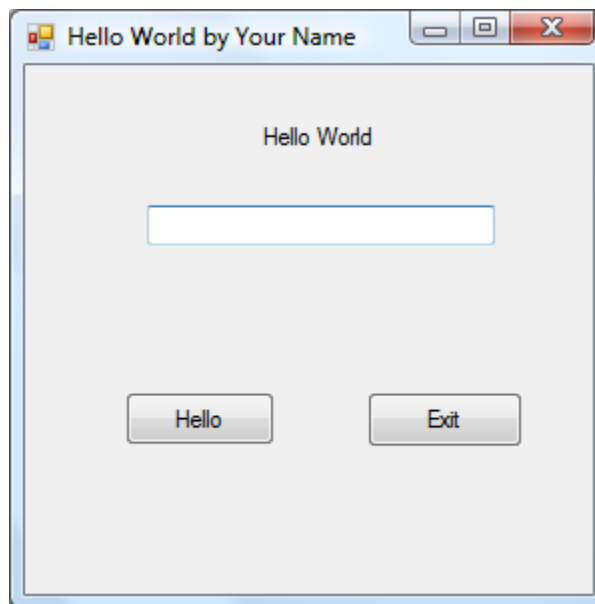


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Introduction to Using Microsoft Visual Studio

This document will walk you through the process of creating a Windows application project. You will need a separate Project for each assignment, so pay attention to the detailed steps as you go through this document, because you will be doing this throughout the semester. Only the required options and features to complete this assignment are included. Additional details will be revealed in the textbook and lecture notes.

1. The following instructions will lead to the development of a Windows application similar to this:

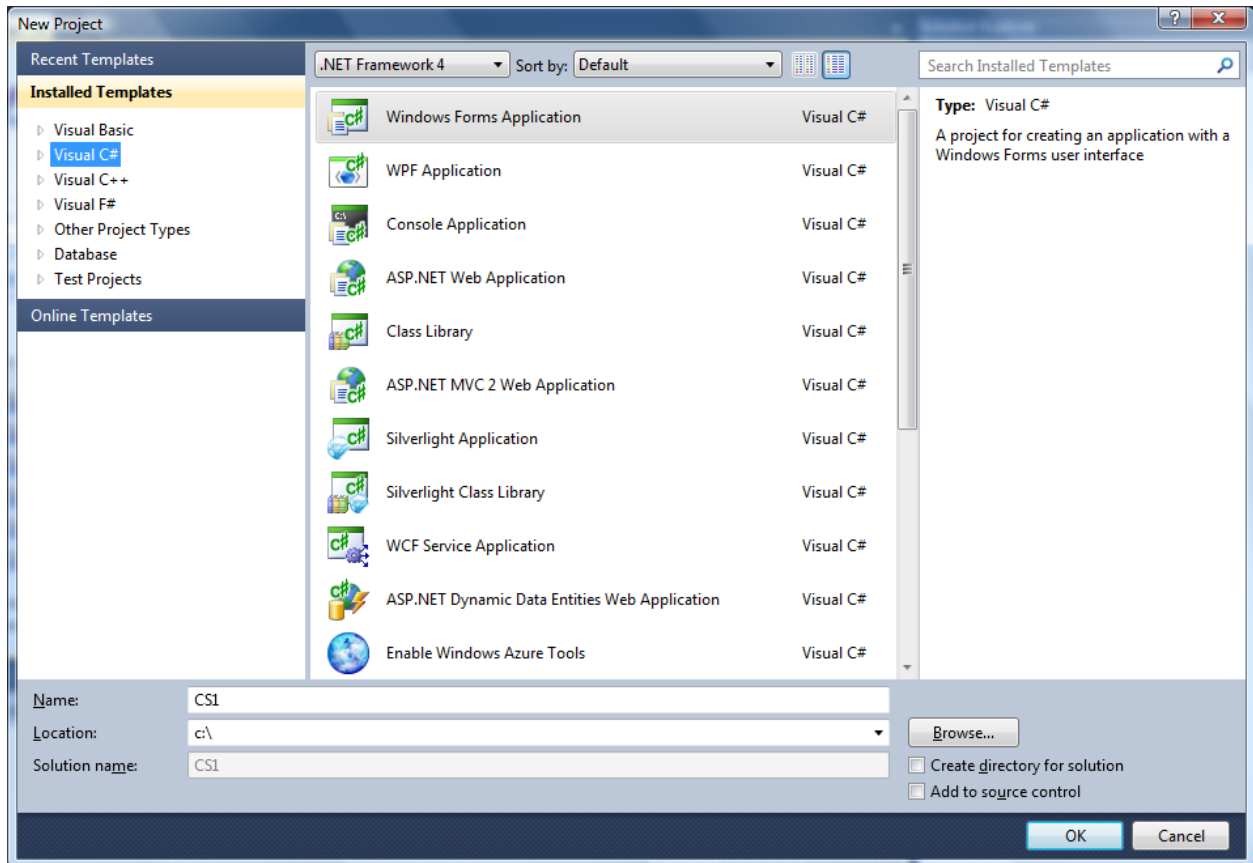


2. Before you begin put your name on your storage device (flash disk). Consider creating a folder with your name and a document with contact information.
3. Insert storage device into the appropriate connection on the computer.
4. Start Microsoft Visual Studio 2010 **or** Visual C++ 2010 Express Edition.
 - a. In Mesa Community College's computer lab open **Microsoft Visual Studio 2010**.
 - b. The program to open on your home computer will depend on which version was installed, **Microsoft Visual Studio 2010** or **Visual C# 2010 Express Edition**.
 - c. If necessary, maximize the application window to fill the whole screen by clicking the **maximize** button in the upper right-hand corner of the window.
 - d. The appearance of Start Pages will vary by version and will depend on who used it last and on the options selected.

- Each assignment must be stored in a separate project, and the process is different in **Microsoft Visual Studio Professional** and **Visual C# Express Edition**, so make sure you follow the instructions for the version of the software you are using.

Microsoft Visual Studio Professional:

- Click on **File** on the menu bar, scroll down and mouse over **New**, and then slide over and select **Project...**

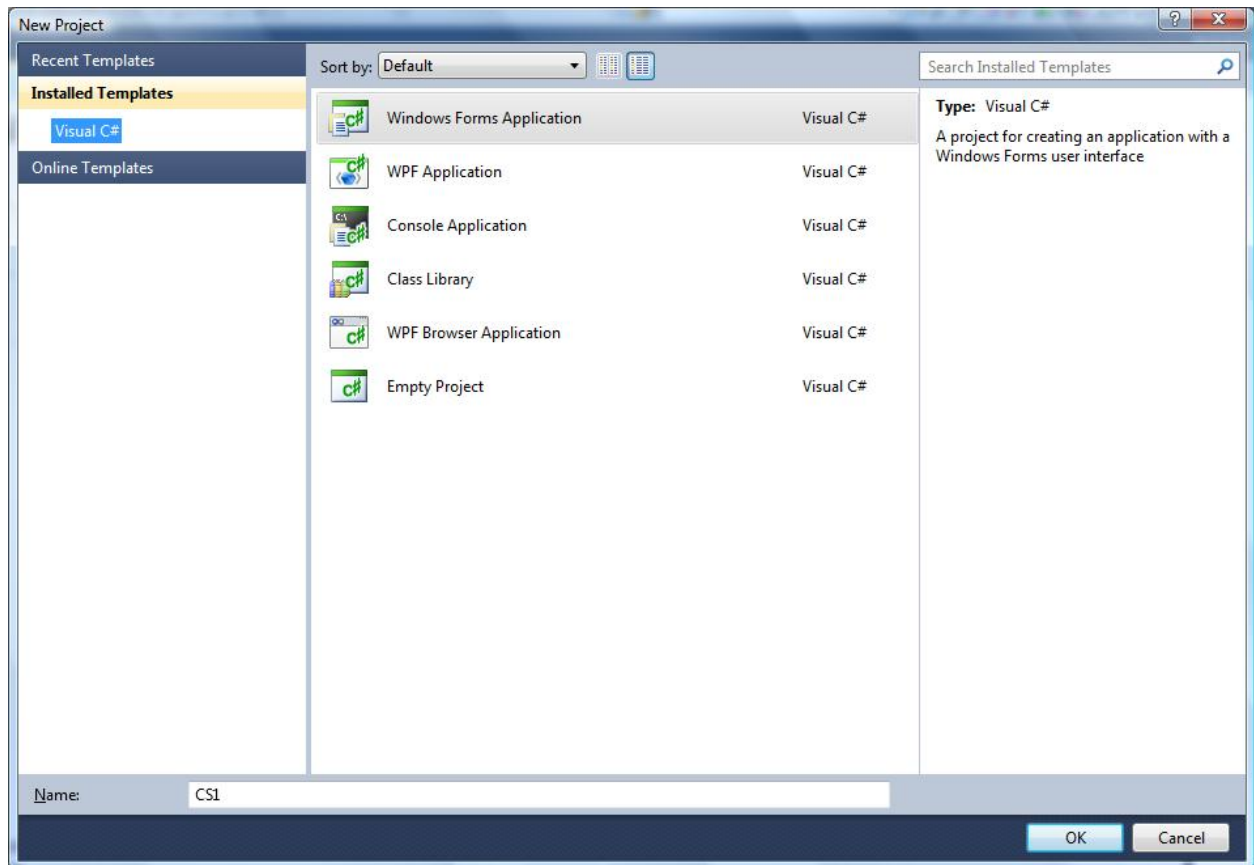


- From the list of Install Templates, click on **Visual C#**.
- From the list of Frameworks available at the top select **.Net Framework 4** in the dropdown list. If a newer version is installed, select it instead. The latest version is usually selected by default.
- The Templates in the middle can be displayed either in medium or small icons. **Select Medium Icons** by clicking on the Medium Icon button which is the button on the far right next to the Sort By box.
- In the list of **Templates** click on **Windows Forms Application**.
Note: Selecting anything else will cause your program not to work per these instructions.
- Enter **Name: CS1**
- To set the **Location:** use the **Browse...** button to navigate to the drive assigned to your storage device.

- h. The **Solution Name** should be the same as the application Name (CS1). It may already be grayed out if Create a directory for solution does not have a check mark as instructed on the next step.
- i. Click on the box in front of **Create a directory for solution** to remove the check mark if it has one.
- j. Click on **OK**.

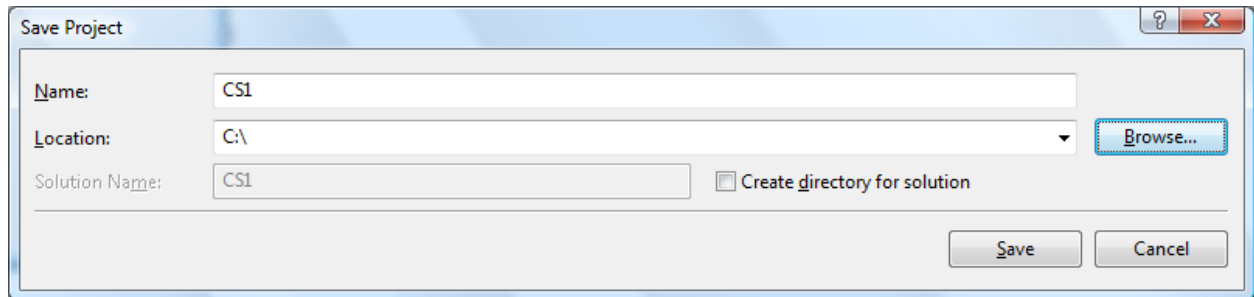
Microsoft Visual C# Express Edition:

- a. Click on **File** on the menu bar, scroll down and select **New Project...**



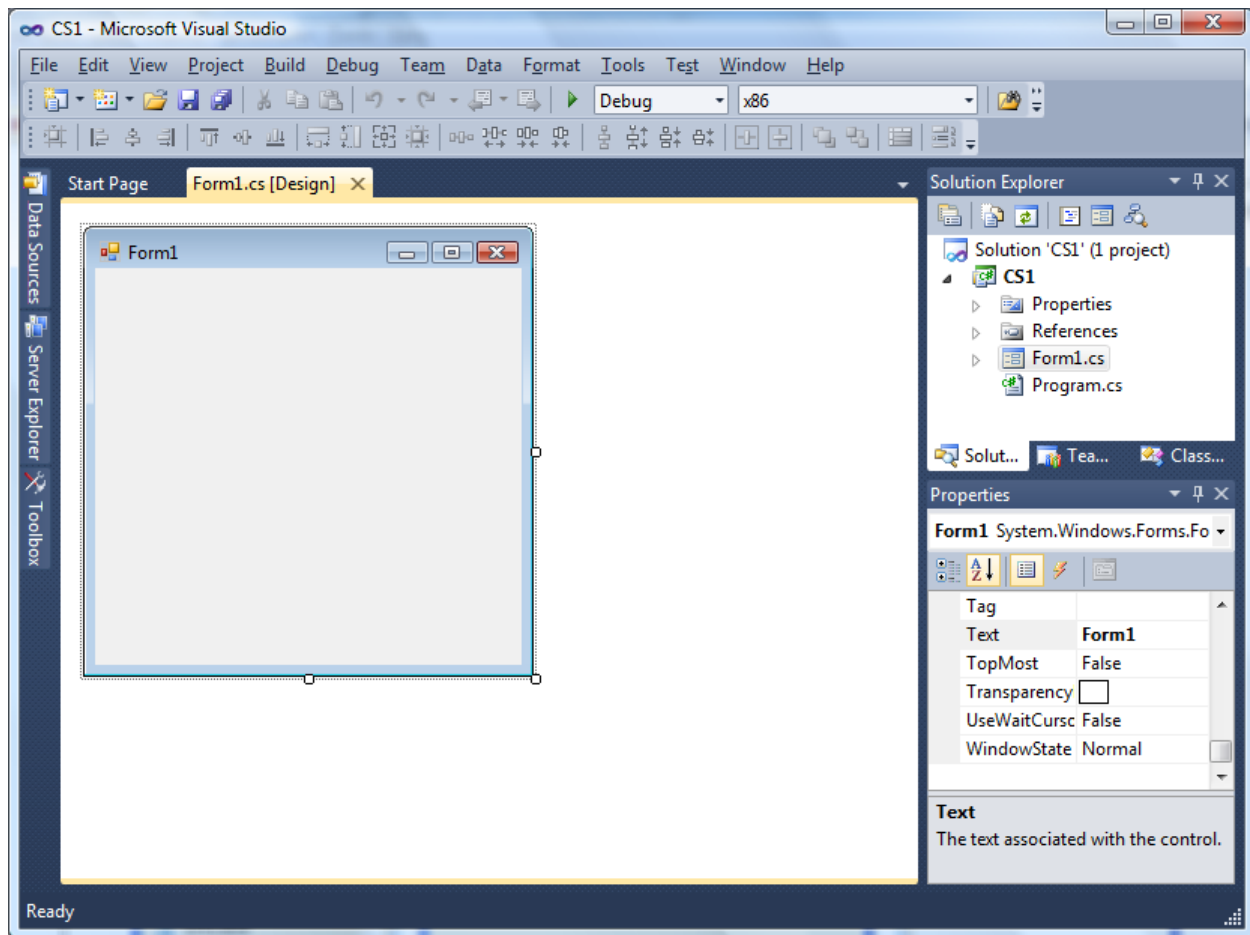
- b. The Templates in the middle can be displayed either in medium or small icons. **Select Medium Icons** by clicking on the Medium Icon button which is the button on the far right next to the Sort By box.
- c. In the list of **Templates** click on **Windows Forms Application**.
Note: Selecting anything else will cause your program not to work per these instructions.
- d. Enter **Name: CS1**
- e. After a few seconds, an empty form should appear.

- f. By default visual studio saves projects in the visual studio folder located on the hard drive. We will use the Save As command to save projects on a flash drive or in another folder.
- g. In the **Solution Explorer** window located on the upper-right side, click on **Solution CS1** one time to select it.
- h. Click on **File** on the menu bar, scroll down and select **Save CS1 As...** to open the Save Project dialog box.

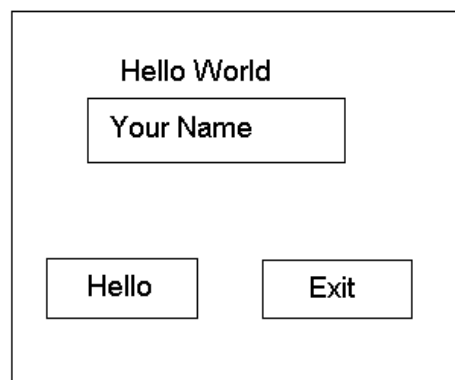


- i. Leave the project **Name** as **CS1**.
 - j. To set the **Location:** use the **Browse** button to navigate to the drive assigned to your storage device.
 - k. The **Solution Name** should be the same as the Name (CS1). It may already be grayed out if Create a directory for solution does not have a check mark as instructed on the next step.
 - l. Click on the box in front of **Create a directory for solution** to remove the check mark if it has one.
 - m. Click on **Save**.
 - n. **Express Edition Note:**
Building the actual application is the same in both versions of the software (Professional and Express), so images from the Visual Studio Professional will be used in the remainder of this document.
6. The files for the new project should appear on the right in the **Solution Explorer** pane, and an empty form should be displayed in the middle.
 - a. Reset the layout of the application. Click on **Window** on the menu bar, scroll down and **select Reset Window Layout**. On the prompt that asks you if you are sure you want to reset the layout, **click on Yes**.

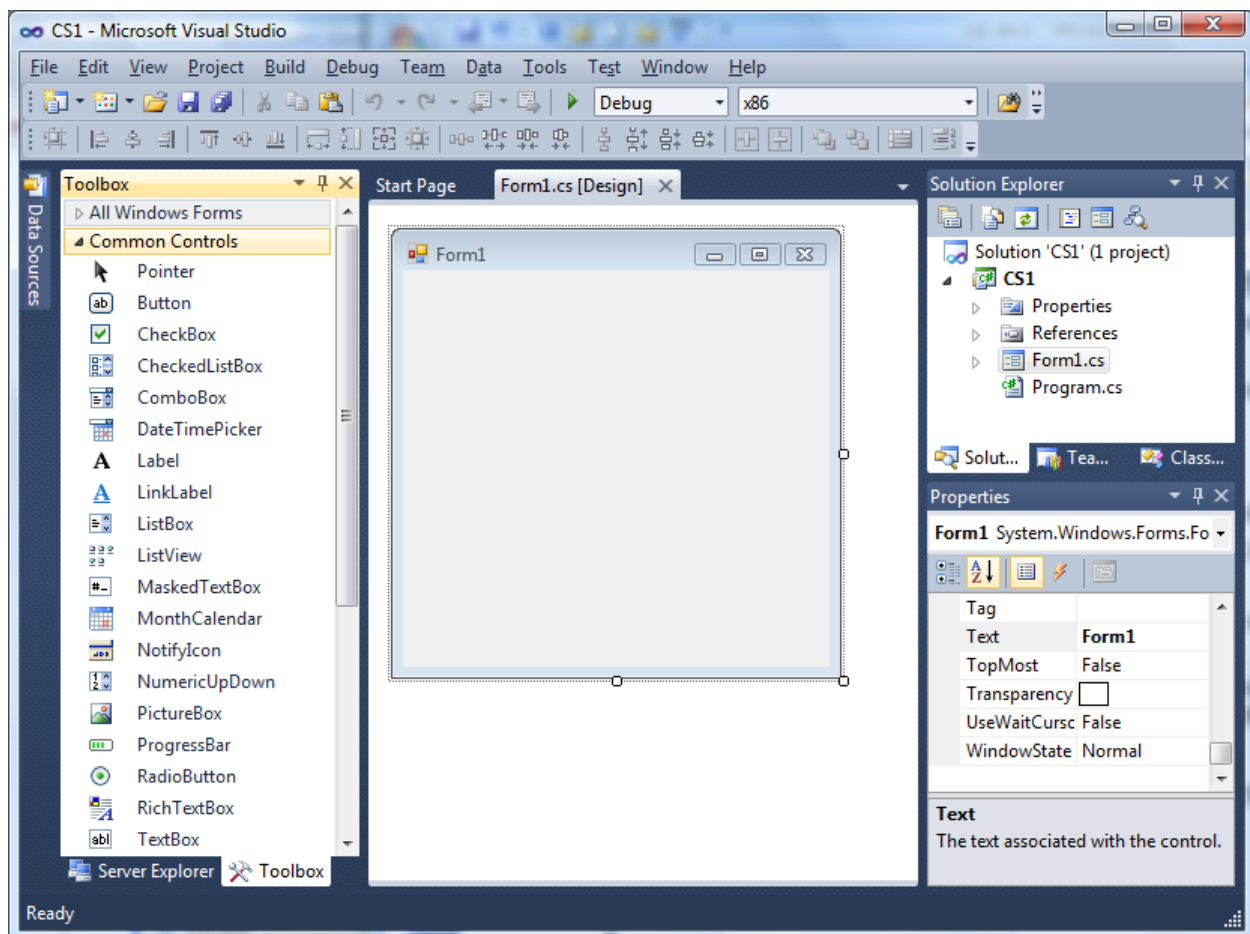
- b. If your workspace window still does not display the Solution Explorer, click on **View** on the menu bar and select **Solution Explorer**.



7. Before building an application **we must have a plan**. The plan includes a sketch of the form, a list of names and properties for the control objects, and the code that will be executed by the program.
- a. For this program there will be four control objects on the Hello World form:
1 label, 1 text box, and 2 buttons. In several of the assignments throughout the course, students will be responsible for defining all of these items, but for this assignment the names and properties of the objects as well as the program code is provided in the steps that follow.



8. After a plan for the form has been developed, the form can be built. To begin adding control objects to the form the **Toolbox** must be displayed, and the **Properties Window** is used to set the object properties..
 - a. The Properties Window should be displayed on the bottom right under the Solution Explorer. If it is not displayed, click on **View** on the menu bar, and select **Properties Window**.
 - b. Click on **View** on the menu bar, and select **ToolBox**.
 - c. Click on the **push-pin** to make the Toolbox stay on the screen. The Toolbox will AutoHide if the push-pin is not pushed.
 - d. Click on triangle in front of **Common Controls** to expand the list of tools if they are not displayed.

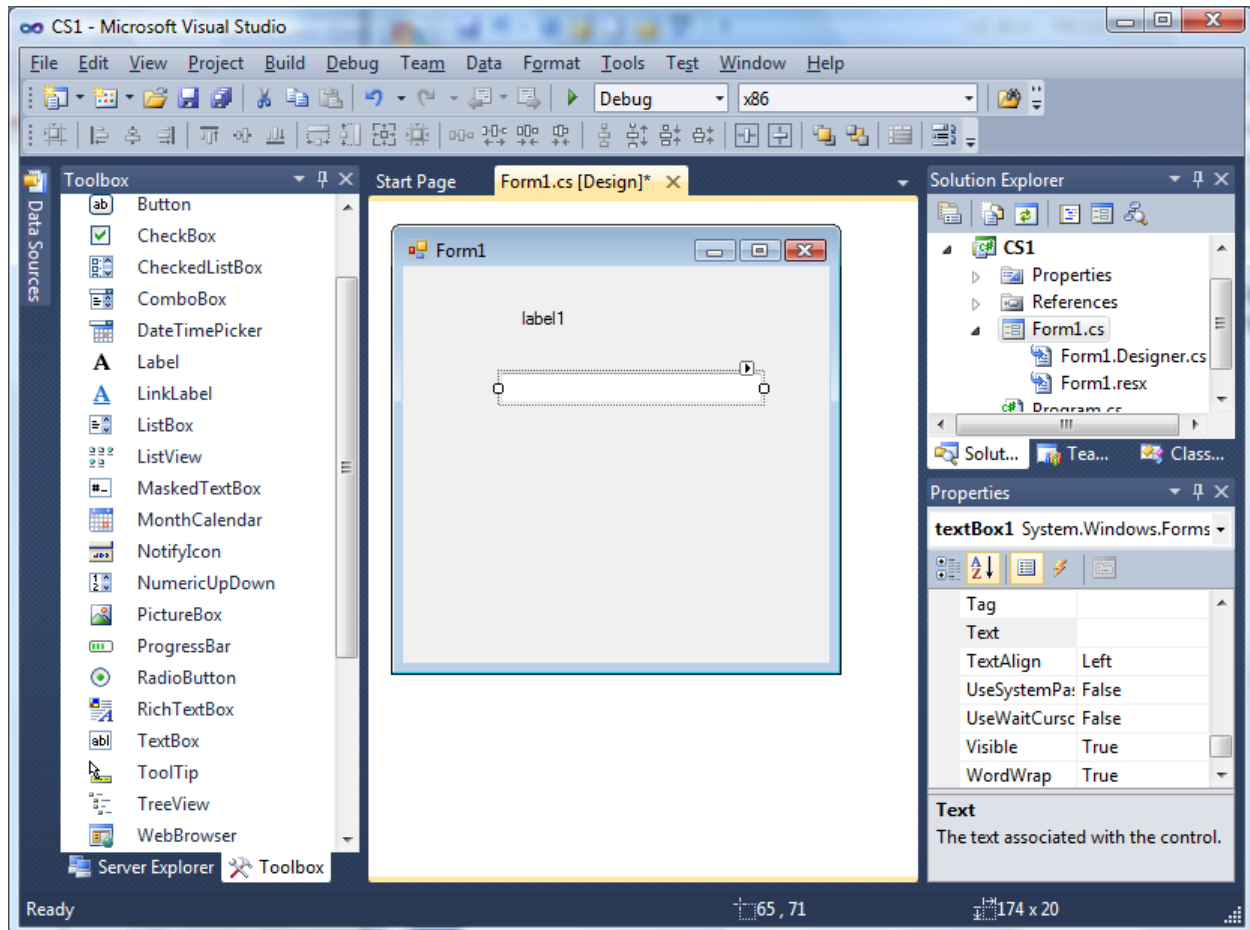


9. Place a label on the Form.
 - a. Click on the **Label** tool in the toolbox to activate it.
 - b. Move the pointer over the form and the pointer becomes a crosshair with a big A.
 - c. Click-and-drag on the form where you want to place the label that will contain the Hello World text, and release the mouse.
 - d. After releasing the mouse it will shrink and display label1. Since it is the first label it is assigned the number one. If this was your second attempt, it will be label2. At this point the number assigned does not matter.

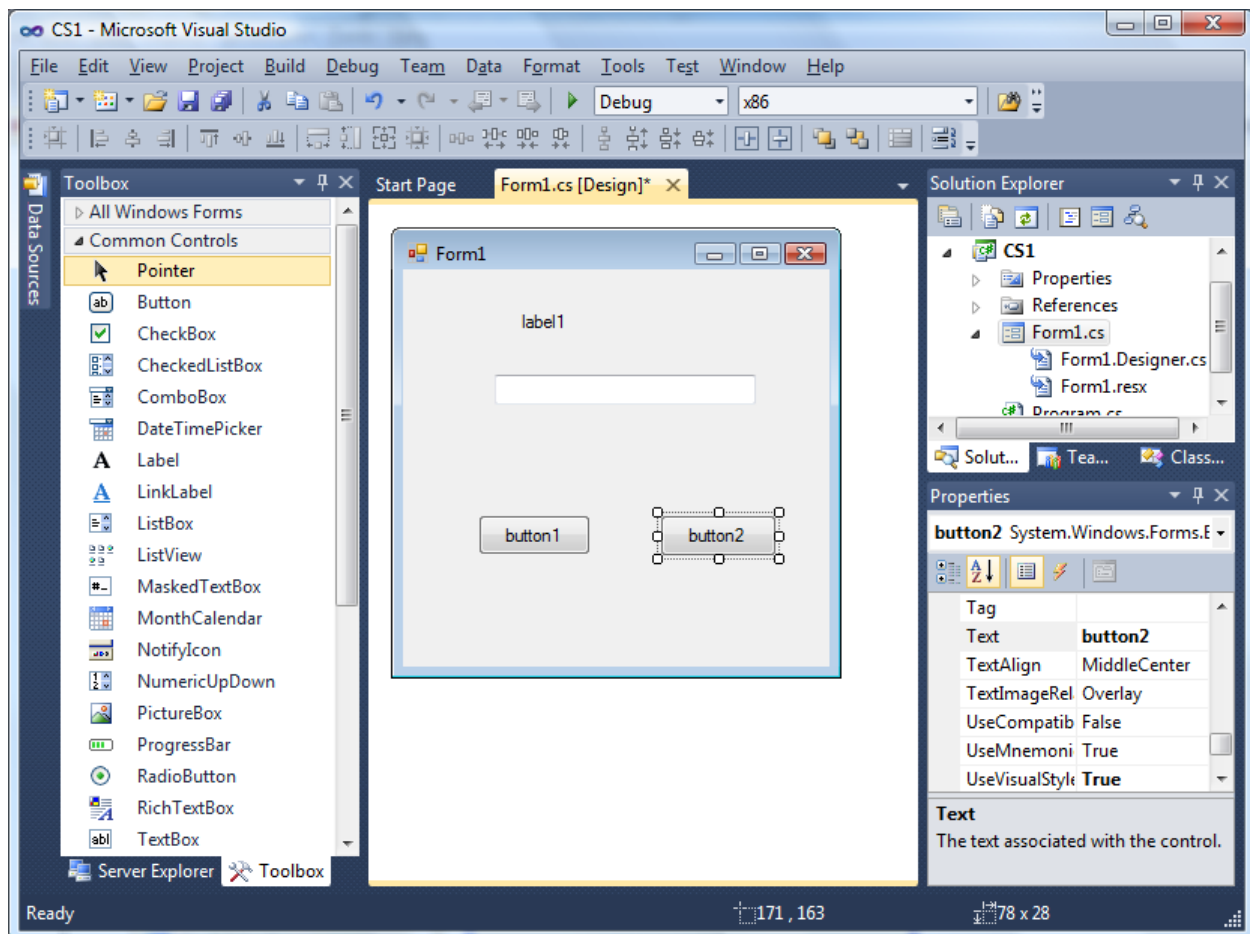


10. Place a text box on the Form.

- a. Scroll down in the Toolbox, and click on the **TextBox** tool one time to activate it.
- b. Move the pointer over the form and the pointer becomes a crosshair with a small ab.
- c. Click-and-drag on the form where you want to place the text box, and release the mouse. The textbox will be used to display your name.

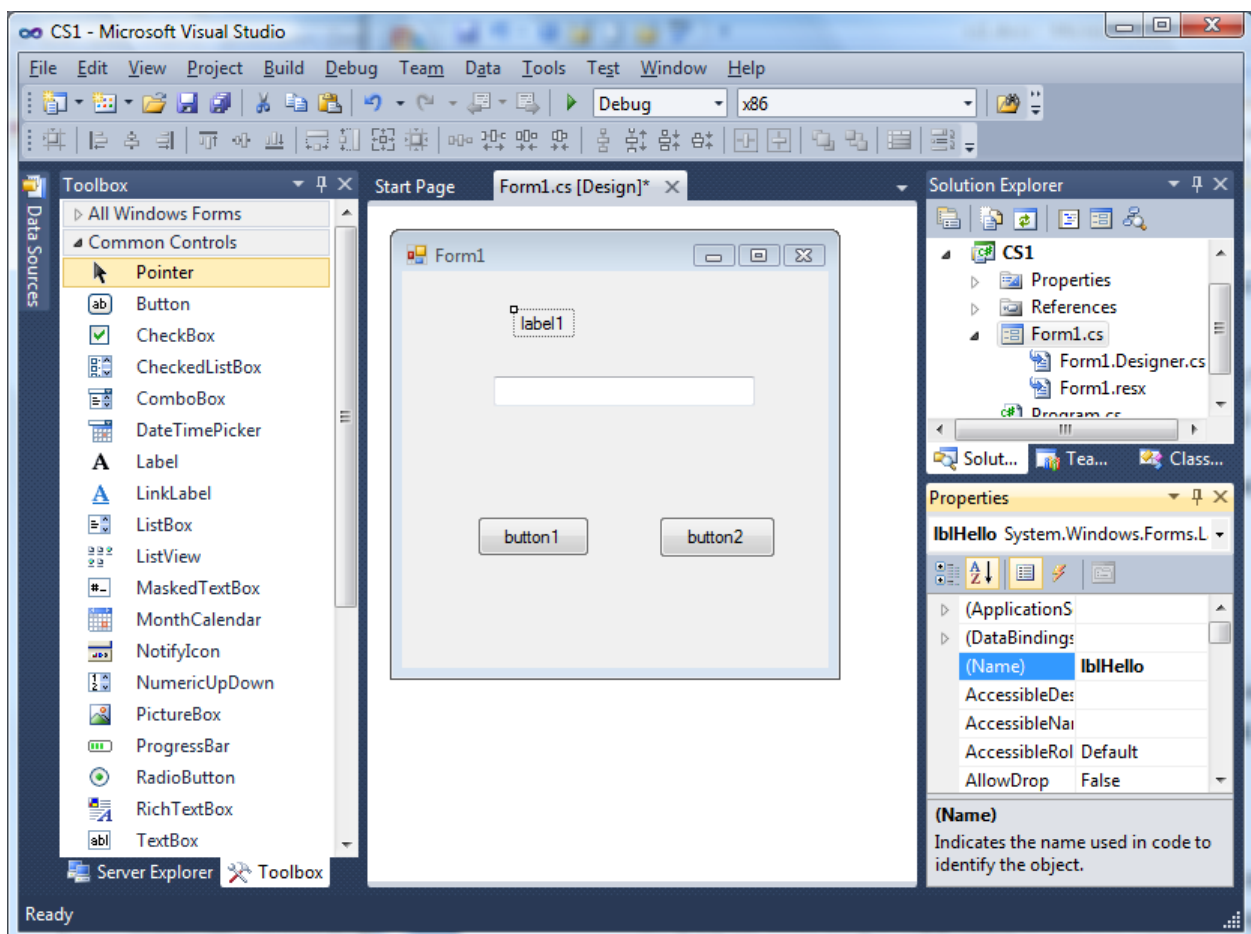


11. Place two buttons on the Form.
 - a. Scroll up in the Toolbox and click on the **Button** tool one time to activate it.
 - b. Move the pointer over the form and the pointer becomes a crosshair with a small ab in a button.
 - c. Click-and-drag on the form where you want to place the **first button**, and release the mouse.
 - d. Click on the **Button** tool in the toolbox to activate it again.
 - e. Move the pointer over the form and the pointer becomes a crosshair with a small ab in a button.
 - f. Click-and-drag on the form where you want to place the **second button**, and release the mouse.
 - g. Click the **Save All** button. You should save your work at various times during your session.

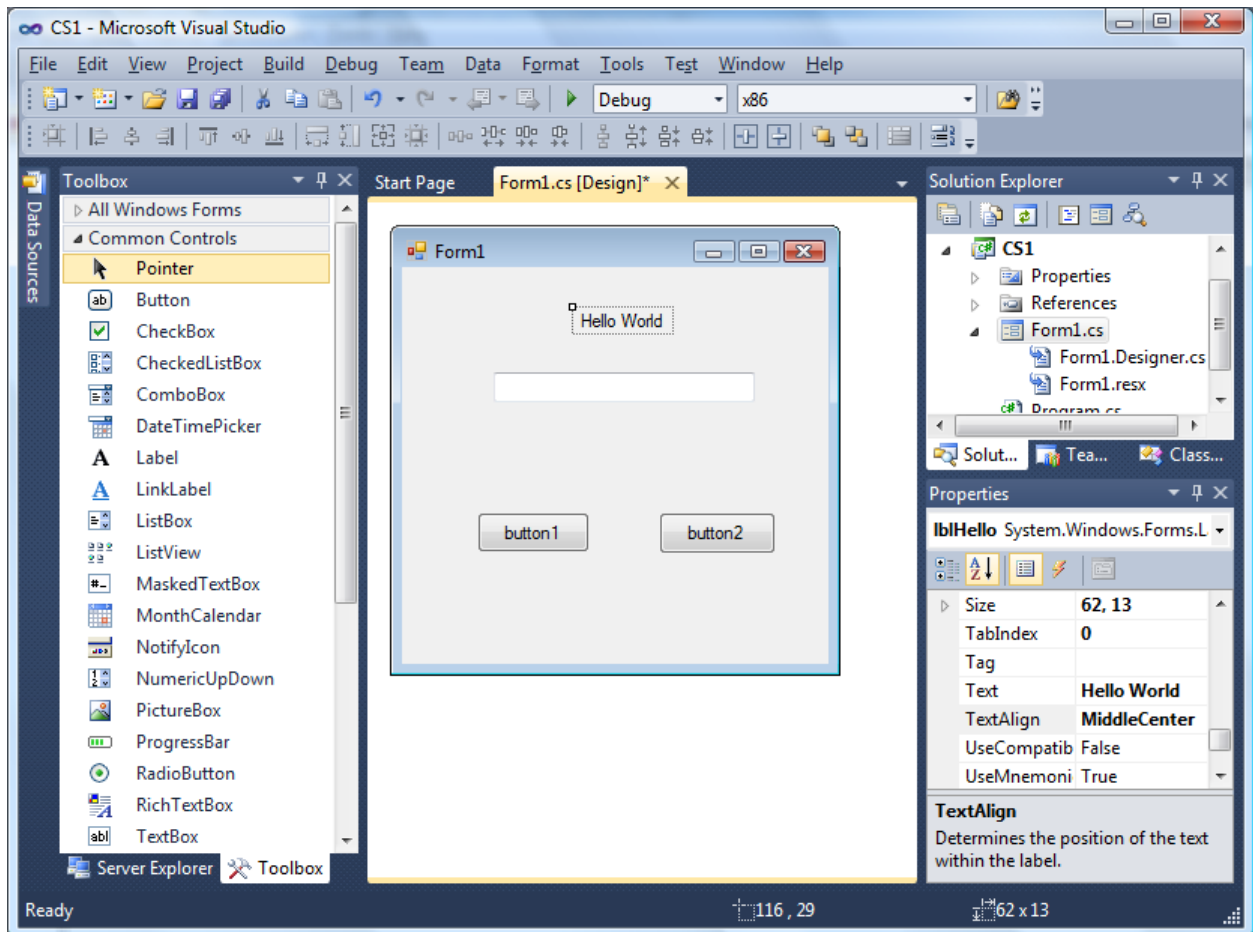


12. Set the **Name** for **Label1**.

- a. Programmers assign meaningful names to Control objects so they can easily reference the objects in program code which is added later.
- b. Control objects not referenced in code do NOT have to be given meaningful names. The default name assigned to them will usually be fine, but in this program we will be giving all control objects meaningful names to practice naming them.
- c. The naming convention that will be used for control objects includes the control type as a three-letter prefix.. The name also includes a descriptive word or group of words (lblHello, txtMessage, btnHello, btnExit). The prefix and descriptive words help programmers (you and I) identify what type of object it is while working in code view.
- d. Click once on the **label1** object on the form to select it.
- e. Verify that the properties are displayed in alphabetical order in the Properties Window by clicking on the **A-Z Button** one time.
- f. Scroll to the top of the property list and change **(Name)** to **lblHello**.



- g. Still in the properties panel, scroll down and change **Text** to Hello World.
- h. Scroll down and change **TextAlign** to Middle Center by clicking on the middle rectangle in the drop down list.
- i. Center the actual label on the form over the textbox, by clicking and dragging it. It does not have to be exact; just estimate the center.



13. Set the **Name** and **Text Alignment** for **TextBox1**.

- a. Click on the **TextBox1** object on the form one time to select it.
- b. Scroll to the top of the property list and change (**Name**) to **txtMessage**.
- c. Scroll down and change **TextAlign** to Center by selecting Center in the drop down list.

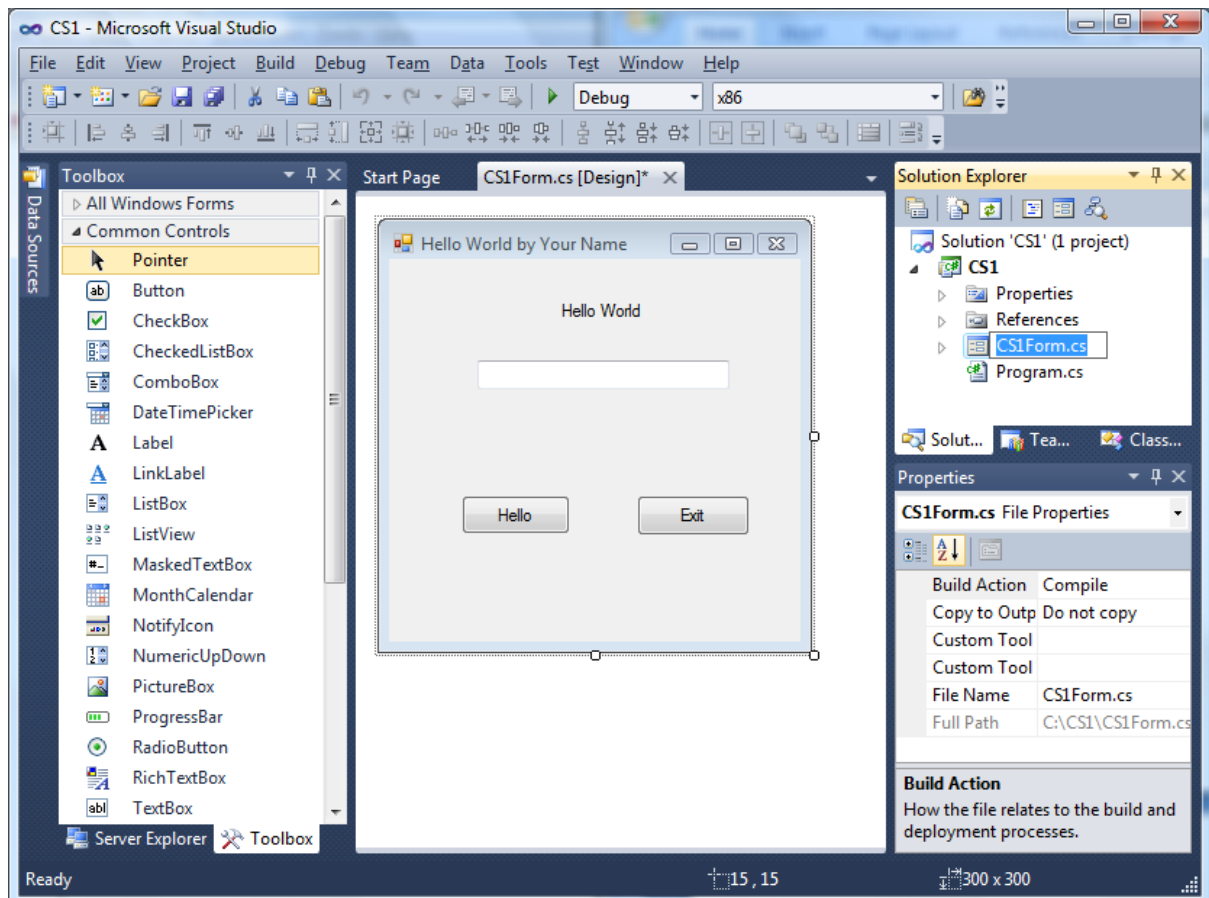
14. Set the **Name** and **Properties** for **Button1** and **Button2**.

- a. Click on the **Button1** object on the form one time to select it.
- b. Scroll to the top of the property list and change (**Name**) to **btnHello**.
- c. Scroll down and change **Text** to **Hello**.

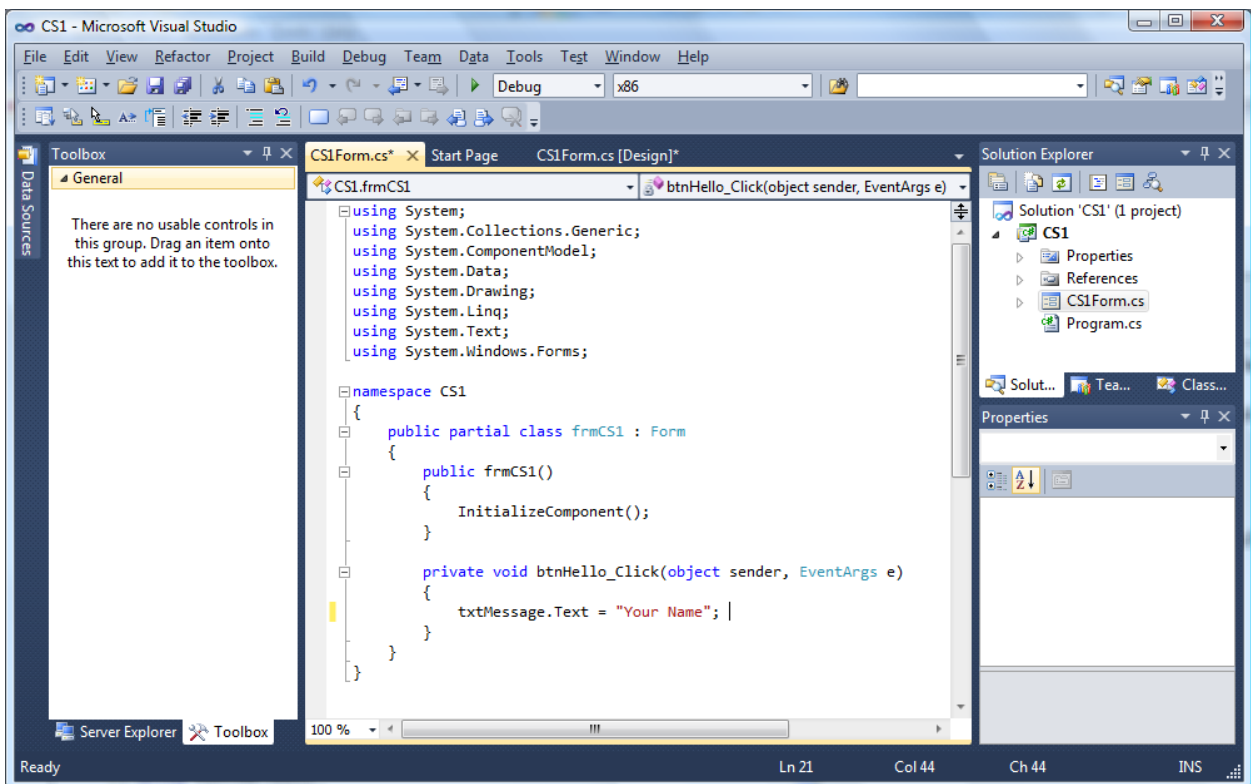
- d. Click on the **Button2** object on the form one time to select it.
- e. Scroll to the top of the property list and change (**Name**) to **btnExit**.
- f. Scroll down and change **Text** to **Exit**.

15. Set the **Properties** for **Form1** and rename the form file.

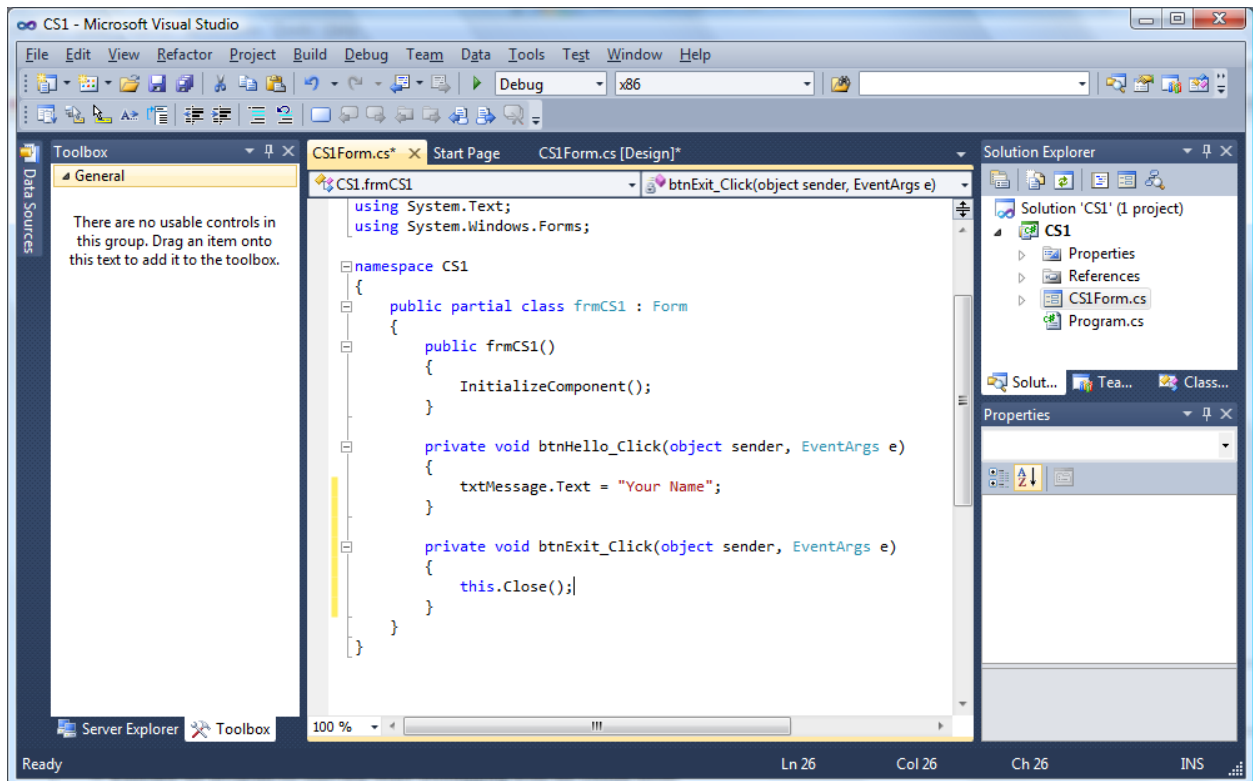
- a. Click anywhere on the form (**Form1**) one time to select the form. The form is also considered a control. Make sure you don't click on any of the controls (label, textbox, button) by accident.
- b. Scroll to the top of the property list and change (**Name**) to **frmCS1**.
- c. Scroll down and change **Text** to **Hello World by Your Name**.
Be sure to enter your actual name instead of the words Your Name.
 The text property of the form determines the text to appear in the title bar of the application.
- d. In the Solution Explorer, right-click on the filename **Form1.cs** and choose **Rename** from the shortcut menu. This is the name of the file as stored on the storage device.
- e. Change the file name to **CS1Form.cs**, making sure to retain the **.cs** extension. Press the enter key after typing in the new name.
- f. After renaming the files and setting the properties for the label, textbox, buttons, and form, the project should look something like this.



16. After building the interface, the **required program code must be entered**.
 - a. The code that will be executed when a button is clicked or some other event takes place must be added. The code is entered using the editor's **Code View**.
 - b. While in form view **double-click on the Hello button**. This will switch the editor to code view and generate a skeleton method with some default code that is required to capture the click event. The skeleton is inserted at bottom of some required application code.
 - c. Between the open and close braces of the default code, type in
txtMessage.Text = "Your Name";
Be sure to enter your name instead of the words Your Name, and the semi-colon at the end of the statement.
 - d. Commands and property names are case sensitive, which means that control names need to be entered in code view as defined in design view. For example, txtMessage with a capital T would cause an error because we defined it with a lowercase t. So make sure all of the spelling is correct.

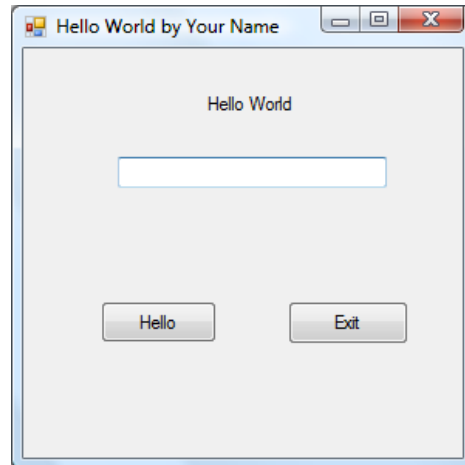


17. Enter required program code for **Exit button**.
 - a. Return to Form View by clicking on the document tab labeled **CS1Form.cs [Design]**.
 - b. In design view **double-click on the Exit button**.
This will switch the editor back to code view and generate a skeleton method with some default code for the exit button.
 - c. Between the open and close braces of the default code, type in:
this.Close();



18. When you have completed entering or editing a program, it may be **executed**. Before a program can be executed, it must be compiled and linked. The Start Debugging command automatically initiates these procedures.
 - a. **Execute** the program by selecting **Start Debugging** from the Debug menu.

b. If everything was entered correctly, the program should execute as follows:

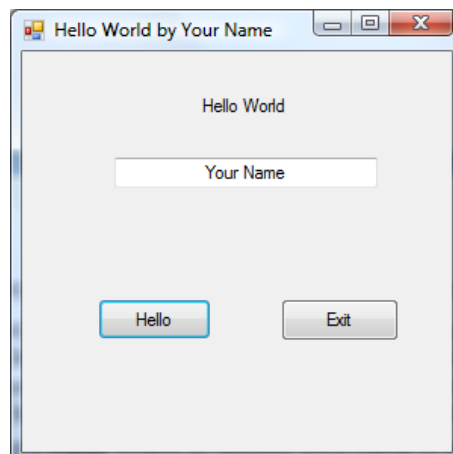


c. If the compiler finds errors:

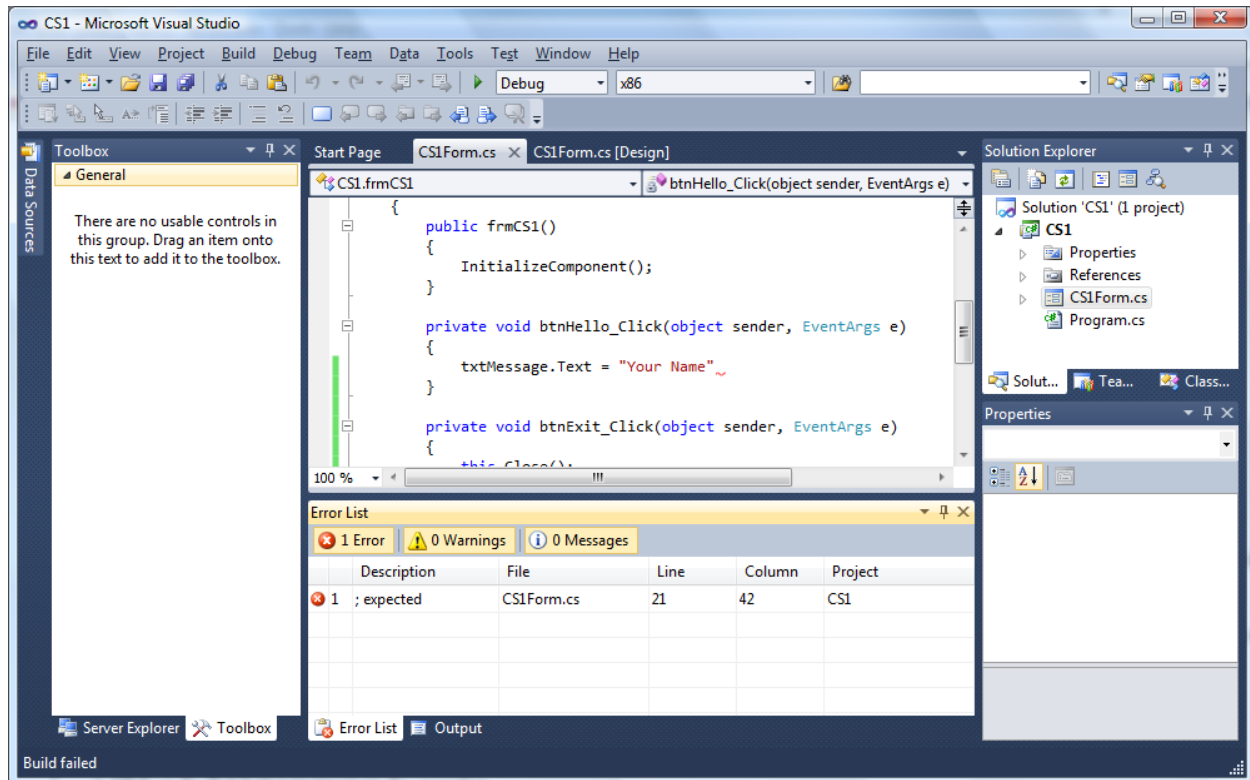
- A dialog box asking if you want to continue is displayed.
- Click on No to stop the processing.
- Error messages generated by the compiler will appear in the Task list.
- Double-click on a error on the Task List to move to that specific error.
- Verify that you have entered all of the text as instructed.
- Correct all the errors in the editing window.
- Recompile by selecting Start Debugging on the Debug menu item again.
- Keep editing and recompiling until all errors have been corrected.

19. Test the program code entered for the button events.

- After a program actually produces output, you begin the logic testing. If it works as expected, you're done. Otherwise, you'll need to review the program's logic and revise the program as needed in the editor window. Then you'll need to save, compile, link and execute it again to test the new logic.
- Click on the **Hello** button to display your name in the textbox.
- Click on the **Exit** button. The program should close the form, and return to the Visual Studio editor.



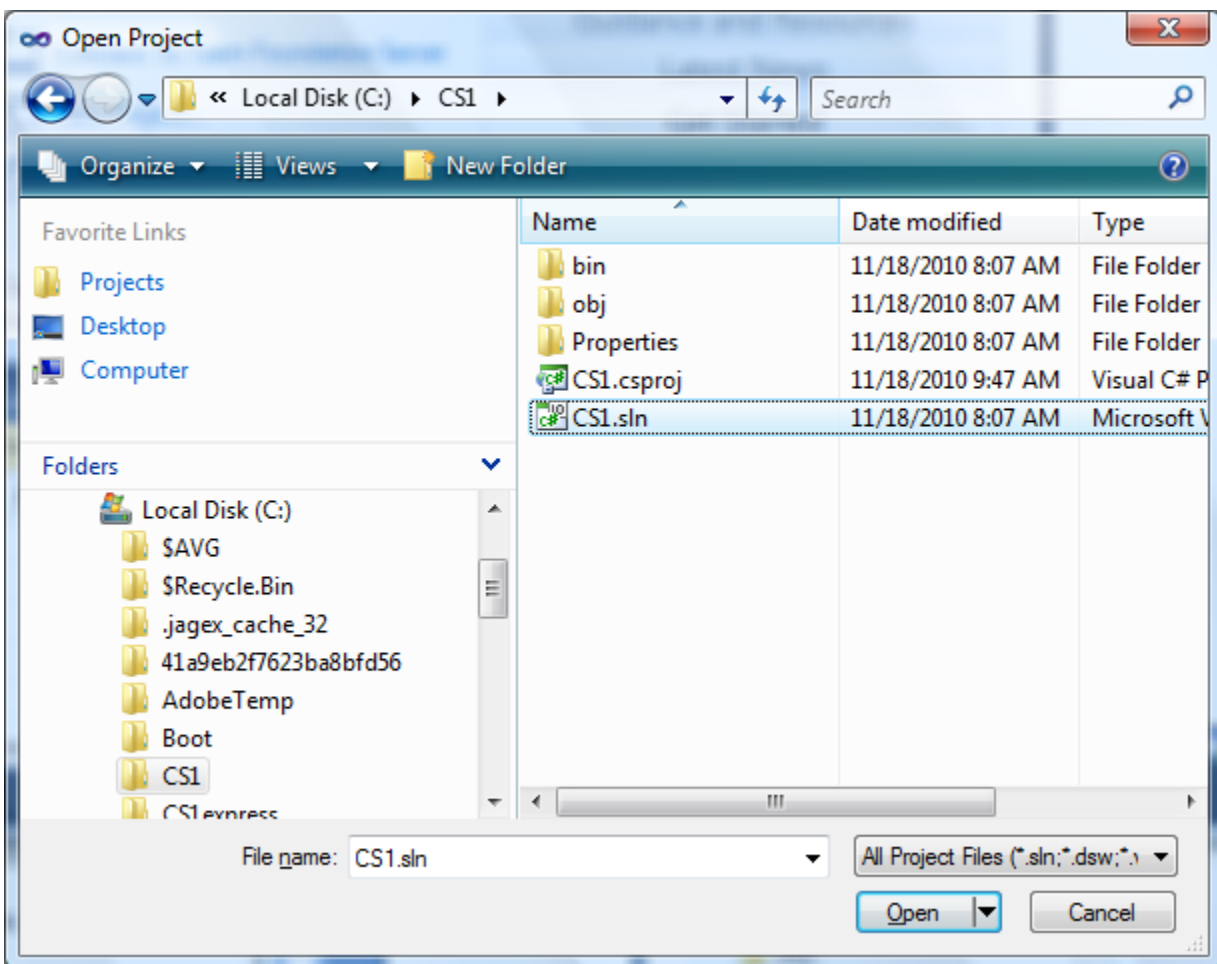
20. Practice working through syntax errors using the Task List.
 - a. Return to Code View by clicking on the document tab labeled **CS1Form.cs**.
 - b. **Remove** the semi-colon after "Your Name".
 - c. Select **Start Debugging** from the Debug menu item.
 - d. A dialog box reporting that errors have been found should be displayed. Click on **No** when prompted if you want to continue.
 - e. An error should be reported on the Task List: ; **expected**, which means that it expected a semi-colon before the closing brace.



- f. **Double-click** on the error message displayed in the Task List. Double-clicking highlights the error message listed in the Task List and moves you to the line where the error was encountered.
- g. In C# all statements must end with a semi-colon. The Smart Editor will point out errors as you are entering the program (red squiggly line). If you ignore the error, it will be caught and reported when the program is compiled.
- h. **Re-enter** the semi-colon that was removed at the end of the command.
- i. Press the down arrow, and the red squiggly line and the error message in the task list should go away.
- j. Select **Start Debugging** from the Debug menu again and no errors should be reported.
- k. Click on the Exit button to terminate the execution.

21. To close project:
 - a. Click the **Save All** button.
 - b. Click on **File** on the menu bar and select **Close Solution**.
 - c. Click the **Close Program** button.

22. To open an existing project:
 - a. Click on **File** scroll down and mouse over **Open**, and then slide over and select **Project/Solution**.
 - b. Navigate to the **CS1** folder.
 - c. Click on the solution file (**CS1.sln**) to select it, and then click on **Open**.



- d. You may also be able to double-click on the solution file when using Windows Explorer. **Always open the solution file (.sln)** . If you open a form file (CS1Form.cs), Visual Studio will not know the projects settings. It will not be able to generate the form and compile the program.

- e. **Windows hides the files extensions by default.** It may be best to search your help system to change the setting so that known file extensions are NOT hidden. It is usually set through Windows Explorer and selecting Folder Options from the Tools menu.
23. Click the **File** on the menu bar and select **Exit** to exit the program
 24. **Submit online** the files **CS1Form.cs** and **CS1Form.Designer.cs** when completed. The designer file contains the code for the control objects.

See [Submitting assignments online](#).
 25. Very important: **Eject** your storage device.