

# Lesson One

## Getting Started with XAML and UWP

In our first lesson we'll build the main page with a navigation pane on the left. The remaining portion of the window will contain layouts for source selection, audio controls, power commands and so on.

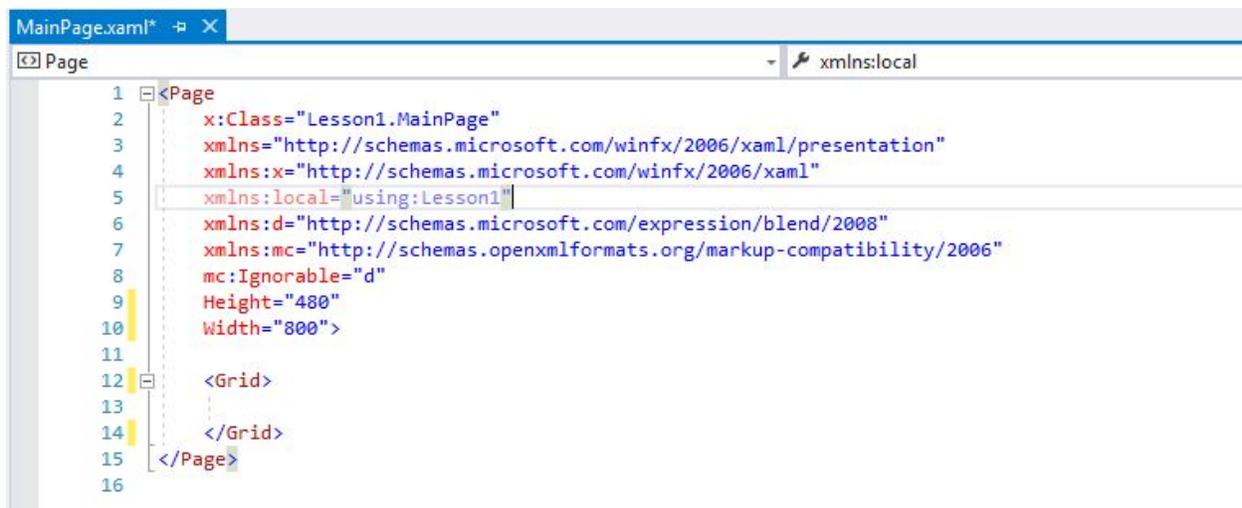
This control system will run on x32 and ARM devices, so the interface will be designed for UWP or Universal Windows Project. Most of our work for the interface will be done in XAML (which sounds like camel).

### Project Setup

Open Visual Studio and create a new Windows UWP project. If you've never created a new project before review our lesson: **Install-VS-Community-Edition**.

We'll be using .NET Standard 2.0 for this project.

A Raspberry Pi and a 7" Raspberry Pi touch screen will be used for this control system. The touch screen size is 800x480. For this system responsive layout is not required. Add a Height property and set it to 480. Add a Width property with a value of 800. Delete Background="{ThemeResource ApplicationPageBackgroundThemeBrush}" property. We'll set the background property later. Note xmlns:local="using:..." namespace is lighter in color, which That indicates it is safe to delete.



```
1 <Page
2     x:Class="Lesson1.MainPage"
3     xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
4     xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
5     xmlns:local="using:Lesson1"
6     xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
7     xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
8     mc:Ignorable="d"
9     Height="480"
10    Width="800">
11
12    <Grid>
13
14    </Grid>
15 </Page>
16
```

## Create a Base Layout

Even though the screen size is fixed, it's still a good idea to use proportional (or star) sizing. Our base design will have a header for the logo and current date and time information, a left navigation bar, an area for popup screens and a footer.

```
1 <Page
2   x:Class="Lesson1.MainPage"
3   xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
4   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
5   xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
6   xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
7   mc:Ignorable="d"
8   Height="480"
9   Width="800">
10
11   <!-- Main Grid -->
12   <Grid Background="White">
13     <Grid.ColumnDefinitions>
14       <!-- Left Hand Gutter -->
15       <ColumnDefinition Width="16*" />
16       <!-- Navigation Sidebar area -->
17       <ColumnDefinition Width="160*" />
18       <!-- Popup area Width-->
19       <ColumnDefinition Width="624*" />
20     </Grid.ColumnDefinitions>
21     <Grid.RowDefinitions>
22       <!-- Header bar-->
23       <RowDefinition Height="88*" />
24       <!-- Popup area Height-->
25       <RowDefinition Height="376*" />
26       <!-- Footer -->
27       <RowDefinition Height="16*" />
28     </Grid.RowDefinitions>
29   </Grid>
30 </Page>
31
```

Like building a table for a web page, add column and row definitions as show in the code snippet above. Finally, set the Background color to White.

## Build the Navigation Pane

To build the navigation bar, add a stack panel and name it "StkNavigation". Set the orientation to vertical and the Horizontal alignment to Stretch. Set the Grid.Column to 1 and the Grid.Row to 1

```
11 <!-- Main Grid -->
12 <Grid Background="White">
13   <Grid.ColumnDefinitions>
14     <!-- Left Hand Gutter -->
15     <ColumnDefinition Width="16*" />
16     <!-- Navigation Sidebar area -->
17     <ColumnDefinition Width="160*" />
18     <!-- Popup area Width-->
19     <ColumnDefinition Width="624*" />
20   </Grid.ColumnDefinitions>
21   <Grid.RowDefinitions>
22     <!-- Header bar-->
23     <RowDefinition Height="88*" />
24     <!-- Popup area Height-->
25     <RowDefinition Height="376*" />
26     <!-- Footer -->
27     <RowDefinition Height="16*" />
28   </Grid.RowDefinitions>
29   <StackPanel x:Name="StkNavigation"
30     Grid.Column="1"
31     Grid.Row="1"
32     Orientation="Vertical"
33     HorizontalAlignment="Stretch">
34
35   </StackPanel>
36 </Grid>
```

Now, add four navigation buttons for Display, Lighting, Audio and Power between the StackPanel tags. Give each of them a name and content.

```
12 | </Grid.ColumnDefinitions>
13 | <StackPanel x:Name="StkNavigation"
14 |     Grid.Column="0"
15 |     Orientation="Vertical"
16 |     HorizontalAlignment="Stretch">
17 |     <Button x:Name="BtnDisplay"
18 |         Content="Display"/>
19 |     <Button x:Name="BtnLighting"
20 |         Content="Lighting"/>
21 |     <Button x:Name="BtnAudio"
22 |         Content="Audio"/>
23 |     <Button x:Name="BtnPower"
24 |         Content="Power"/>
25 | </StackPanel>
26 | <Frame x:Name="FrmPopup" ...
```

Right now, your panel is incredibly blah, just four small, basic buttons. There's no style, there are no margins around them and the font is probably wrong. Don't worry about it. Layout using XAML is like using CSS for web site design. In the next lesson, those buttons will be formatted by adding a style resource and storing that style in a resource dictionary.

## Add the Popup Frame

For the popups on the right side of the screen, add a frame, name it "FrmPopup". Set the Horizontal and Vertical alignments to Stretch. Set the Grid.Column to 2 and the Grid.Row to 1. The frame will fill the remaining space. If you want to see your frame in relation to the navigation buttons, add a color to the frame's background property.

```
42 | <Frame x:Name="FrmPopup"
43 |     Background="LightBlue"
44 |     Grid.Column="2"
45 |     Grid.Row="1"
46 |     HorizontalAlignment="Stretch"
47 |     VerticalAlignment="Stretch"/>
48 | </Grid>
```

## Main Page XAML view complete

```
1 <Page
2   x:Class="Lesson1.MainPage"
3   xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
4   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
5   xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
6   xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
7   mc:Ignorable="d"
8   Height="480"
9   Width="800">
10  <!-- Main Grid -->
11  <Grid Background="White">
12    <Grid.ColumnDefinitions>
13      <!-- Left Hand Gutter -->
14      <ColumnDefinition Width="16*" />
15      <!-- Navigation Sidebar area -->
16      <ColumnDefinition Width="160*" />
17      <!-- Popup area Width-->
18      <ColumnDefinition Width="624*" />
19    </Grid.ColumnDefinitions>
20    <Grid.RowDefinitions>
21      <!-- Header bar-->
22      <RowDefinition Height="88*" />
23      <!-- Popup area Height-->
24      <RowDefinition Height="376*" />
25      <!-- Footer -->
26      <RowDefinition Height="16*" />
27    </Grid.RowDefinitions>
28    <StackPanel x:Name="StkNavigation"
29      Grid.Column="1"
30      Grid.Row="1"
31      Orientation="Vertical"
32      HorizontalAlignment="Stretch">
33      <Button x:Name="BtnDisplay"
34        Content="Display" />
35      <Button x:Name="BtnLighting"
36        Content="Lighting" />
37      <Button x:Name="BtnAudio"
38        Content="Audio" />
39      <Button x:Name="BtnPower"
40        Content="Power" />
41    </StackPanel>
42    <Frame x:Name="FrmPopup"
43      Background="LightBlue"
44      Grid.Column="2"
45      Grid.Row="1"
46      HorizontalAlignment="Stretch"
47      VerticalAlignment="Stretch" />
48  </Grid>
49 </Page>
50
```

## Main Page Design View Complete

