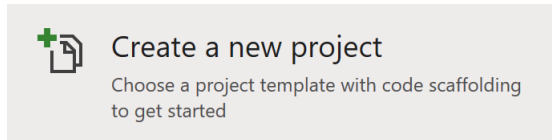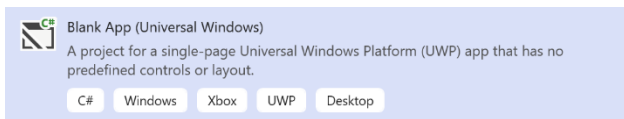# Universal Windows Platform – Lucky Lotto

Lucky Lotto shows how to display selected Lottery Numbers in **Ellipse** controls within a **StackPanel**

Step 1

Follow **Setup and Start** on how to Install and/or Get Started with **Visual Studio 2019** if not already or in **Windows 10** choose **Start**, find and select **Visual Studio 2019** then from the **Get started** screen select **Create a new project**
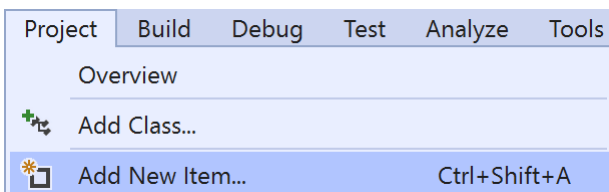
Then choose **Blank App (Universal Windows)** and select **Next** and then in **Configure your new project** enter the **Project name** as **LuckyLotto** and select **Create**
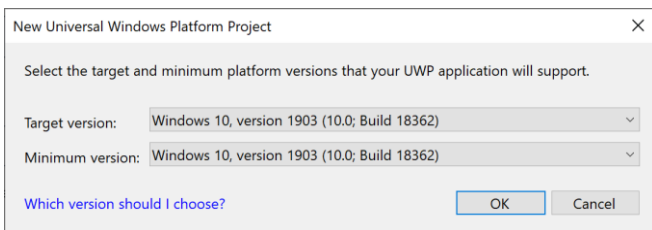
Finally, in **New Universal Windows Platform Project** pick the **Target version** and **Minimum version** to be at least **Windows 10, version 1903 (10.0; Build 18362)** and then select **OK**

Target Version will control the most recent features of Windows 10 your application can use. To make sure you always have the most recent version, check for any Notifications or Updates in Visual Studio 2019

Step 2

Choose **Project** then **Add New Item...** from the **Menu** in **Visual Studio 2019**

Step 3

Then choose **Code File** from **Add New Item** in **Visual Studio 2019**, enter the **Name** as **Library.cs** and select **Add**

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Step 4

In the **Code** View of **Library.cs** will be displayed and in this the following should be entered:

```csharp
using System;
using System.Collections.Generic;
using System.Linq;
using Windows.UI;
using Windows.UI.Xaml;
using Windows.UI.Xaml.Controls;
using Windows.UI.Xaml.Media;
using Windows.UI.Xaml.Shapes;

public class Library
{
    private const int total = 6;
    private const int maximum = 59;

    private Dictionary<int, Color> _style = new Dictionary<int, Color>()
    {
        { 0, Colors.White },
        { 10, Colors.RoyalBlue },
        { 20, Colors.HotPink },
        { 30, Colors.MediumSpringGreen },
        { 40, Colors.Gold },
        { 50, Colors.Indigo },
    };

    private Random _random = new Random((int)DateTime.UtcNow.Ticks);


}
```

There are `using` statements to include necessary functionality. Also there are `private const int` for the `total` number of balls in the lottery and `maximum` which is the biggest lottery number that can be selected. `Dictionary<int, Color>` is used to store the lowest value for a range and their colour of the lottery balls. `Random` is used to create the randomised numbers.

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Then below the **private Random _random = new Random((int)DateTime.UtcNow.Ticks);** line the following **method** should be entered:

```csharp
private List<int> Choose()
{
    int number;
    List<int> numbers = new List<int>();
    while (numbers.Count < total) // Select Numbers
    {
        number = _random.Next(1, maximum + 1);
        if (!numbers.Contains(number) || numbers.Count < 1)
        {
            numbers.Add(number); // Add if not Chosen or None
        }
    }
    numbers.Sort();
    return numbers;
}
```

`Choose()` is used to `return` a `List<int>` of sorted lottery numbers using `Random` to select them

Next below the **private void Choose() { } method** the following **method** should be entered:

```csharp
private void Add(ref StackPanel panel, int value)
{
    Color fill = _style.Where(w => value > w.Key)
    .Select(s => s.Value).LastOrDefault();
    Grid element = new Grid()
    {
        Width = 75,
        Height = 75,
        Margin = new Thickness(5),
    };
    Ellipse ball = new Ellipse()
    {
        StrokeThickness = 5,
        Stroke = new SolidColorBrush(fill)
    };
    TextBlock label = new TextBlock()
    {
        FontSize = 32,
        Text = value.ToString(),
        TextLineBounds = TextLineBounds.Tight,
        VerticalAlignment = VerticalAlignment.Center,
        Foreground = new SolidColorBrush(Colors.Black),
        HorizontalAlignment = HorizontalAlignment.Center,
    };
    element.Children.Add(ball);
    element.Children.Add(label);
    panel.Children.Add(element);
}
```

`Add(...)` is used to create the lottery balls, there is a `Grid` which will contain the `Ellipse` for the ball with `Stroke` set to the `SolidColorBrush` of the `Color` selected using LINQ to get the `LastOrDefault()` value and `TextBlock` which will display the number itself

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Finally, after **private void Add(...) method** the following **public method** should be entered:

```csharp
public void New(ref Grid grid)
{
    grid.Children.Clear();
    StackPanel panel = new StackPanel()
    {
        Height = 100,
        Orientation = Orientation.Horizontal
    };
    foreach (int number in Choose())
    {
        Add(ref panel, number);
    }
    Viewbox viewbox = new Viewbox()
    {
        Child = panel
    };
    grid.Children.Add(viewbox);
}
```
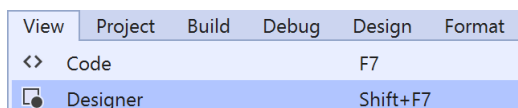
New(...) will setup the layout of the StackPanel passed in and use the Add(...) method to create the layout of the lottery numbers and then place this within a ViewBox and add this to a Grid

Step 5
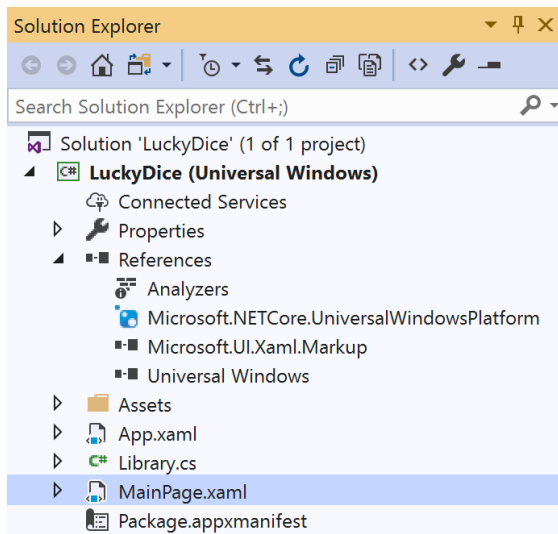
In the **Solution Explorer** of **Visual Studio 2019** select **MainPage.xaml**

Step 6

Choose **View** then **Designer** from the **Menu** in **Visual Studio 2019**

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Step 7

In the **Design** View and **XAML** View of **Visual Studio 2019** will be displayed, and in this between the **Grid** and **/Grid** elements enter the following **XAML**:

```xaml
<Grid Margin="50" Name="Display"
VerticalAlignment="Center" HorizontalAlignment="Center"
CornerRadius="10" Background="WhiteSmoke"/>
<CommandBar VerticalAlignment="Bottom">
    <AppBarButton Icon="Page2" Label="New" Click="New_Click"/>
</CommandBar>
```

The first block of XAML the main user interface features a Grid to contain the lottery numbers. The second block of XAML is the CommandBar which contains New to select the lottery numbers

Step 8

View	Project	Build	Debug	Design	Format
<> Code			F7		
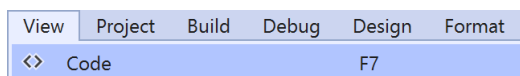
Choose **View** then **Code** from the **Menu** in **Visual Studio 2019**

Step 9

Once in the **Code** View, below the end of **public MainPage() { ... }** the following Code should be entered:
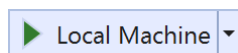
```csharp
Library library = new Library();

private void New_Click(object sender, RoutedEventArgs e)
{
    library.New(ref Display);
}
```

Below the MainPage(…) method an instance of the **Library** Class is created. In the **New_Click(...)** Event handler will call the **New(...)** method in the **Library** class

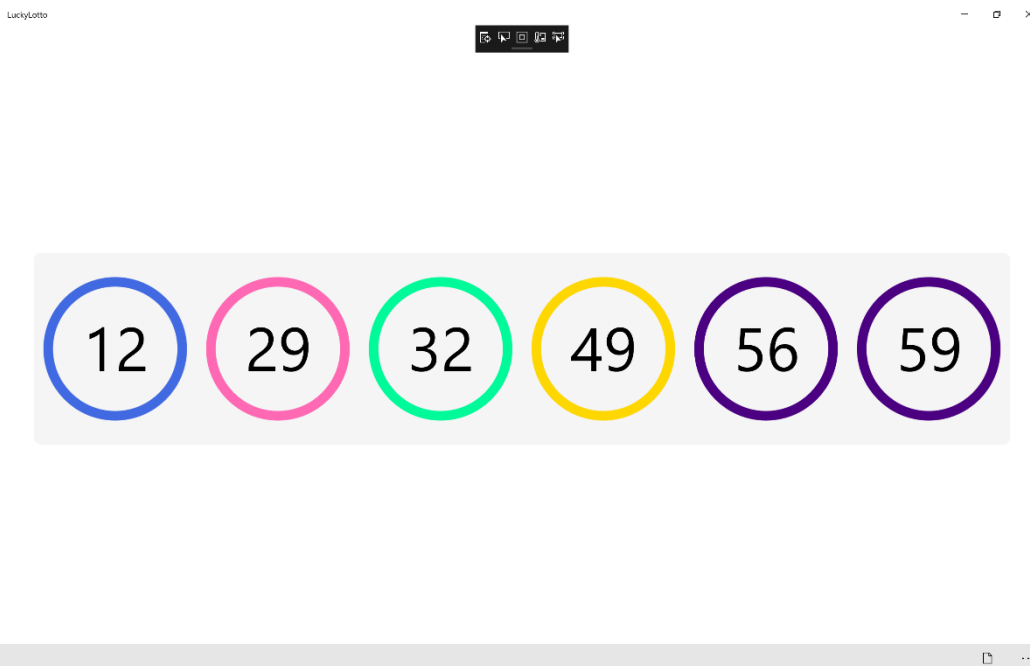Tutorialr.com

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Step 10

That completes the **Universal Windows Platform** Application, in **Visual Studio 2019** select **Local Machine** to run the Application

Step 11

Once the Application is running you can then click on the **New** button to select some lottery numbers

LuckyLotto

You can change the `total`, `maximum` and `_style` values to match the style of the lottery where you are

Step 12

To Exit the Application, select the **Close** button in the top right of the Application

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