Course: EGDF20
Module: EGE202 Application Programming

SDL1: Setting Up and Familiarization with Visual Studio IDE

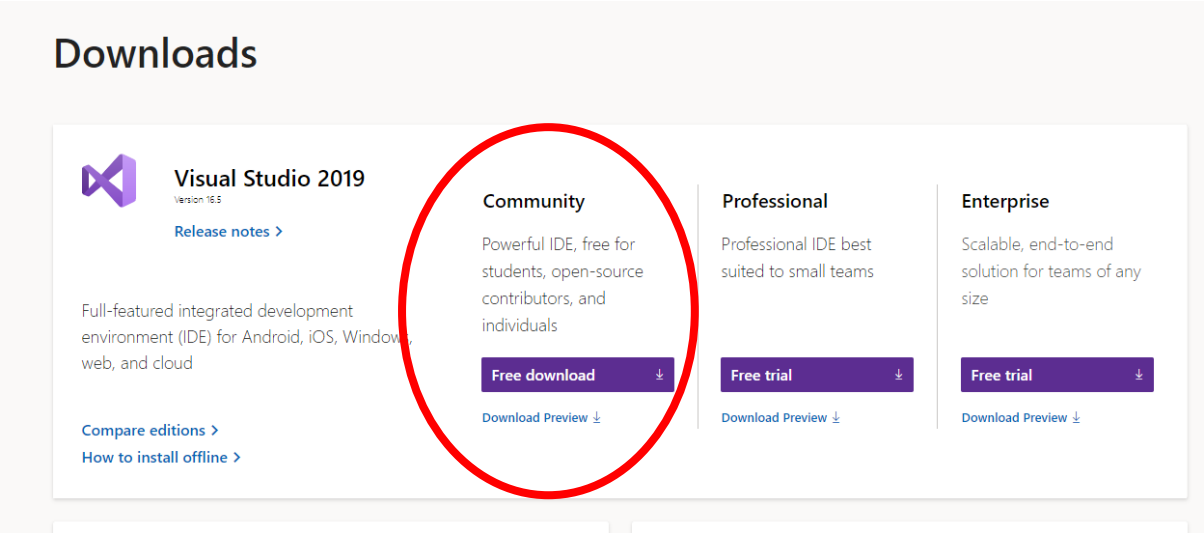
Objectives: At the end of this lab, the student should be familiar with procedure in installing Visual Studio and developing WinForm application.

Part 1: Preparing Visual Studio IDE

Exercise 1 –Setting Up Visual Studio

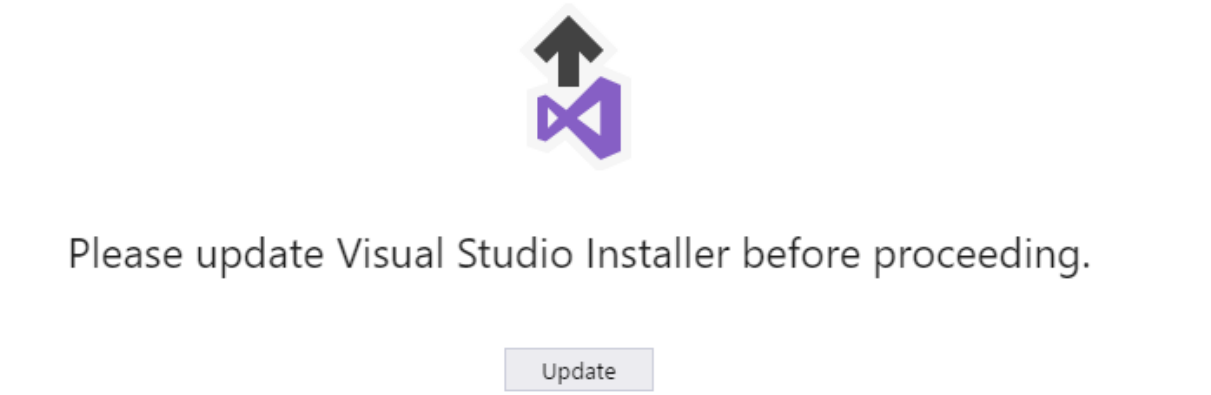
Step 1: Download Visual Studio Community

Website: https://visualstudio.microsoft.com/downloads/

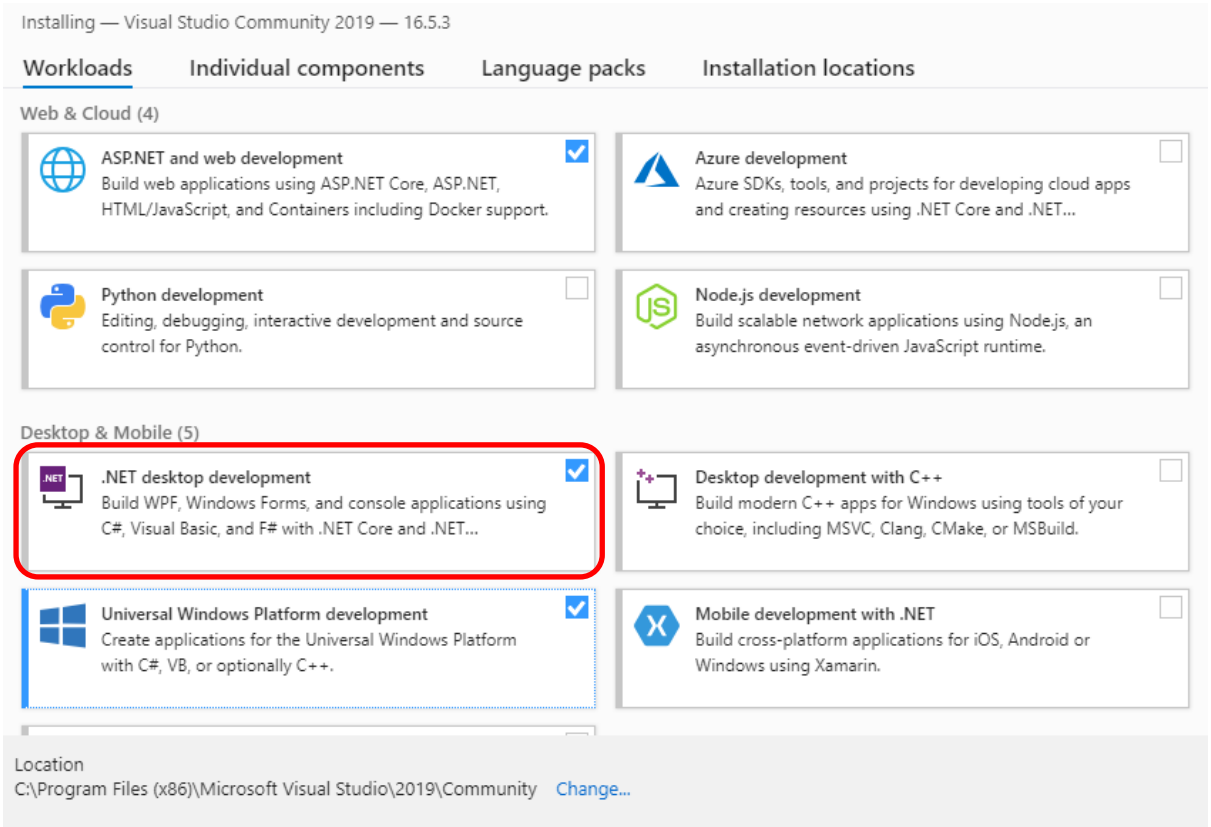


Step 2: Install Visual Studio Community

- Run the installer file that you have downloaded
- Update the installer if required (you will receive a prompt)



- On **Workloads** tab, choose the required packages
    - .NET Desktop Development (For WinForm Application)



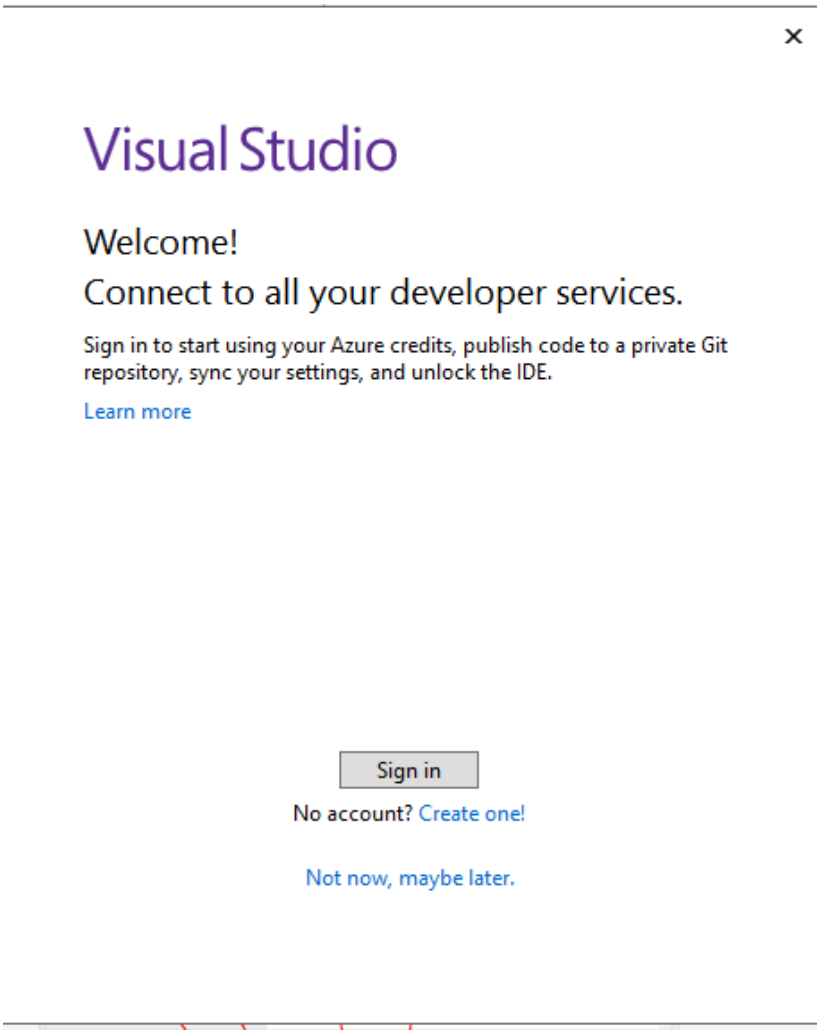
- Then click install to complete the installation

Exercise 2 – Familiarizing with Visual Studio IDE

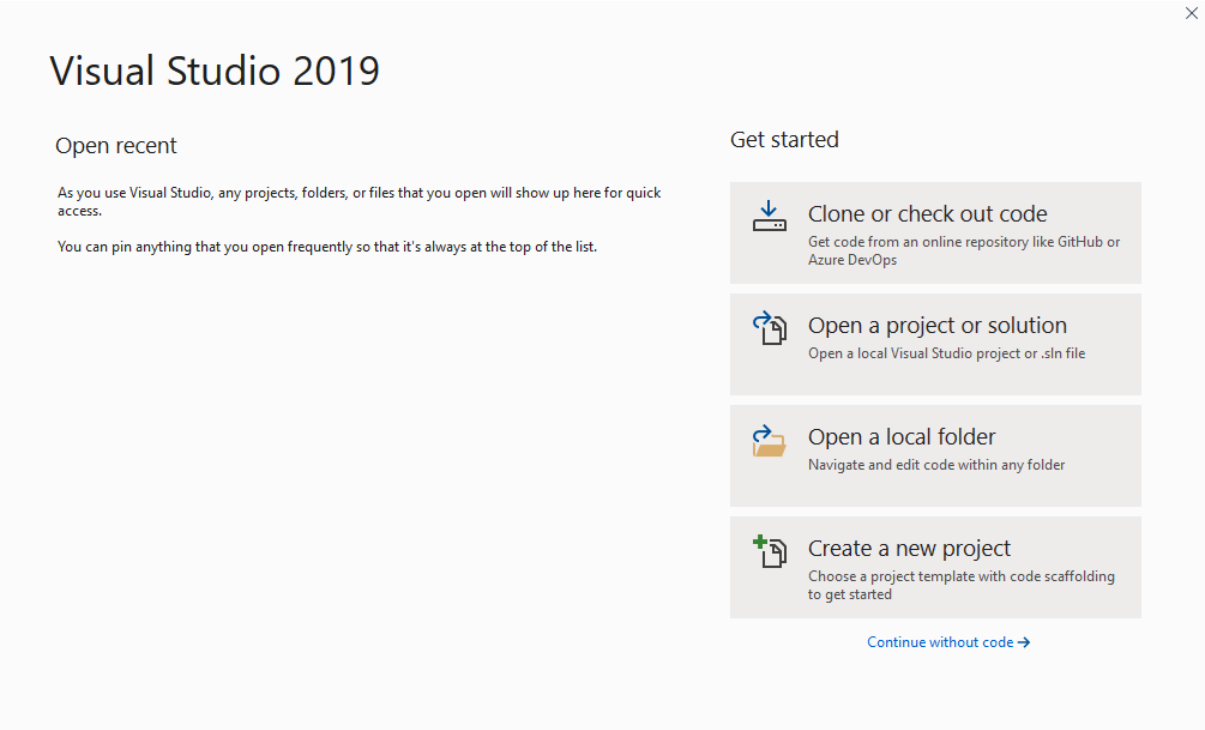
Part 1: Running the Visual Studio IDE

1. Click on the *Window Start* menu in your Windows environment and search for ***Visual Studio 2019***.
2. Click on the ***Visual Studio 2019*** icon to run the program.
3. If you are running Visual Studio for the first time, you are asked to sign in. **You can use any Outlook, Hotmail or NYP student email to sign in.**

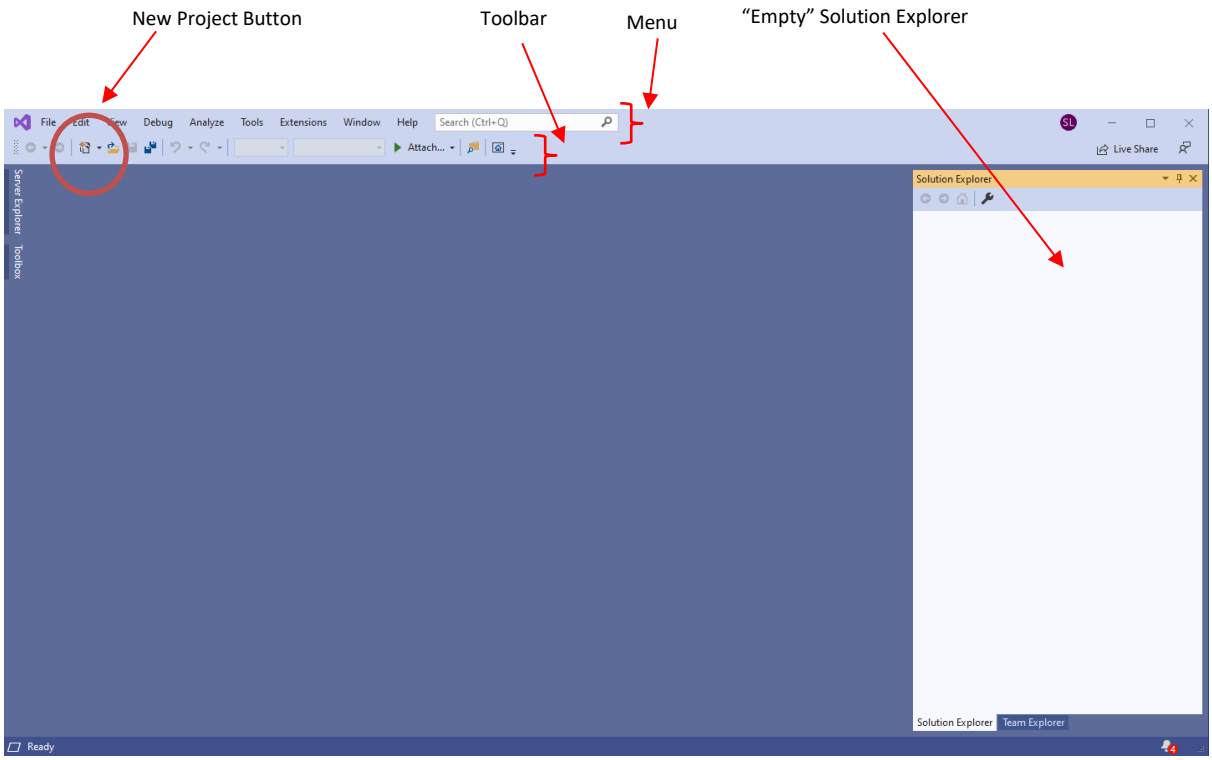
   Optionally you can temporary skip this process by choosing "Not now, maybe later" option



4. After that, you should see a screen like the following screen:

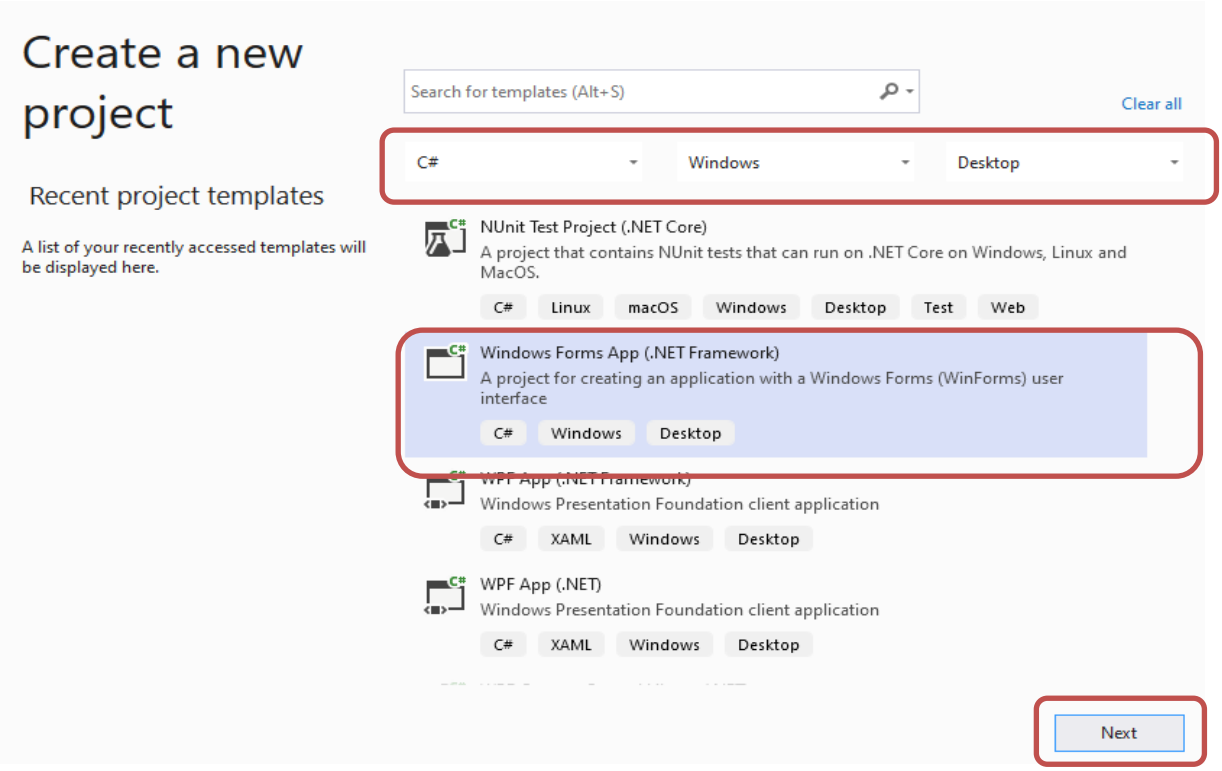


5. For now, we will select **"Continue without code".** Then you will be presented the following screen.

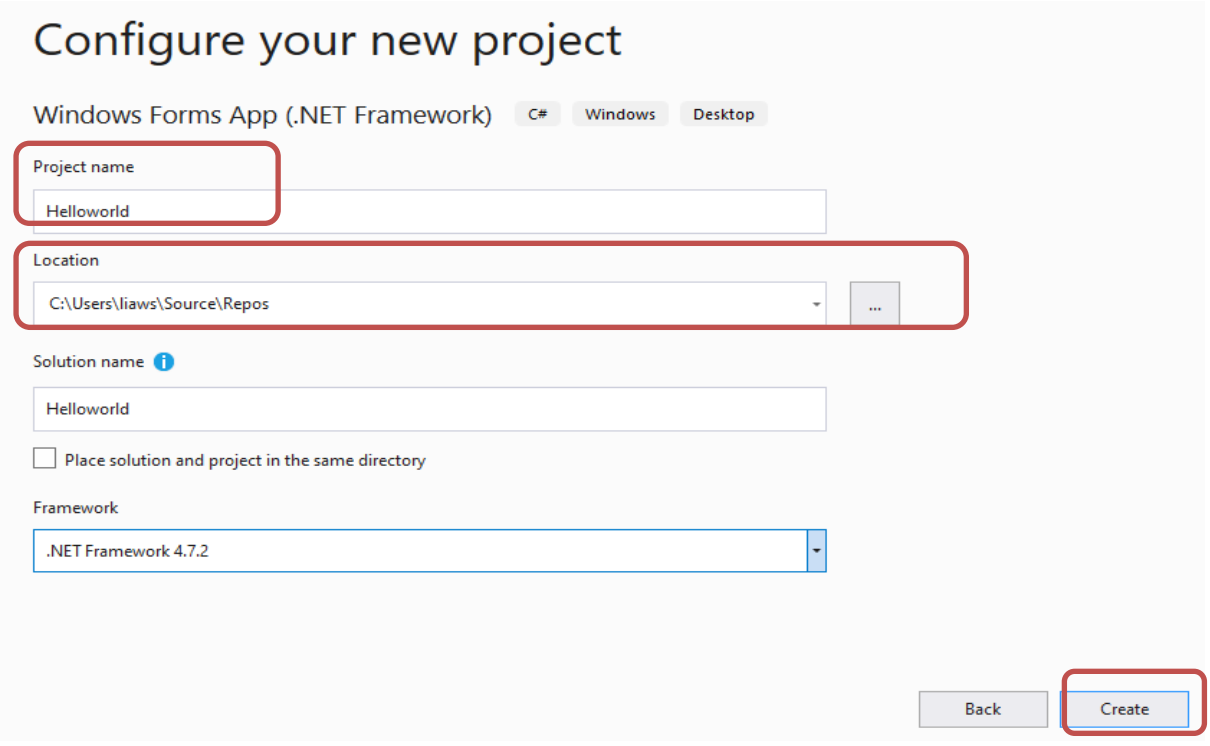


Part 2: Creating a WinForm Application

1. From the menu select ***File***, then click ***New -> Project*** to create a new project. Alternatively, you can use the ***New Project*** button.

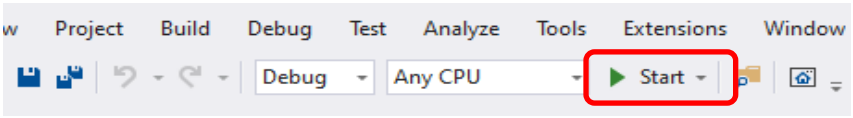


2. From the pop-up dialog, select ***"C#"*** for the Language filter, ***"Window***s" for the Platform filter and ***"Desktop"*** for the Project type filter.
3. Then choose ***Windows Form App (.NETFramework)*** and click the ***Next*** button.

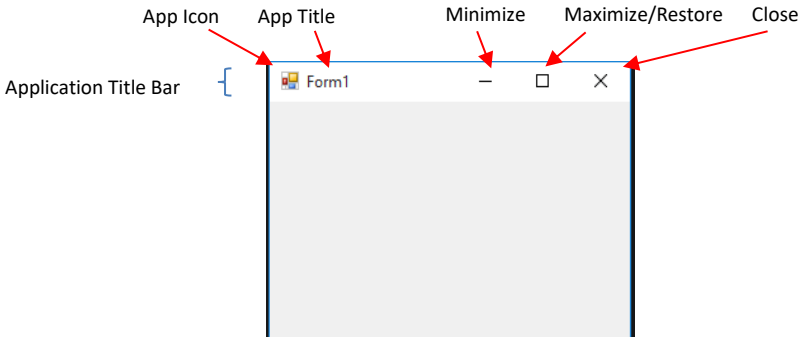


4. Type the name of your new project as ***Helloworld*** and keep the Solution name the same as Project name.
5. Take note of the ***Location*** of where your project is created. You can either use the default or set the ***Location*** to point the project to your own created folder
6. **Do not** tick on the check-box of [☐ **Place solution and project in the same directory**].
7. Click the **Create** button to and Visual Studio will start creating the required project files.

8. Once project is created click on the **Start** button on the Visual Studio menu to execute or run the application that we just created. (Alternatively press F5 or Ctrll+F5)



9. Make sure that the program execute correctly. You should see a Windows application running (See figure below). The application comes with a default application icon, title and the standard (minimize, maximize and close) buttons.



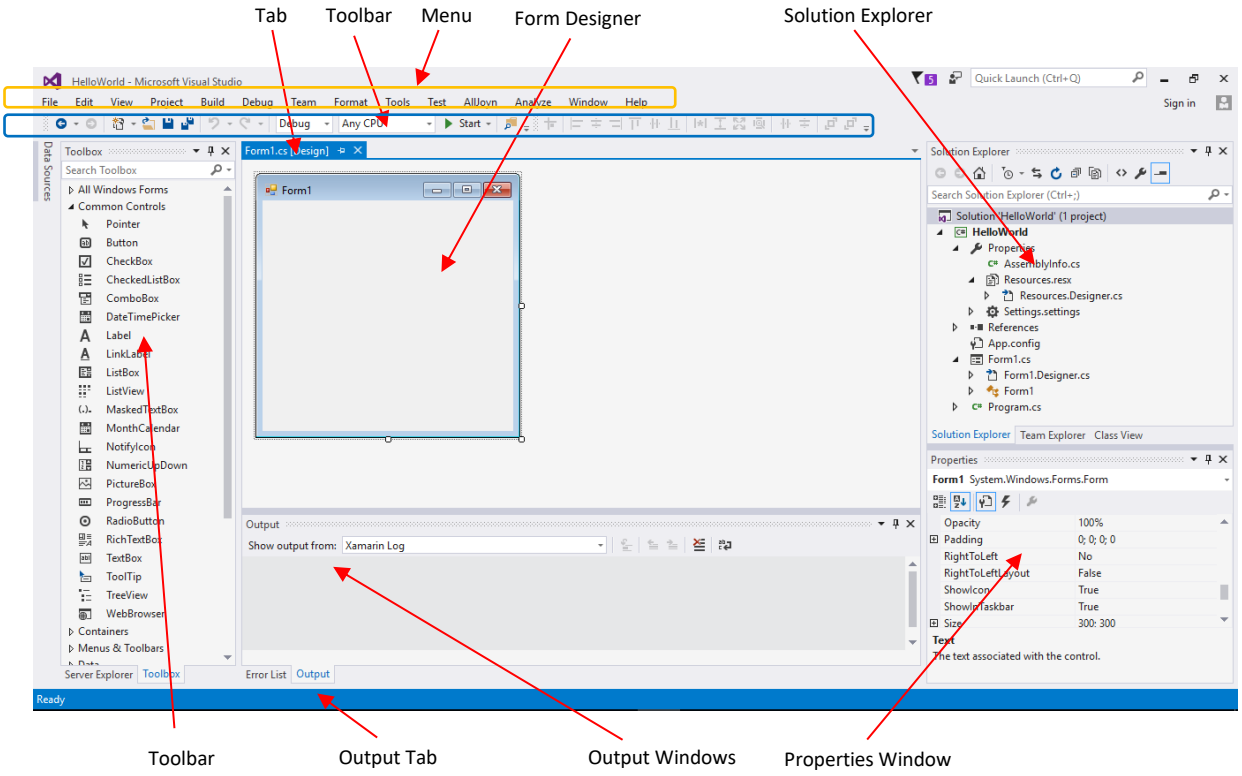
10. Try out the following actions and record down your observation.

No	Actions	Observation
1	Double Click on the Title Bar	
2	Right Click on the Title Bar	
3	Click and drag the Title Bar until it reaches the left or right side of the Windows *Snap feature	
4	Click on the Maximize button, observe and then click on the same button again	
5	Move the mouse to any 4 corners of the application. When the cursor starts to change, click and drag	
6	Using the <F5> or <Ctrl + F5>, run the application multiple times and observe the location of the application on screen	

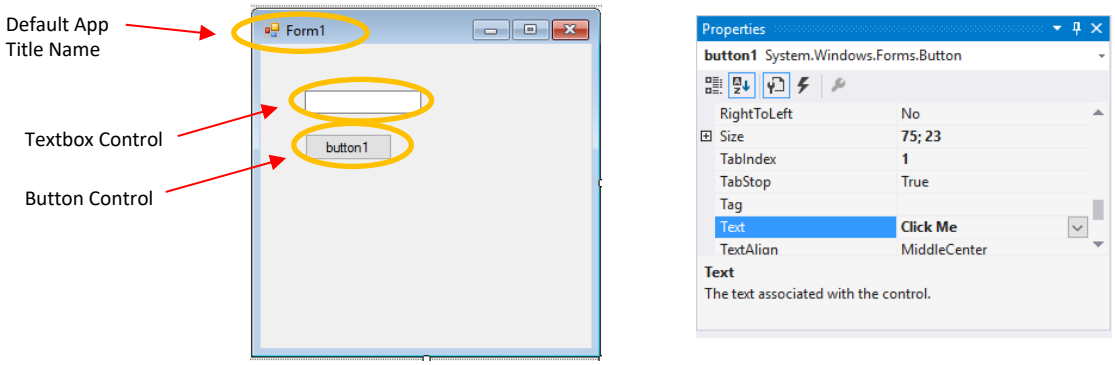
11. Under ***File*** menu, click ***Close Solution*** to close your project.

Part 3: Understanding Visual Studio IDE (Integrated Development Environment)

1. Reopen the previous solution. Under the ***File*** menu, click ***Open->Project/Solution***. Then navigate to the folder where the previous HelloWorld project is located. Choose the file "HelloWorld.sln" (Microsoft Visual Studio Solution).



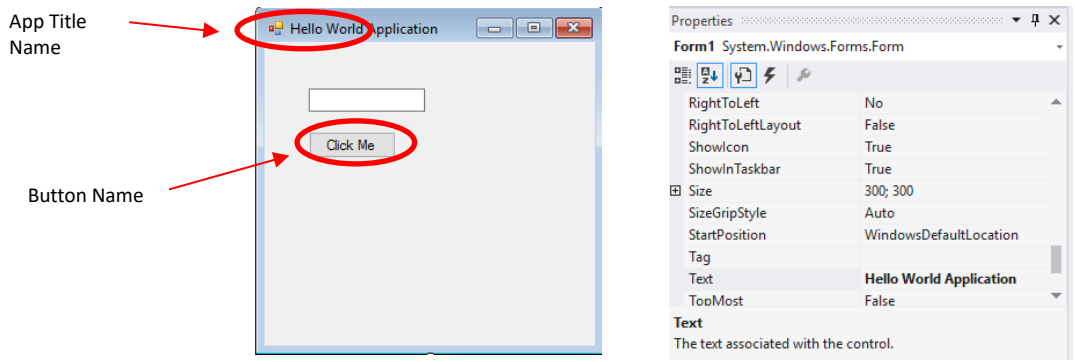
2. ***Solution Explorer*** window shows all the files used in the project solutions. Double click on "Form1.cs" will automatically bring you to the ***Form Designer*** tab. ***Form Designer*** is the tool to design the graphical user interface (GUI) of the application.
3. ***Toolbar*** window is a collection of controls which you can use to design your GUI. Drag a ***TextBox*** control and ***Button*** control onto the ***Form1*** window in the ***Form Designer.*** The name ***Form1*** is a default name that can be change. The ***Form1*** will look like the figure below:



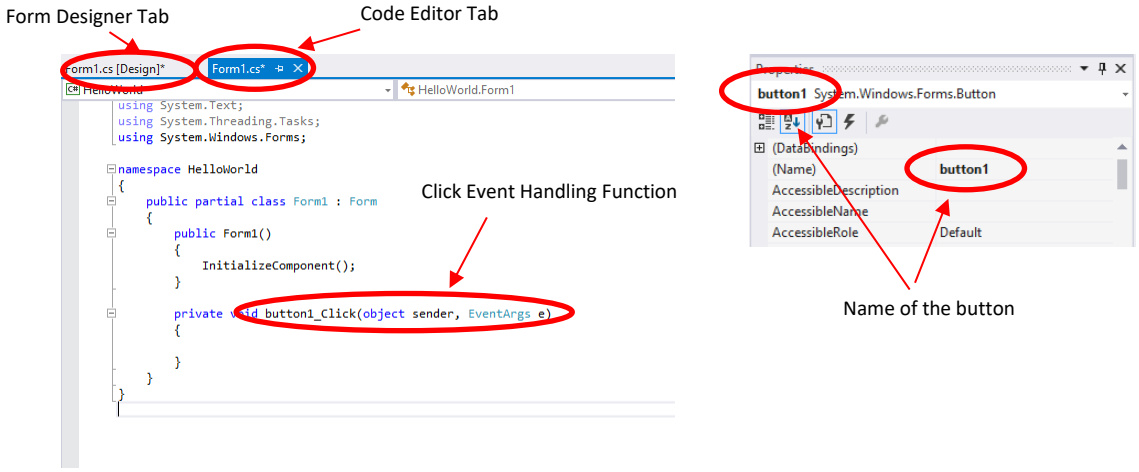
4. Select the ***Button*** control in the ***Form Designer***. On the ***Properties*** window, the properties of the selected ***Button*** control will automatically be shown. Modify the context of the

Text property from "button1" to "Click Me". Observe that the ***Button*** control will now show the word "Click Me".

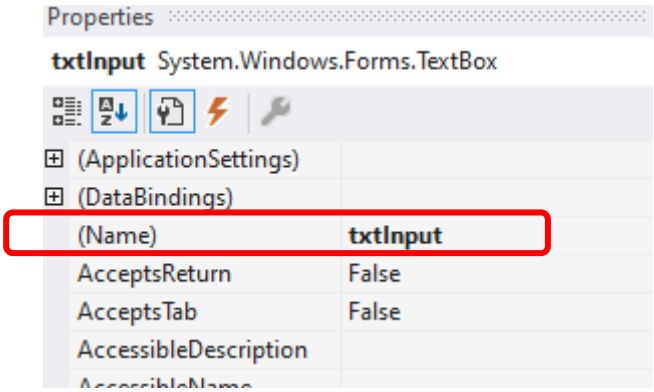
5. Select the ***Form*** control in the ***Form Designer***. In the ***Properties*** window of the ***Form*** control, change the ***TopMost*** property of the ***Form1*** to 'True'.
6. On the ***Properties*** window, the properties of the selected ***Form*** control will automatically be shown. Modify the context of the *Text* property from "Form1" to "Hello World Application". Observe that the application title will now show the word "Hello World Application".



7. Double click on the "Click Me" ***Button*** in the ***Form Designer***. That will automatically open the "Form1.cs" file. The event handling function *button1_Click (…)* is automatically appended to the file. The default naming convention for the function is *{control name}_{event type} (…)*



8. Select the ***Textbox*** control in the ***Form Designer***. On the ***Properties*** window, the properties of the selected ***Textbox*** control will automatically be shown. Modify the content of the ***(Name)*** property from "textBox1" to "txtInput".



9. At the code editor for "Form1.cs" modify *button1_Click (…)* to include the following codes:

```
private void button1_Click(object sender, EventArgs e)
{
    string str;
    str = txtInput.Text;
    str = "Hello World " + str;
    Console.WriteLine(str);
}
```

10. Build and debug your application by hitting <F5> key or from the menu ***Debug->Start Debugging***. Type in some words in the Textbox and click the "Click Me" Button. **Hint:** Observe the Output window. You must ensure the output tab is selected. (If output tab not is not visible, from the menu select ***Debug -> Windows -> Output.***