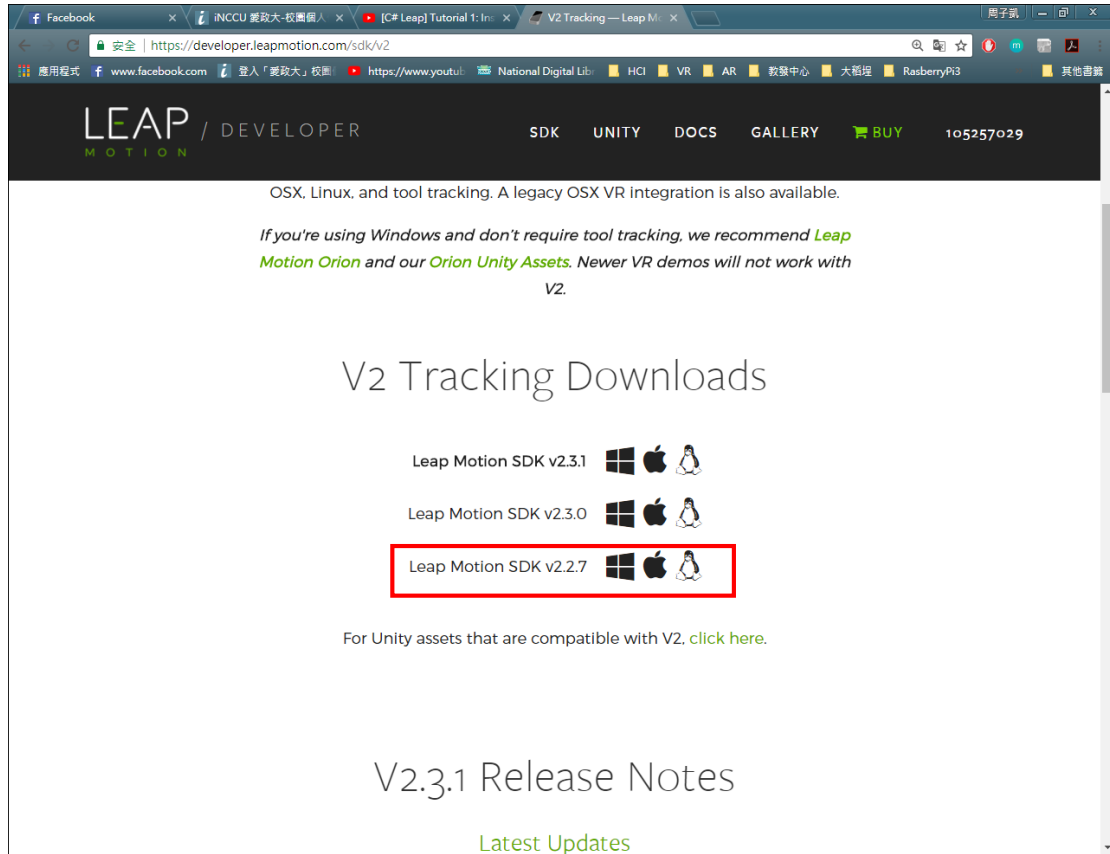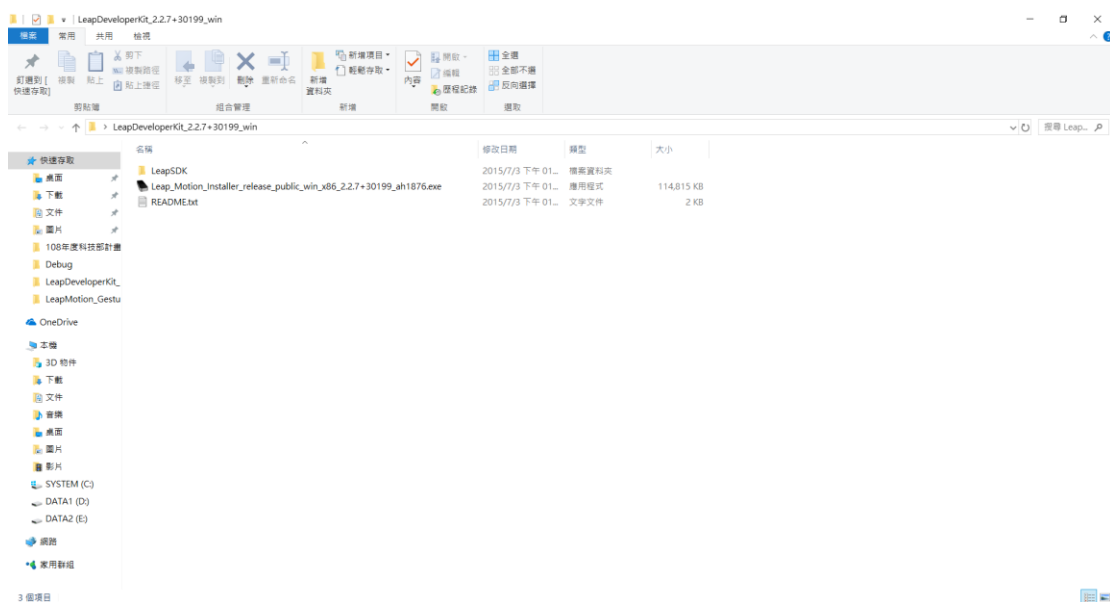# Leap Motion Gestures

- **Installing Leap Motion**

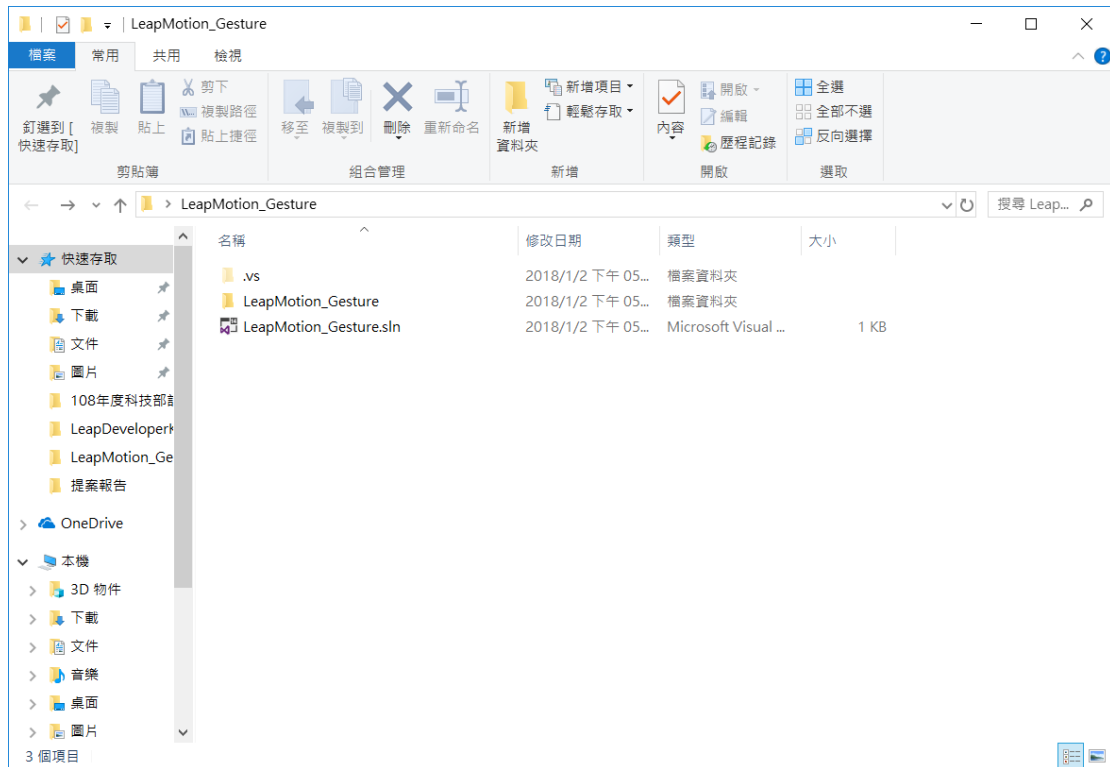Leap Motion SDK:

Leap Motion SDK v2.2.7



Install .exe to your computer!

## Setting up C# for Leap

Visual Studio2015 → NewProject→Windows Forms Application→Create!



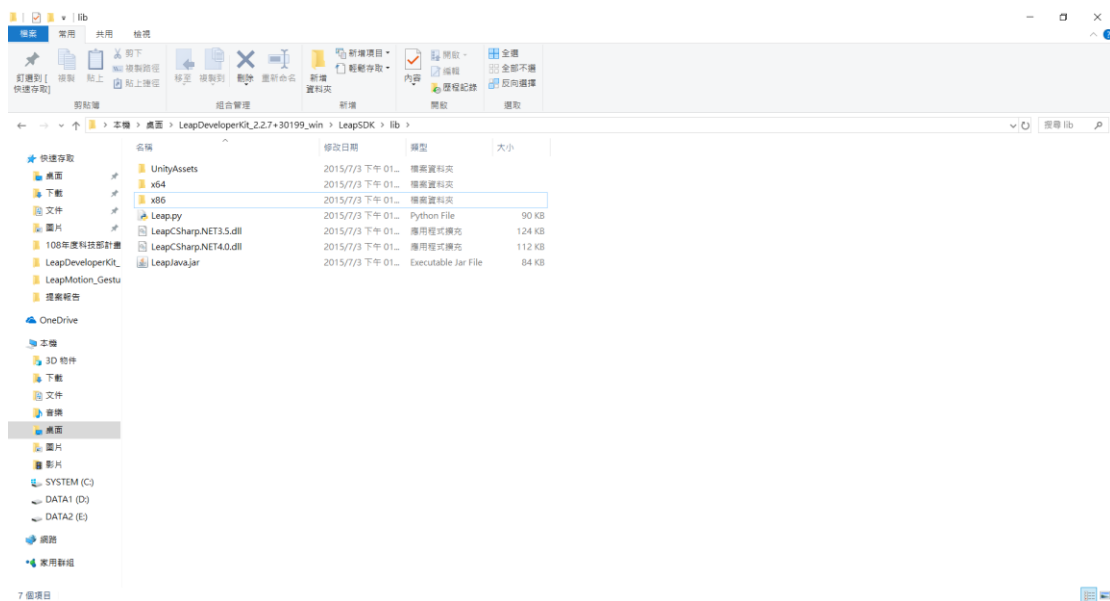Add the following three Leap Motion SDKs From

**LeapDeveloperKit_2.2.7+30199_win** folder to the **Leap Motion_Gesture** folder!
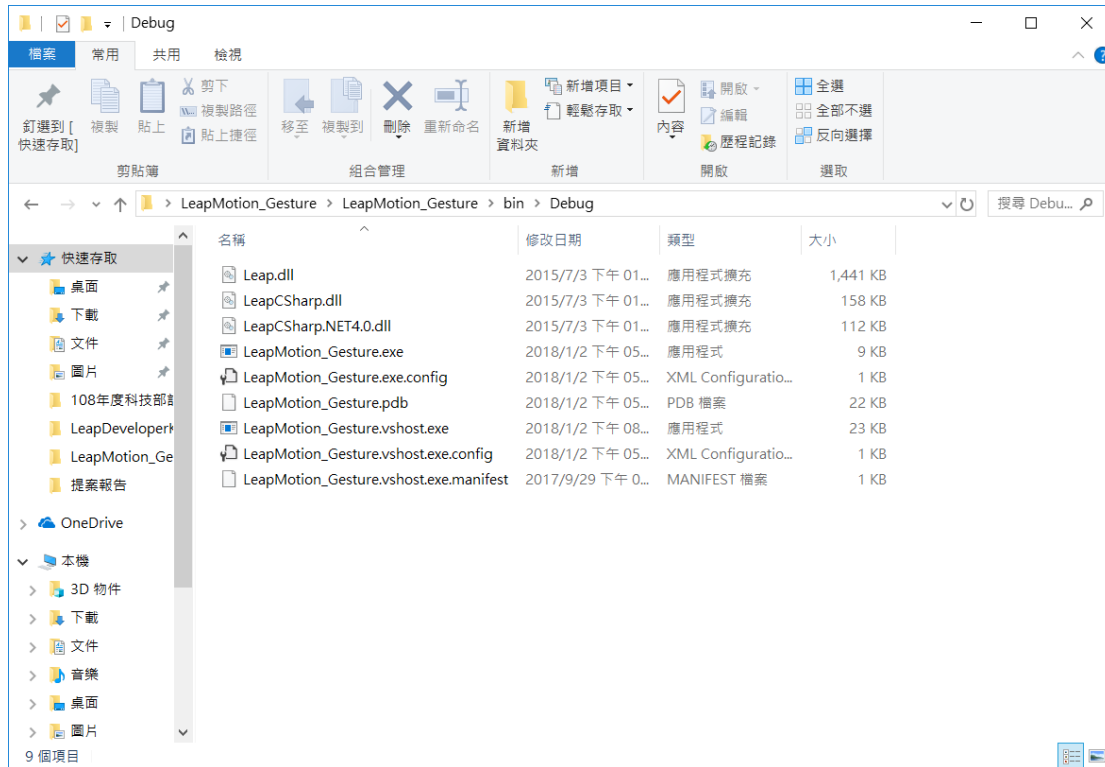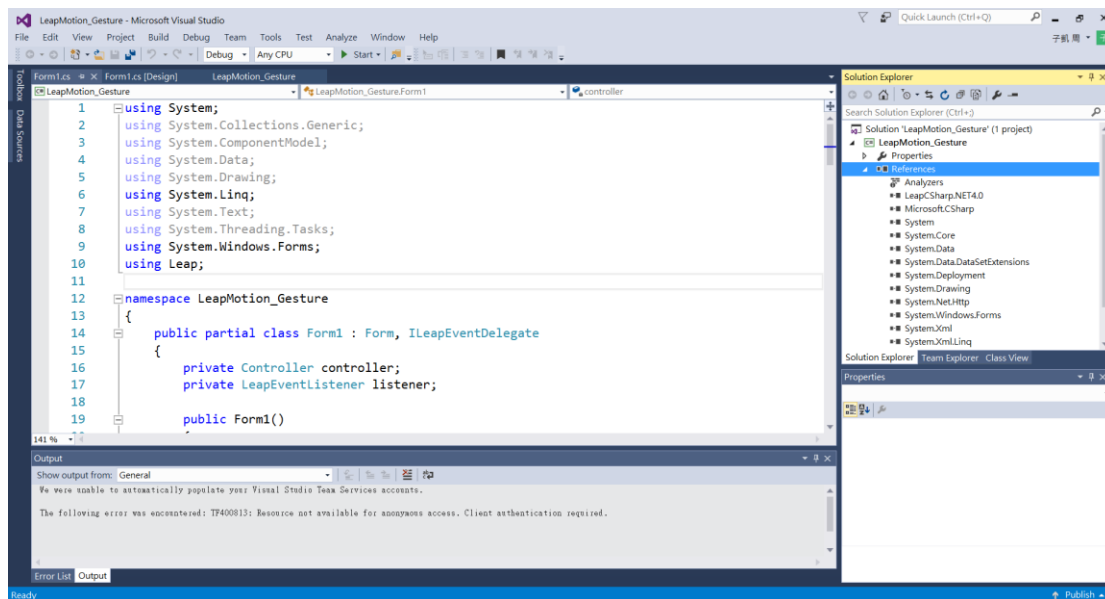
-Leap.dll

-LeapCSharp.dll

-LeapCSharpNET4.0.dll
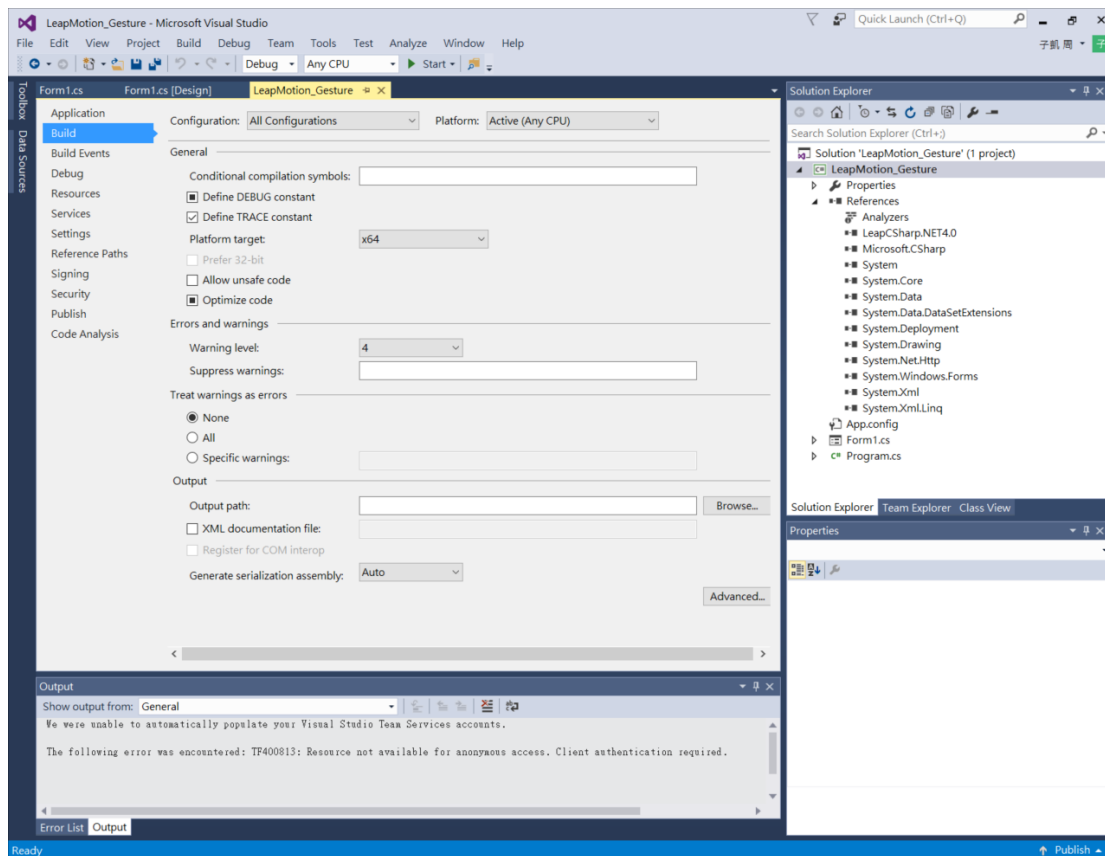
(According to your computer, in my project I use x64!)

In Vistual Studio, we add References→ LeapCSharpNET4.0.dll



Change LeapMotion_Gesture Properties!

Build→Configuration→All Configuration.

Build Events→Post-build event command line→Edit Post-build

For 64-bit, x64 projects add:

```
xcopy /yr "$(LEAP_SDK)\lib\x64\Leap.dll" "$(TargetDir)"
xcopy /yr "$(LEAP_SDK)\lib\x64\LeapCSharp.dll" "$(TargetDir)"
```

xcopy /yr "C:\Users\Acer\Desktop\LeapDeveloperKit_2.2.7+30199_win\LeapSDK\lib\x64\Leap.dll" "$(TargetDir)"

xcopy /yr "C:\Users\Acer\Desktop\LeapDeveloperKit_2.2.7+30199_win\LeapSDK\lib\x64\LeapCSharp.dll" "$(TargetDir)"

● **Using the Source Code & Gesture detection**

Source Code is in Form1.cs!

```csharp
public void LeapEventNotification(string EventName)
{
    if (!this.InvokeRequired)
    {
        switch (EventName)
        {
            case "onInit":

                break;
            case "onConnect":
                connectHandler();
                break;
            case "onFrame":
                detectGesture(this.controller.Frame());
                break;
        }
    }
    else
    {
        BeginInvoke(new LeapEventDelegate(LeapEventNotification), new object[] { EventName });
    }
}
```

When Connected → Call connectHandler()

```csharp
public void connectHandler()
{
    this.controller.EnableGesture(Gesture.GestureType.TYPE_CIRCLE);
    this.controller.EnableGesture(Gesture.GestureType.TYPE_KEY_TAP);
    this.controller.EnableGesture(Gesture.GestureType.TYPE_SWIPE);
    this.controller.EnableGesture(Gesture.GestureType.TYPE_SCREEN_TAP);

}
```

When OnFrame → Call detectGesture(this.controller.Frame())

```csharp
public void detectGesture(Leap.Frame frame)
{
    GestureList gestures = frame.Gestures(); //Return a list of gestures
    for (int i = 0; i<gestures.Count(); i++) // enumerate all the gestures detected in a frame
    {
        Gesture gesture = gestures[i];
        switch (gesture.Type)
        {
            case Gesture.GestureType.TYPE_CIRCLE:
                richTextBox1.AppendText("Circle detected!" + Environment.NewLine);
                break;
            case Gesture.GestureType.TYPE_KEY_TAP:
                richTextBox1.AppendText("Key Tap detected!" + Environment.NewLine);
                break;
            case Gesture.GestureType.TYPE_SWIPE:
                richTextBox1.AppendText("Swipe detected!" + Environment.NewLine);
                break;
            case Gesture.GestureType.TYPE_SCREEN_TAP:
                richTextBox1.AppendText("Screen Tap detected!" + Environment.NewLine);
                break;
        }
    }
}
```
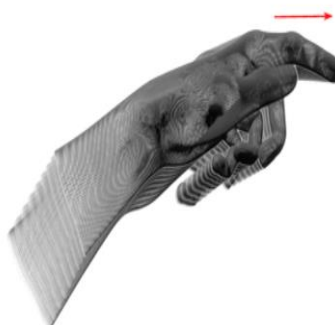
Connect Leap Motion to your computer!

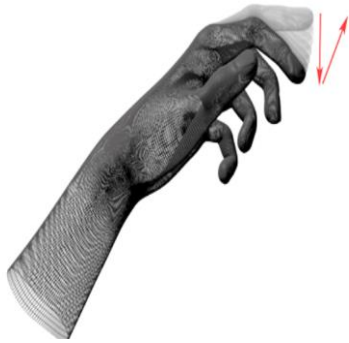When Press Start, it will show the GUI and detect the Four Gestures!
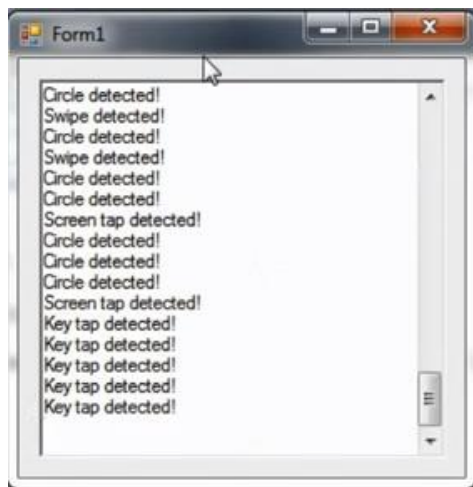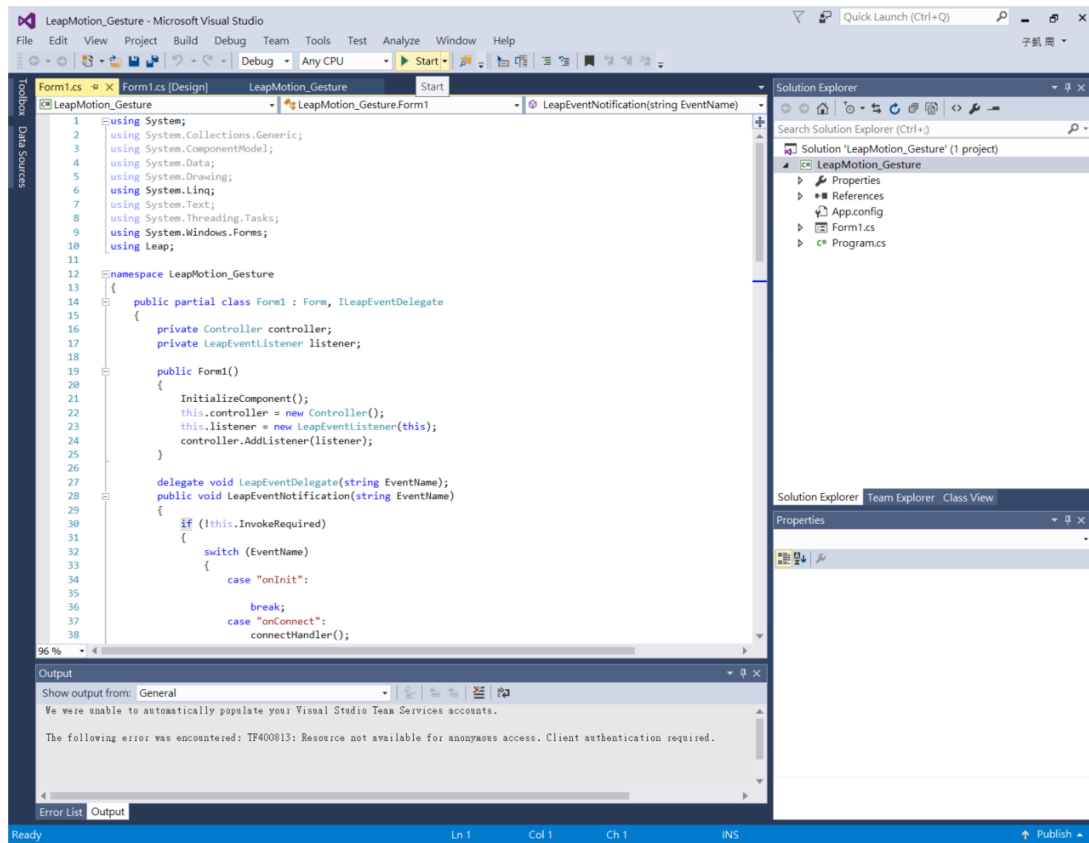
Circle Gesture                    ScreenTapGesture

KeyTapGesture                    SwipeGesture



- **References:**

https://www.youtube.com/watch?v=bGDqdbRmslI&list=PLY_-oT2VZL2NYtoL7ez1iAN_S2aLysoP3&index=4

https://developer.leapmotion.com/documentation/v2/csharp/devguide/Project_Setup_WinForms.html

https://developer.leapmotion.com/sdk/v2