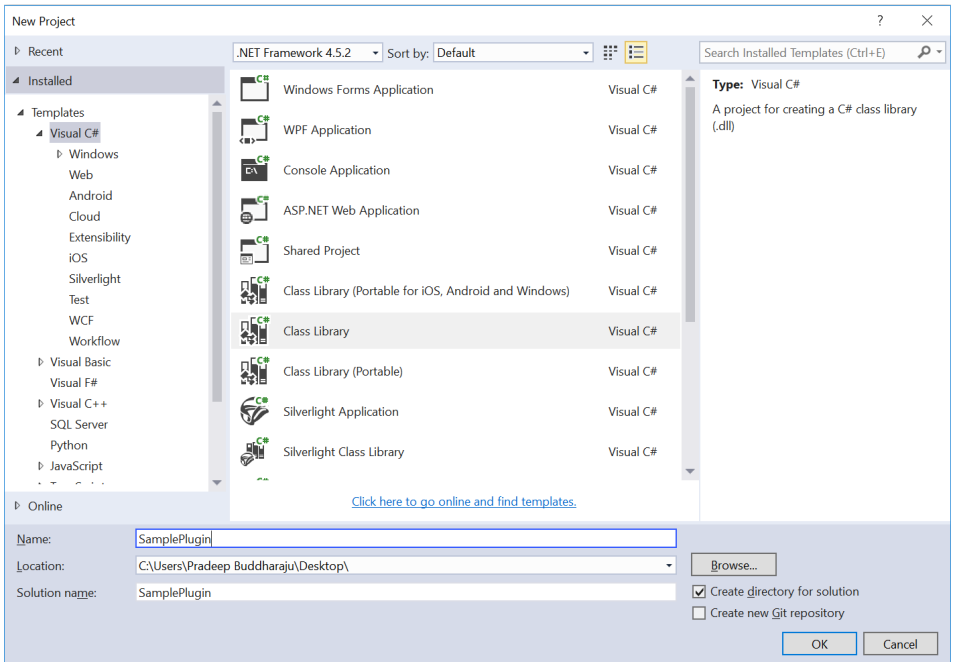
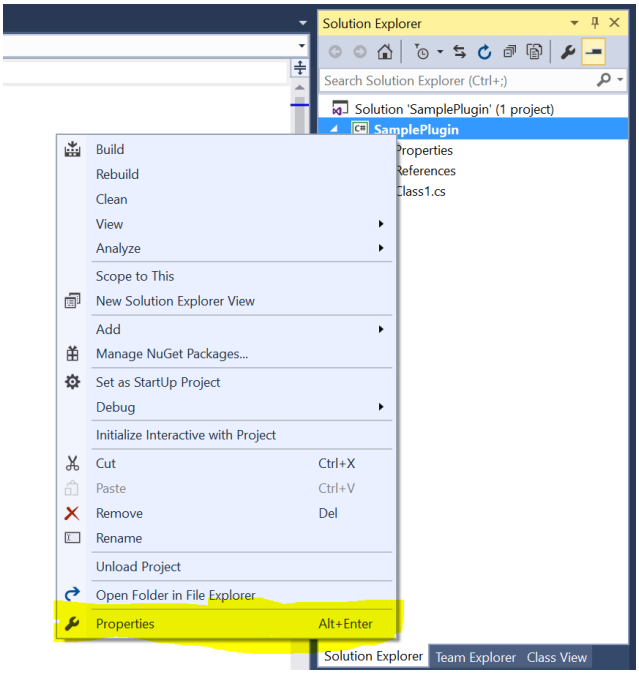
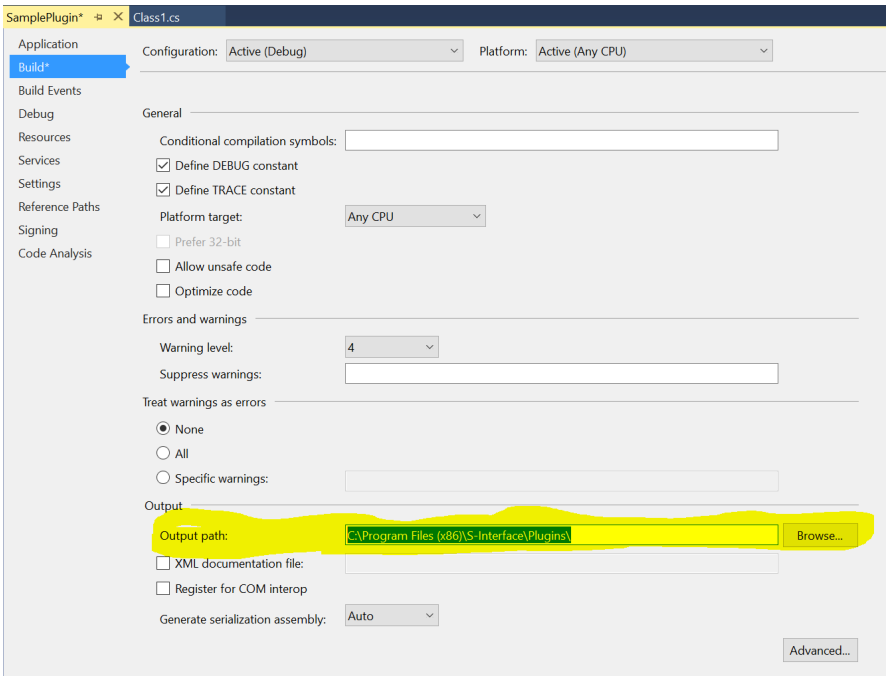
1. Create a New Project of type Class Library
    - From the ***Visual Studio*** menu, select ***File → New → Project***
    - From the window that pops up, expand the ***Templates*** group, select ***Visual C#***, and on the right, select ***Class Library***.
    - Enter the appropriate ***Name*** for your plugin, choose the ***Location*** where you would like to save the project, and click ***OK***.



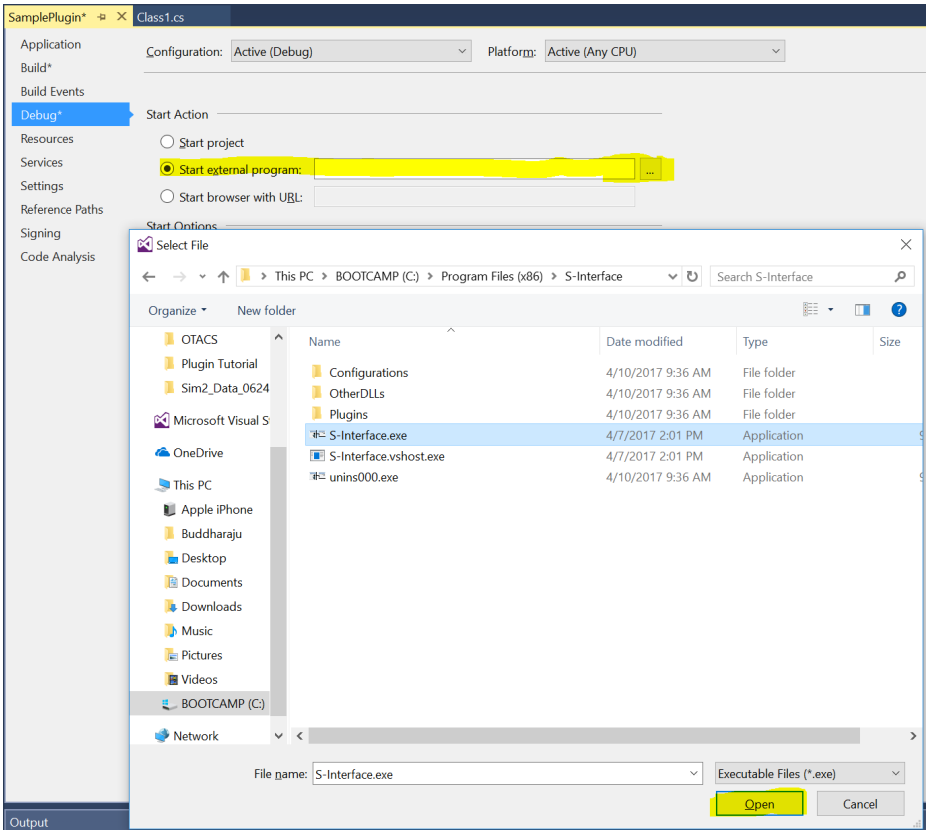
2. Change the Project Properties
    - In the ***Solution Explorer***, right click on your project name, select ***Properties***



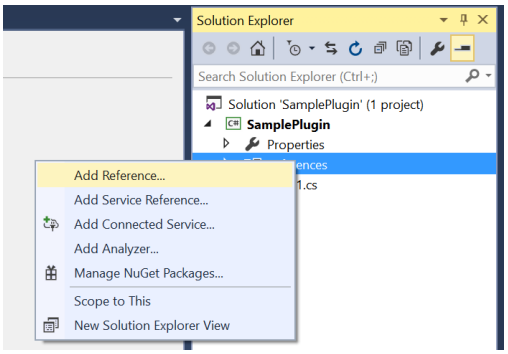
- Select ***Build*** tab on the left, and change the ***Output Path*** to ***C:\Program Files (x86)\S-Interface\Plugins***



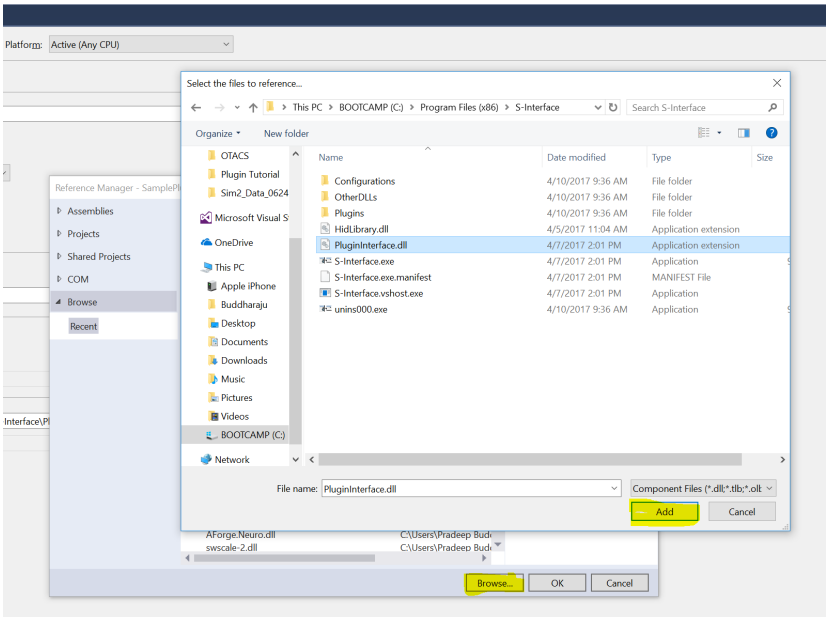
- Select ***Debug*** tab on the left, and from the ***Start Action*** group select ***Start external program***. Click on the browse button on the right, and navigate to the path ***C:\Program Files (x86)\S-Interface*** and select ***S-interface.exe*** file, and click ***Open***



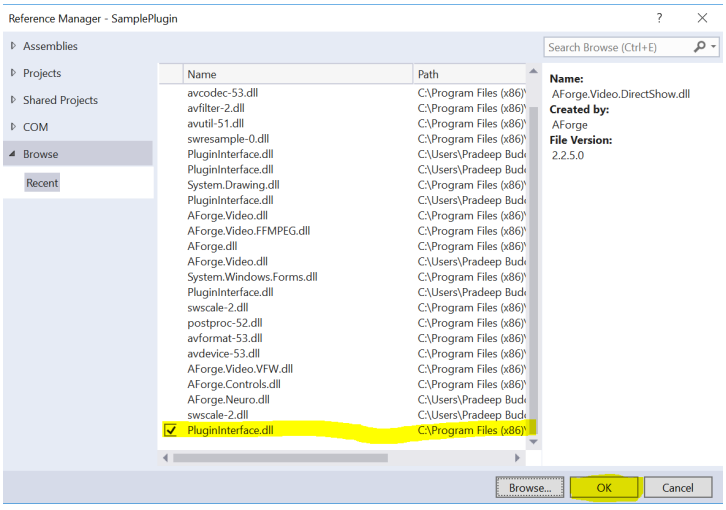
3. Add a reference to ***PluginInterface.dll***
    - In the ***Solution Explorer***, right click on ***References***, select ***Add Reference…***



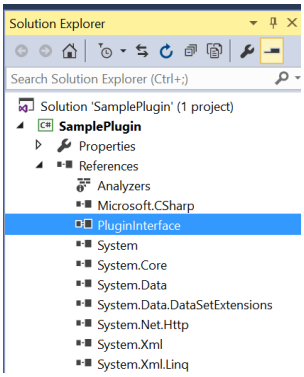
    - In the Reference Manager window, click ***Browse***. Navigate to the folder ***C:\Program Files (x86)\S-Interface***, select ***PluginInterface.dll***, and click ***Add***



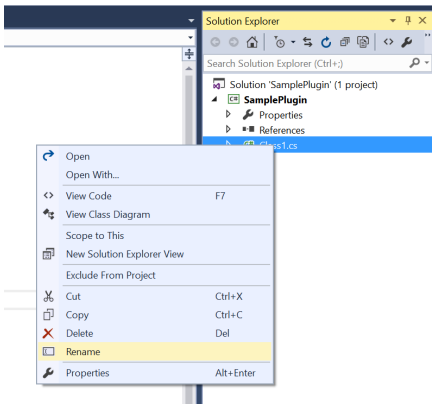
    - In the Reference Manager window, make sure that the ***PluginInterface.dll*** is selected, and click ***OK***.



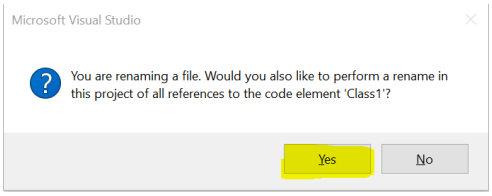
- You should now see ***PluginInterface*** in the list of your project ***References***



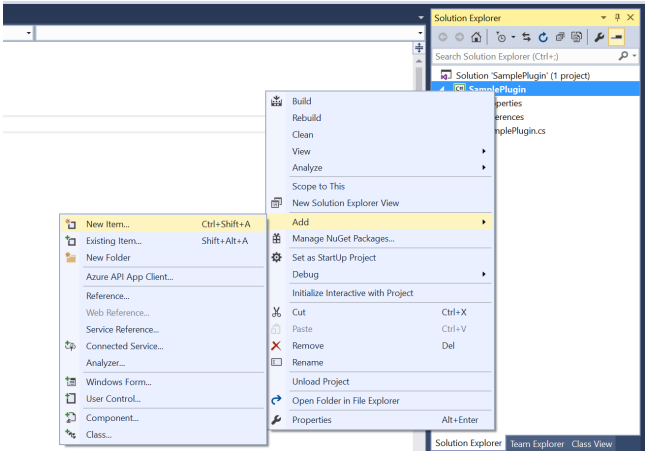
4. Rename the Class
    - Right click on ***Class1.cs***, select ***Rename***, and enter your plugin name



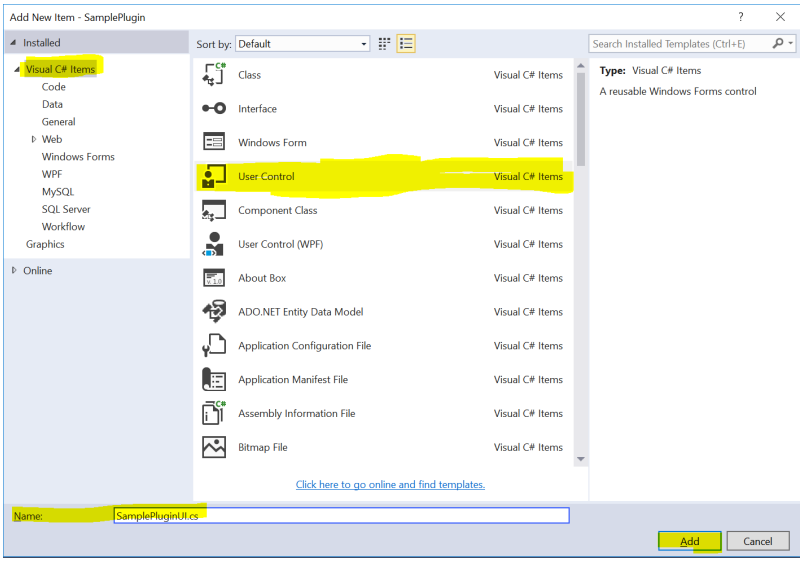
    - In the warning window, click ***YES***



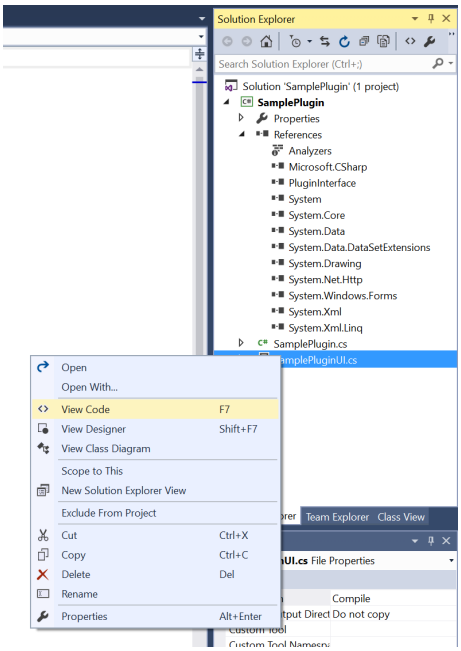
5. Create a User Control for the plugin
    - Right click on the project name, select ***Add***, and select ***New Item…***



- In the ***Add New Item*** window, make sure ***Visual C# Items*** is selected on the left, and then select ***User Control*** on the right. Enter an appropriate ***Name*** to the user control, and click ***Add***



6. Update the User Control class
    - Right click on ***SamplePluginUI.cs*** class, and select ***View Code***



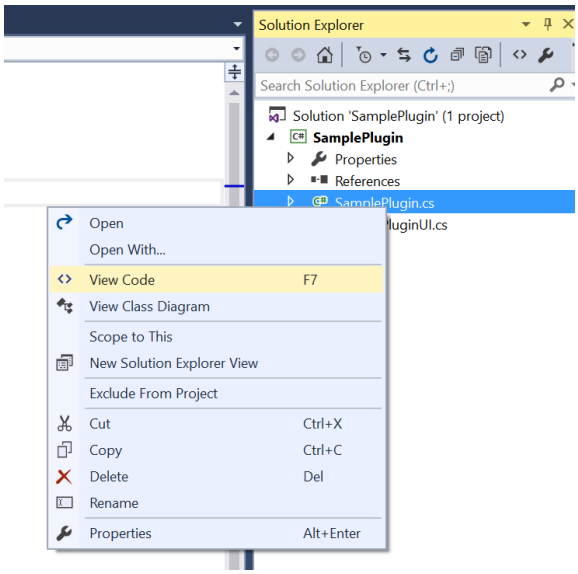
- In ***SamplePlugin.cs***, add the following member variable:

```
SamplePlugin plugin;
```

- In ***SamplePlugin.cs***, add the following constructor overload method:

```
public SamplePluginUI(SamplePlugin setPlugin)
{
    InitializeComponent();
    plugin = setPlugin;
}
```

7. Update the plugin class
    - Right click on ***SamplePlugin.cs*** class, and select ***View Code***



    - In ***SamplePlugin.cs*** class, add the following namespace declarations:
      ```
      using PluginInterface;
      using System.Collections;
      ```
    - In ***SamplePlugin.cs*** class, modify the ***SamplePlugin.cs*** class declaration to inherit from ***IPlugin*** interface:
      ```
      public class SamplePlugin: IPlugin
      ```
    - Suppose your plugin need two input pins (one ***Critical*** pin of type ***string*** named ***sampleInputPin1*** and one ***Optional*** pin of type ***integer*** named ***sampleInputPin2***) and one output pin (of type ***integer*** named ***sampleOutputPin***). In ***SamplePlugin.cs*** class, add the following member variables:

```
        string myName = "SamplePlugin";
        string myDescription = "This is a sample plugin";
        string myAuthor = "Pradeep Buddharaju";
        string myVersion = "1.0.0";
        IPluginHost myHost = null;
        int myID = -1;
        System.Windows.Forms.UserControl myMainInterface;
        ArrayList inPins = new ArrayList();
        ArrayList outPins = new ArrayList();
        IPin sampleInputPin1 = null;
        IPin sampleInputPin2 = null;
        IPin sampleOutputPin = null;

        public string Description
        {
            get { return myDescription; }
        }

        public string Author
        {
            get { return myAuthor; }
        }
```

```
        public IPluginHost Host
        {
            get { return myHost; }
            set { myHost = value; }
        }

        public int MyID
        {
            get { return myID; }
            set { myID = value; }
        }

        public string Name
        {
            get { return myName; }
        }

        public System.Windows.Forms.UserControl MainInterface
        {
            get { return myMainInterface; }
        }

        public string Version
        {
            get { return myVersion; }
        }

        public ArrayList InputPins
        {
            get { return inPins; }
        }

        public ArrayList OutputPins
        {
            get { return outPins; }
        }
```

- In ***SamplePlugin.cs*** class, add the following required methods:

```
        public void Initialize()
        {
            //This is the first Function called by the host...
            sampleInputPin1 = Host.LoadOrCreatePin("Input1",
PinCategory.Critical, new Type[] { typeof(StringData) });
            inPins.Add(sampleInputPin1);

            sampleInputPin2 = Host.LoadOrCreatePin("Input2",
PinCategory.Optional, new Type[] { typeof(IntegerData) });
            inPins.Add(sampleInputPin2);

            sampleOutputPin = Host.LoadOrCreatePin("Output1",
PinCategory.Optional, new Type[] { typeof(IntegerData) });
            outPins.Add(sampleOutputPin);

            myMainInterface = new SamplePluginUI(this);
        }
```

```
        public void Dispose()
        {
            //Put any cleanup code in here for when the program is stopped
        }

        public void Process(IPin pin, IPinData input)
        {
            //Put process code here

            //   this.Host.SignalCriticalProcessingIsFinished(inImage, this);
            if (pin == sampleInputPin1)
            {
                if (input != null)
                {
                    //code to process the input pin...

                    //Suppose you are ready to send output on output pin
                    this.Host.SendData(sampleOutputPin, new IntegerData(0),
this);

                    //Since sampleInputPin1 is a critical pin, signal that its
processing is done

this.Host.SignalCriticalProcessingIsFinished(sampleInputPin1, this);
                }
            }

            //   this.Host.SignalCriticalProcessingIsFinished(inImage, this);
            if (pin == sampleInputPin2)
            {
                if (input != null)
                {
                    //code to process the input pin...

                    //Note that sampleInputPin2 is a optional pin, so no need
to signal that its processing is done
                }
            }

        }
```

8. ***Build*** the solution and click on ***Start*** to run the executable. S-Interface UI will be loaded, and if you choose your plugin in the ***Create Configuration*** dropdown, you will see your plugin graph with the corresponding input and output pins.