllipse" Property="Fill">
                <Setter.Value>
                    <LinearGradientBrush StartPoint="0,0.2" EndPoint="0.2,1.4">
                        <GradientStop Offset="0" Color="YellowGreen"/>
                        <GradientStop Offset="1" Color="Gold"/>
                    </LinearGradientBrush>
                </Setter.Value>
            </Setter>
        </Trigger>
        <Trigger Property="IsPressed" Value="True">
            <Setter Property="RenderTransform">
                <Setter.Value>
                    <ScaleTransform ScaleX="0.8" ScaleY="0.8" CenterX="0" CenterY="0"/>
                </Setter.Value>
            </Setter>
            <Setter Property="RenderTransformOrigin" Value="0.5,0.5"/>
        </Trigger>
    </ControlTemplate.Triggers>
</ControlTemplate>
```
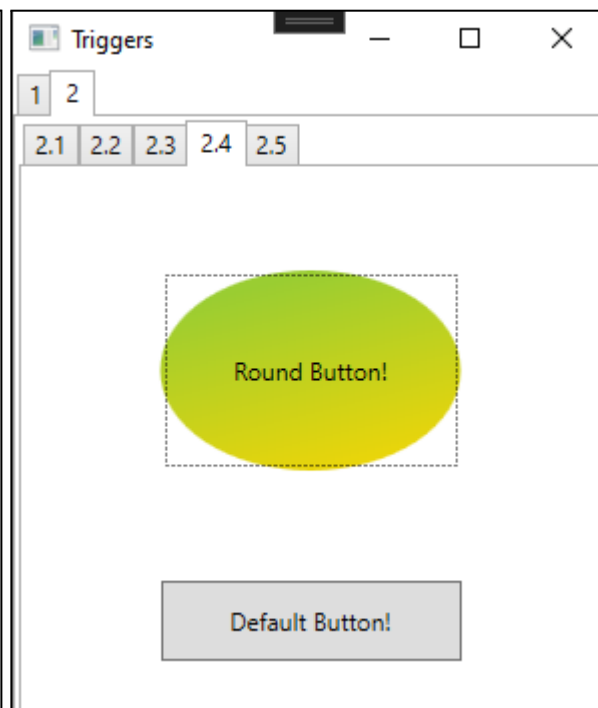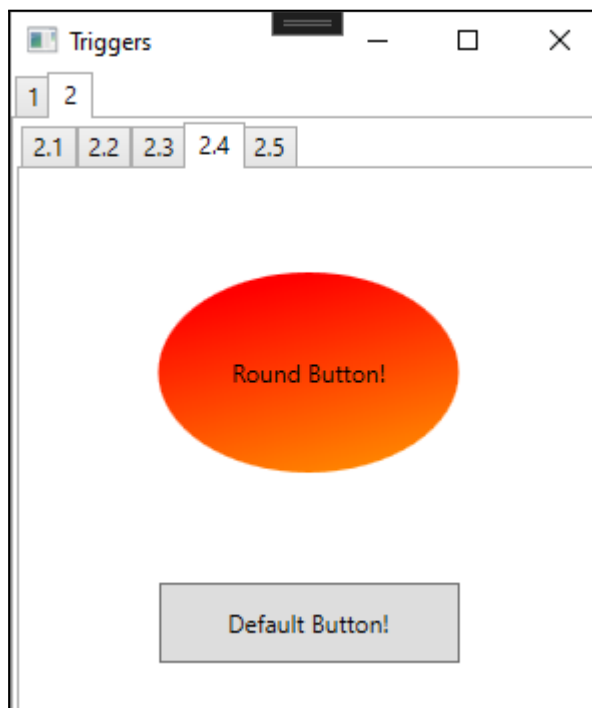
Задание 2.5

```xml
<TabItem Header="2.5">
    <Grid>
        <Grid.RowDefinitions>
            <RowDefinition Height="Auto"/>
            <RowDefinition Height="*"/>
        </Grid.RowDefinitions>
        <ListBox ItemsSource="{Binding}"/>
        <StackPanel Grid.Row="1">
            <Button Content="_Show..." Click="Button_Click" Width="80" HorizontalAlignment="Left" Margin="10"/>
        </StackPanel>
    </Grid>
</TabItem>
```

```xml
<DataTemplate DataType="{x:Type loc:Person}">
    <Grid>
        <Grid.RowDefinitions>
            <RowDefinition Height="Auto"/>
            <RowDefinition Height="Auto"/>
        </Grid.RowDefinitions>
        <Grid.ColumnDefinitions>
            <ColumnDefinition Width="Auto"/>
            <ColumnDefinition Width="200"/>
        </Grid.ColumnDefinitions>

        <Label Name="nameLabel" Margin="10"/>
        <TextBlock Name="nameText" Grid.Column="1" Margin="10" Text="{Binding Name}"/>
        <Label Name="ageLabel" Margin="10" Grid.Row="1"/>
        <TextBlock Name="ageText" Grid.Column="1" Grid.Row="1" Margin="10" Text="{Binding Age}"/>
    </Grid>
</DataTemplate>
```

```csharp
public partial class MainWindow : Window
{
    Person src = new Person { Name = "Ali", Age = 27 };
    List<Person> people = new List<Person>();
    Ссылок: 0
    public MainWindow()
    {
        InitializeComponent();
        people.Add(src);
        people.Add(new Person { Name = "Mike", Age = 62 });
        people.Add(new Person { Name = "Brian", Age = 12 });
        this.DataContext = people;
    }
    Ссылок: 1
    private void Button_Click (object sender, RoutedEventArgs e)
    {
        string message = src.Name + " is " + src.Age;
        MessageBox.Show(message);
    }
}
```

```
public class Person
{
    private string nameValue;
    public string Name
    {
        get { return nameValue; }
        set { nameValue = value; }
    }
    private double ageValue;
    public double Age
    {
        get { return ageValue; }
        set
        {
            if (value != ageValue)
            {
                ageValue = value;
            }
        }
    }
}
```
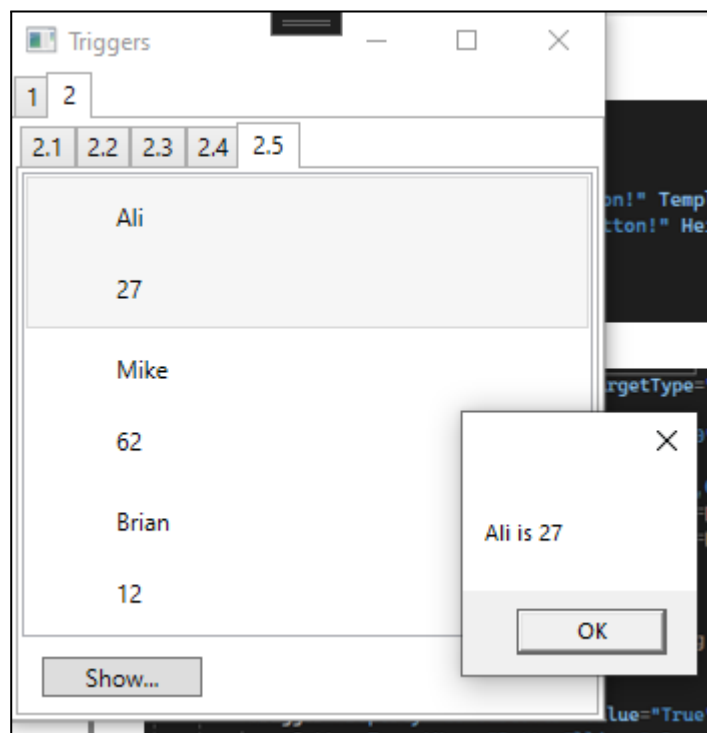
Triggers — □ ×

| 1 | 2 |

| 2.1 | 2.2 | 2.3 | 2.4 | 2.5 |

Ali

27

Mike

62

Brian

12

Show...

Triggers — □ ×

| 1 | 2 |

| 2.1 | 2.2 | 2.3 | 2.4 | 2.5 |

Ali

27

Mike

62

Brian

12

Show...

Изм. | Лист | № докум. | Подпись | Дата