

How to make an app to YouInteract Platform

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1 - About

YouInteract is a system for interacting with public displays using a Microsoft Kinect. The objective of this project is to develop YouInteract making it a standalone application that can be easily configured and installed anywhere (school hall, company, manufactures, cinemas, hospitals, etc ...).

The users should be able to use various applications depending on the purpose and actual place where the system will work. Basic applications will be developed in order to allow the system to be used by a company or organization. The system will also have a web page where administrators can configure the entire system.

2 - Requirements

- Microsoft Visual Studio installed;
- knowledge in WPF and C#;
- YouInteract Template Project (You_Template);
- Knowledge of the Microsoft.Kinect Library Classes (<http://msdn.microsoft.com/en-us/library/microsoft.kinect.aspx>);
- Microsoft Kinect.

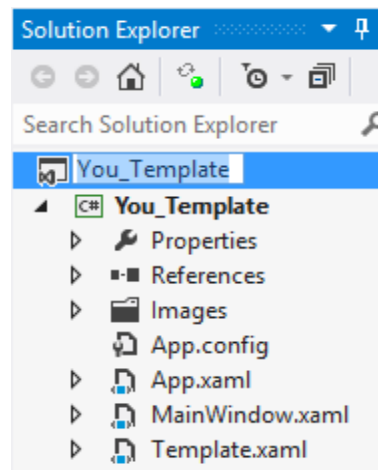
Examples using You_AirPaint application

3 - Before starting to develop:

- 1) Edit the root directory of the template project to You_* (* = app name);

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You_AirPaint	12/05/2014 16:54	Pasta de ficheiros	

- 2) Open the Project with Visual Studio and rename the Solution to You_* (right click);



- 3) Right click You_Template, rename it to You_* and then select properties. Rename Assembly Name and Default namespace to You_*.

- 4) Open MainWindow.xaml, MainWindow.xaml.cs, Template.xaml and Template.xaml.cs and rename the namespace to You_*.

```
namespace You_AirPaint  
  
<Page x:Class="You_AirPaint.Template"  
  
<Window x:Class="You_AirPaint.MainWindow"
```

- 5) Change the Template name to * (MainWindow.xaml.cs, Template.xaml and Template.xaml.cs) and rename the Template file.

```
namespace You_AirPaint
{
    /// <summary>
    /// Interaction logic for Template.xaml
    /// </summary>
    public partial class AirPaint : Page, YouPlugin
    {
        public AirPaint()
        {
            InitializeComponent();
        }
    }
}
```

Template.xaml.cs rename to AirPaint.xaml.cs

```
<Page x:Class="You_AirPaint.AirPaint"
xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
xmlns:k="http://schemas.microsoft.com/kinect/2013"
xmlns:u="clr-namespace:YouInteract.YouInteractAPI;assembly=YouInteract"
mc:Ignorable="d"
Width="{DynamicResource {x:Static SystemParameters.MaximizedPrimaryScreenWidthKey}}"
Title="AirPaint" x:Name="YouAirPaint">
```

Template.xaml

```
namespace You_AirPaint
{
    /// <summary>
    /// Interaction logic for MainWindow.xaml
    /// </summary>
    public partial class MainWindow : Window
    {
        private AirPaint airPaint;

        public MainWindow()
        {
            InitializeComponent();
            airPaint = new AirPaint();
            YouFrame.Navigate(airPaint);
        }
    }
}
```

MainWindow.xaml.cs

6) Change YouPlugin Interface Methods (AirPaint.xaml.cs):

```
#region YouPlugin Interface Methods

// Name of the app and namespace. MUST start by "You_*"
public string getAppName()
{
    return "You_AirPaint";
}
// To identify the main page of the Plugin
public bool getIsFirstPage()
{
    return true;
}
// To identify which Kinect Requirements need to be active
// Kinect Region; Skeleton Stream; Interaction Stream
public KinectRequirements getKinectRequirements()
{
    return new KinectRequirements(false, true, true);
}
// To identify the page name
public string getName()
{
    return this.Name;
}
// This Page
public Page getPage()
{
    return this;
}
// To identify the kinect Region
// Return your Kinect Region if it is active
// else return Null
public KinectRegion getRegion()
{
    return null;
}

#endregion
```

4 - App Development

DO NOT ALTER MainWindow (except to change frame during Tests)

4.1 - Responsive Design

```
private double w, h;

/// <summary>
/// AirPaint Constructor
/// </summary>
public AirPaint()
{
    InitializeComponent();

    setWindow();
}

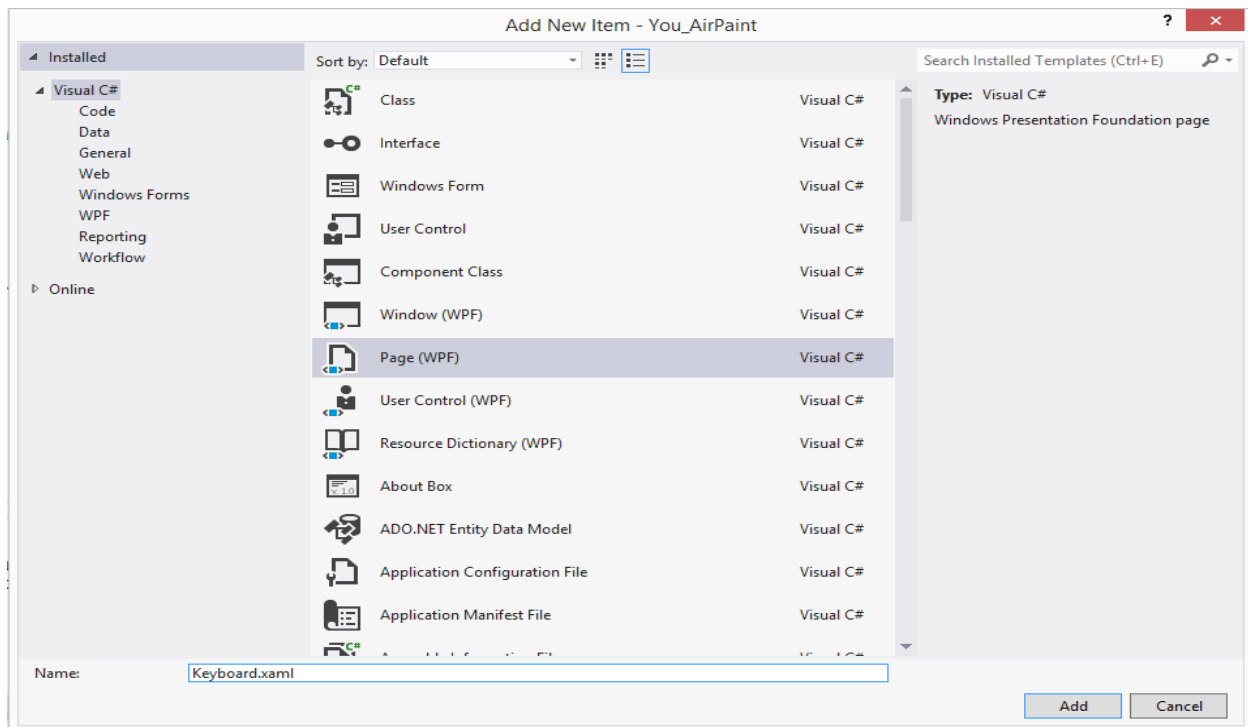
private void setWindow()
{
    // Get Window Measures
    h = this.Height;
    w = this.Width;

    // Set MainMenuButton
    MainMenuButton.Width = w*0.11;
    MainMenuButton.Height = h*0.22;
    Canvas.SetTop(MainMenuButton, h*0.01);
    Canvas.SetLeft(MainMenuButton, w*0.01);
}
```

NOTE: MainMenuButton was declared in AirPaint.xaml

4.2 - Add new Frames (Pages)

- Right Click on the project, add Page (Keyboard);



- Edit the Keyboard.xaml file in order to have a responsive design and access to the YouInteract library:

```
<Page x:Class="You_AirPaint.Keyboard"
      xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
      xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
      xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
      xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
      xmlns:k="http://schemas.microsoft.com/kinect/2013"
      xmlns:u="clr-namespace:YouInteract.YouInteractAPI;assembly=YouInteract"
      mc:Ignorable="d"

      Width="{DynamicResource {x:Static SystemParameters.MaximizedPrimaryScreenWidthKey}}"
      Height="{DynamicResource {x:Static SystemParameters.MaximumWindowTrackHeightKey}}" Cursor="Hand"
      Title="Keyboard" x:Name="YouKeyboard">
```

- Edit the Keyboard.xaml.cs file

```
using Microsoft.Kinect.Toolkit.Controls;
using YouInteract.YouBasic;
using YouInteract.YouInteractAPI;
using YouInteract.YouPlugin_Developing;
```

```

public partial class Keyboard : Page, YouPlugin
{
    public Keyboard()
    {
        InitializeComponent();
    }
}

```

NOTE: Now implement the YouPlugin Interface methods

4.3 - YouButton

Initialize a YouButton and it's event handler's for a click event, a grip event, an enter event and a leave event.

```

<u:YouButton x:Name="MainMenuButton"
    Click="Button_Click" GripEvent="Button_GripEvent" EnterEvent="MainMenuButton_OnEnterEvent" LeaveEvent="MainMenuButton_OnLeaveEvent"
    Background="{x:Null}" BorderBrush="{x:Null}" Foreground="{x:Null}" LabelBackground="{x:Null}">
    <Image Source="/You_AirPaint;component/Images/Themes/Theme1/Navigation/back.png" Stretch="Fill"/>
</u:YouButton>

```

4.4 - Kinect Region

Initialize the Kinect Region.

```

<Grid>
    <k:KinectRegion x:Name="YouAirPaintRegion">
        <Canvas x:Name="YouAirPaintCanvas">
            <Image x:Name="Titulo" Stretch="Fill"/>
            <u:YouButton x:Name="MainMenuButton" Click="Button_Click" GripEvent="Button_GripEvent"
                Background="{x:Null}" BorderBrush="{x:Null}" Foreground="{x:Null}" LabelBackground="{x:Null}">
                <Image Source="/You_AirPaint;component/Images/Themes/Theme1/Navigation/back.png" Stretch="Fill"/>
            </u:YouButton>
        </Canvas>
    </k:KinectRegion>

```

NOTE: Do not forget to return your Kinect Region in the implemented YouPlugin Interface methods.

4.5 - Skeleton Stream

```
public Template()
{
    InitializeComponent();
    Loaded += Template_Loaded;
}

void Template_Loaded(object sender, RoutedEventArgs e)
{
    KinectApi.SkeletonEvent += KinectApi_SkeletonEvent;
}

void KinectApi_SkeletonEvent(SkeletonStreamArgs e)
{
}
```

4.6 - Interaction Stream

```
void Template_Loaded(object sender, RoutedEventArgs e)
{
    KinectApi.InteractionEvent += KinectApi_InteractionEvent;
}

void KinectApi_InteractionEvent(InteractionStreamArgs e)
{
}
```

4.7 - Color Stream

```
void Template_Loaded(object sender, RoutedEventArgs e)
{
    KinectApi.ColorStreamEvent += KinectApi_ColorStreamEvent;
}

void KinectApi_ColorStreamEvent(BitmapSource e)
{
}
```

NOTE: Must disable the used Streams!

```
public Template()
{
    InitializeComponent();
    Loaded += Template_Loaded;
    Unloaded += Template_Unloaded;
}

void Template_Unloaded(object sender, RoutedEventArgs e)
{
    KinectApi.SkeletonEvent -= KinectApi_SkeletonEvent;
}
```

5 - Navigation

5.1 - Navigate through the App

To navigate to other frames of the application, you need to request a frame change to the pretended page (Name declared in the XAML):

```
private void TestButton_OnClick(object sender, RoutedEventArgs e)
{
    YouNavigation.requestFrameChange(this, "YouTemplatePage2");
}
```

NOTE: To test your App, the frame navigation has to be done through the MainWindow.

```
public partial class MainWindow : Window
{
    public static MainWindow window;
    private Template template;
    private Template2 template2;

    public MainWindow()
    {
        InitializeComponent();
        window = this;
        YouWindow.setWindow(this.Height, this.Width);

        template = new Template();
        template2 = new Template2();
        YouFrame.Navigate(template);
    }
}
```

```
private void TestButton_OnClick(object sender, RoutedEventArgs e)
{
    //YouNavigation.requestFrameChange(this, "YouTemplatePage2");
    MainWindow.window.YouFrame.Navigate("YouTemplatePage2");
}
```

5.2 - Navigate to Main App

```
private void TestButton_OnClick(object sender, RoutedEventArgs e)
{
    YouNavigation.navigateToMainMenu(this);
}
```

6 - Send your App to YouInteract Store

It is important for us, that you test your app before sending it to us. When it is finished, you can send it to YouInteract Platform:

- Save a backup of your application;
- Right click on namespace and select properties;
- Select Output Type Class Library;
- Delete the following files (App.config, App.xaml and MainWindow.xaml);
- Build your app and verify your frame navigations;
- Send your DLL File to YouInteract Admin.

7 - Contacts

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