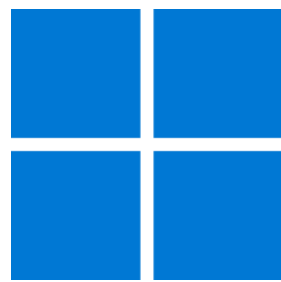




# Windows App SDK



## Shade Effect

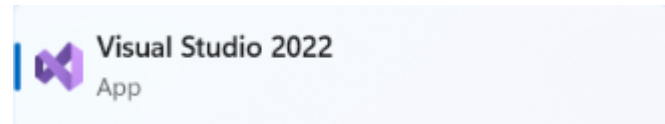
# Shade Effect

**Shade Effect** shows how you can use **DropShadow** with an element to create a **Shade Effect** in an application using the **Windows App SDK**.

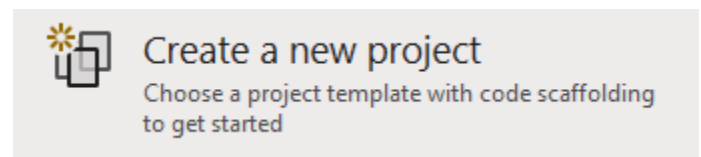
## Step 1

Follow **Setup and Start** on how to get **Setup** and **Install** what you need for **Visual Studio 2022** and **Windows App SDK**.

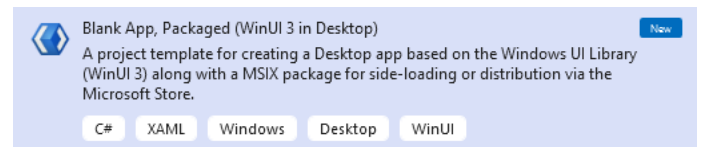
In **Windows 11** choose **Start** and then find or search for **Visual Studio 2022** and then select it.



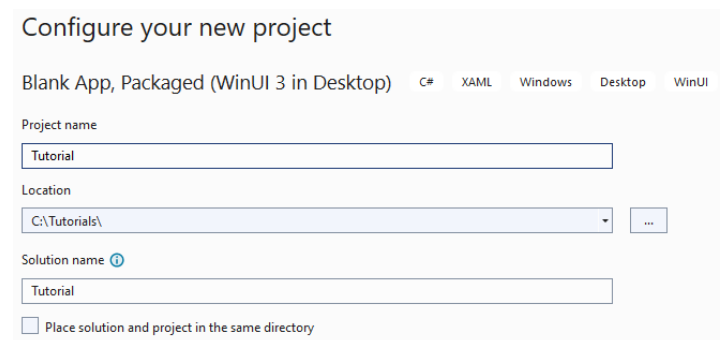
Once **Visual Studio 2022** has started select **Create a new project**.



Then choose the **Blank App, Packages (WinUI in Desktop)** and then select **Next**.

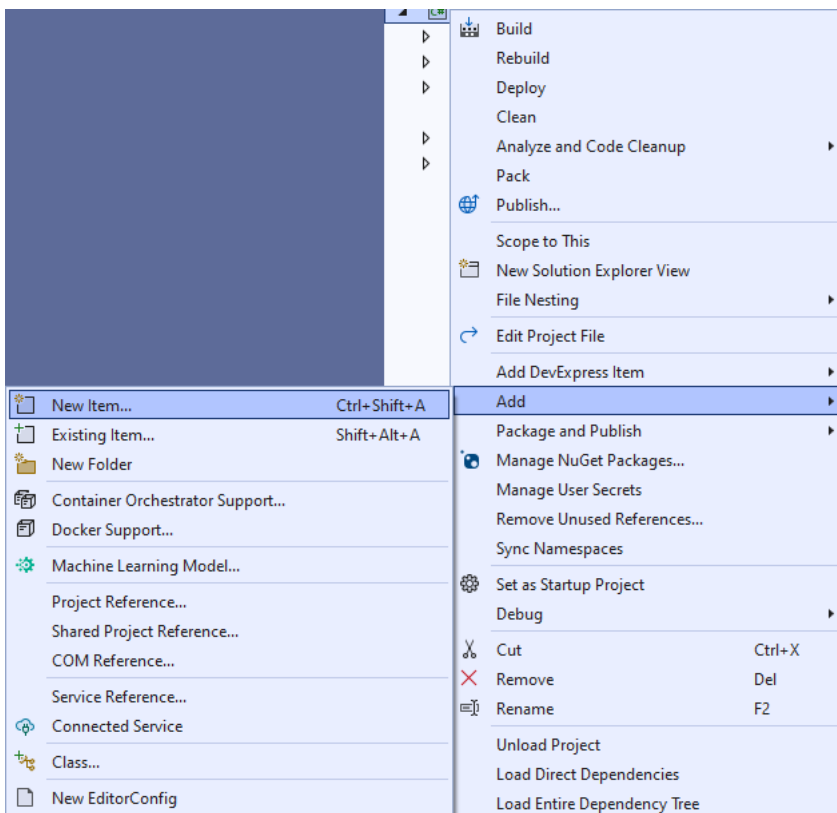


After that in **Configure your new project** type in the **Project name** as *ShadeEffect*, then select a Location and then select **Create** to start a new **Solution**.



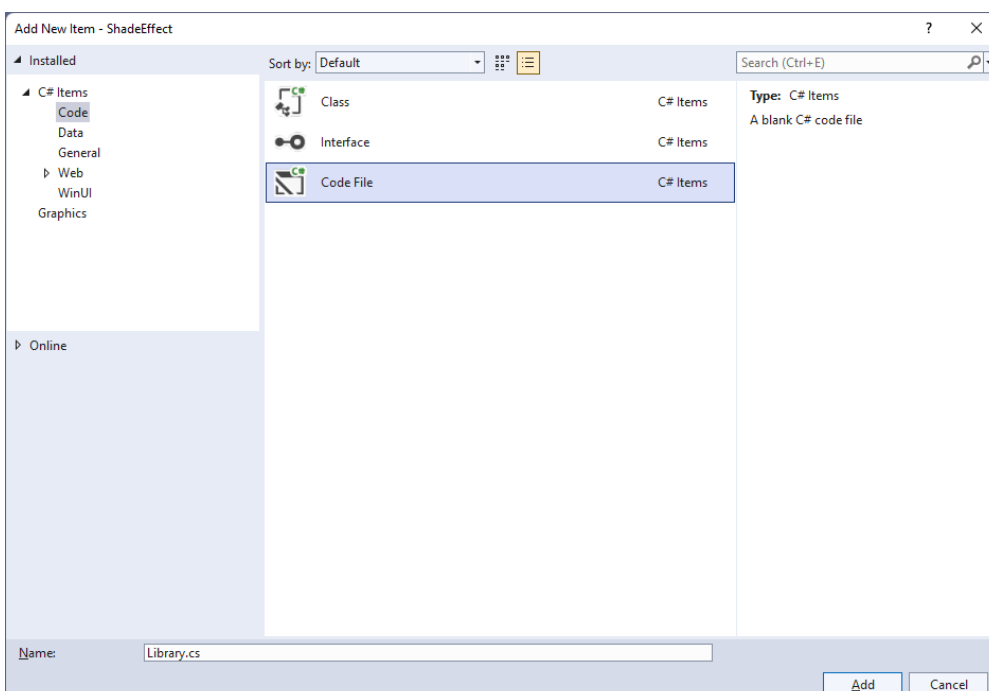
## Step 2

Then in **Visual Studio** within **Solution Explorer** for the **Solution**, right click on the **Project** shown below the **Solution** and then select **Add** then **New Item...**



## Step 3

Then in **Add New Item** from the **C# Items** list, select **Code** and then select **Code File** from the list next to this, then type in the name of *Library.cs* and then **Click** on **Add**.



## Step 4

You will now be in the **View** for the **Code** of *Library.cs*, within this type the following **Code**:

```
using Microsoft.UI;
using Microsoft.UI.Composition;
using Microsoft.UI.Xaml;
using Microsoft.UI.Xaml.Hosting;
using Microsoft.UI.Xaml.Shapes;

internal class Library
{
    private SpriteVisual _shade;

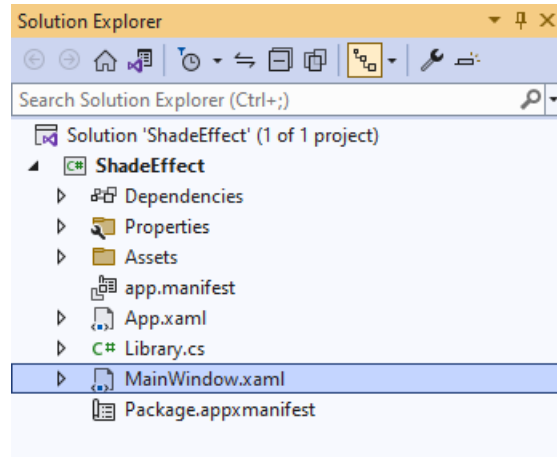
    public void SetShade(Shape shape, FrameworkElement element)
    {
        var compositor = ElementCompositionPreview
            .GetElementVisual(shape).Compositor;
        _shade = compositor.CreateSpriteVisual();
        _shade.Size = new System.Numerics.Vector2(
            (float)shape.ActualWidth,
            (float)shape.ActualHeight);
        DropShadow shadow = compositor.CreateDropShadow();
        shadow.Color = Colors.Black;
        shadow.Offset = new System.Numerics.Vector3(10, 10, 0);
        shadow.Mask = shape.GetAlphaMask();
        _shade.Shadow = shadow;
        ElementCompositionPreview.SetElementChildVisual(element, _shade);
    }

    public void ClearShade()
    {
        if (_shade != null)
            _shade.Shadow = null;
    }
}
```

The **Class** that has been defined in *Library.cs* has a **Member** for a **SpriteVisual** then there is a **Method** of **SetShade** which will create a **Shadow Effect** for a **Shape** in a **FrameworkElement** by first creating a **Compositor** with **ElementCompositionPreview** you'll also notice the use of **var**, which means the type of the value doesn't need to be explicitly specified, instead it will be **Inferred**. Then a **Compositor** is used with **CreateSpriteVisual** is configured where various values are set for a **DropShadow** to display it as needed as a **Shadow** with the **SpriteVisual**. The other **Method** of **ClearShade** is used to remove the **Shade Effect** of the **DropShadow** from the **SpriteVisual**.

## Step 5

Then from **Solution Explorer** for the **Solution** double-click on **MainWindow.xaml** to see the **XAML** for the **Main Window**.



## Step 6

In the **XAML** for **MainWindow.xaml** there be some **XAML** for a **StackPanel**, this should be **Removed** by removing the following:

```
<StackPanel Orientation="Horizontal"
HorizontalAlignment="Center" VerticalAlignment="Center">
  <Button x:Name="myButton" Click="myButton_Click">Click Me</Button>
</StackPanel>
```

## Step 7

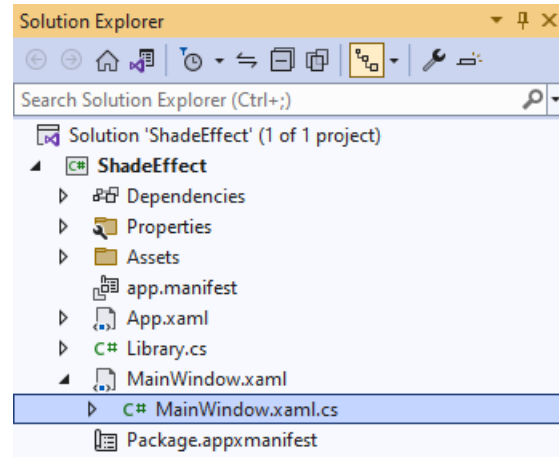
While still in the **XAML** for **MainWindow.xaml** above **</Window>**, type in the following **XAML**:

```
<Grid>
  <Viewbox Margin="25">
    <Grid Margin="50" Height="400" Width="400">
      <Border x:Name="ShadowElement"/>
      <Rectangle Name="Display" Stretch="Uniform" Fill="#FF5c2d91"/>
    </Grid>
  </Viewbox>
  <CommandBar Name="Options" VerticalAlignment="Bottom"
  HorizontalAlignment="Stretch">
    <AppBarButton Icon="Accept" Label="Accept" Click="Accept_Click"/>
    <AppBarButton Icon="Cancel" Label="Clear" Click="Clear_Click"/>
  </CommandBar>
</Grid>
```

This **XAML** features a **Grid** with a **ViewBox** which is used to **Scale** elements, then within this is a **Border** that will form the **Shade Effect** for the **Rectangle** which is a **FrameworkElement**. Then there is a **CommandBar** with an **AppBarButton** to apply the **Shade Effect** of *Accept* and another to remove it of *Clear*.

## Step 8

Then, within **Solution Explorer** for the **Solution** select the arrow next to **MainWindow.xaml** then double-click on **MainWindow.xaml.cs** to see the **Code** for the **Main Window**.



## Step 9

In the **Code** for **MainWindow.xaml.cs** there be a **Method** of **myButton\_Click(...)** this should be **Removed** by removing the following:

```
private void myButton_Click(object sender, RoutedEventArgs e)
{
    myButton.Content = "Clicked";
}
```

## Step 10

Once **myButton\_Click(...)** has been removed, type in the following **Code** below the end of the **Constructor** of **public MainWindow() { ... }**:

```
private readonly Library _library = new();

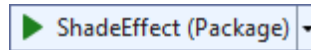
private void Accept_Click(object sender, RoutedEventArgs e)
{
    _library.SetShade(Display, ShadowElement);
}

private void Clear_Click(object sender, RoutedEventArgs e)
{
    _library.ClearShade();
}
```

The **Method** of **Accept\_Click** will call the **Method** within *Library.cs* of **SetShade** from an **Instance** of **Library** called **\_library** created with **new()** and **Clear\_Click** will call the **Method** of **ClearShade**.

## Step 11

That completes the **Windows App SDK** application. In **Visual Studio 2022** from the **Toolbar** select **ShadeEffect (Package)** to **Start** the application.



## Step 12

Once running you should see a **Rectangle** and **CommandBar** with the *Accept* and *Clear* options.

WinUI Desktop



- □ ×

✓ × ...

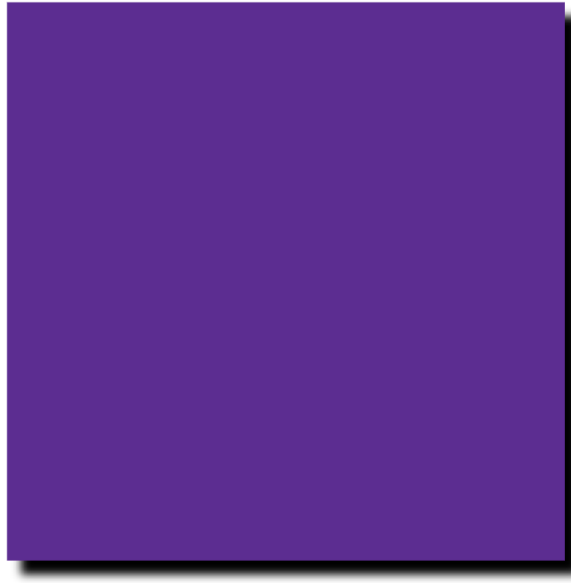
## Step 13

You can select *Apply* to set the **Shade Effect** and *Clear* to remove the **Shade Effect**

WinUI Desktop



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✓ × ...

## Step 14

To **Exit** the **Windows App SDK** application, select the **Close** button from the top right of the application as that concludes this **Tutorial** for **Windows App SDK** from [tutorialr.com](https://tutorialr.com)!

