Laboratory Exercise
Working with Windows Form

Objectives:

At the end of the exercise, the students should be able to:

- Create and saving a C# .NET project
- Add a form
- Display Properties and Solution Explorer windows
- Recognize Form tabs
- Work with Forms
- Add code to a form
- Run and debug a program

Materials:

- Flash drive
- PC with installed Microsoft Visual C# .NET 2010

Basic Principles:

Learning and familiarizing with basic controls and tools of Visual C# IDE is very important to locate all the controls and use all the feature provided by the IDE for students.

Procedures:

1. Click **Start,** point to **All Programs,** point to **Microsoft Visual Studio 2010 Express** and then click **Microsoft Visual C# 2010 Express.**

Activity 1 Creating a Visual C# .NET Project

In this activity, you will create a simple Visual C# .NET project. You will create a simple Welcome Message application. Write simple message code on Form1_Load and Form1_FormClosed Event handler.

1. On the **File** menu, click **New Project**.
2. In the **Project Types** box, select **Windows** under **Visual C#**.
3. In the **Templates** box, click **Windows Forms Application**.
4. Change the name of the project to **MyFirstExercise**. Click **OK**.

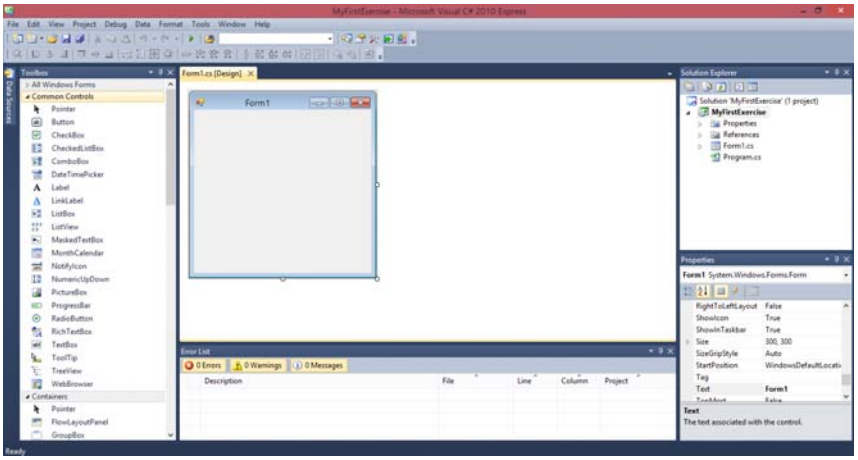


Figure 2.1 Form 1

Activity 2 Displaying the Solution Explorer Window

By default, the Solution Explorer window is displayed once you open C# .Net. But, if you close it accidentally, you can display it again by selecting **Solution Explorer** from the **View** menu.

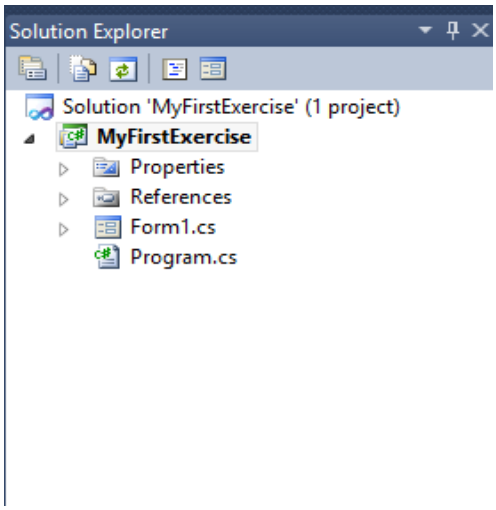
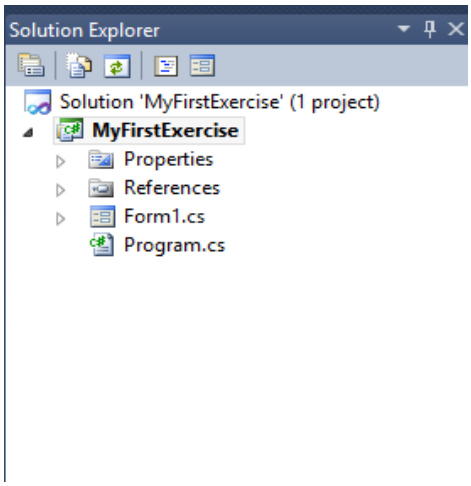


Figure 2.2 Solution Explorer

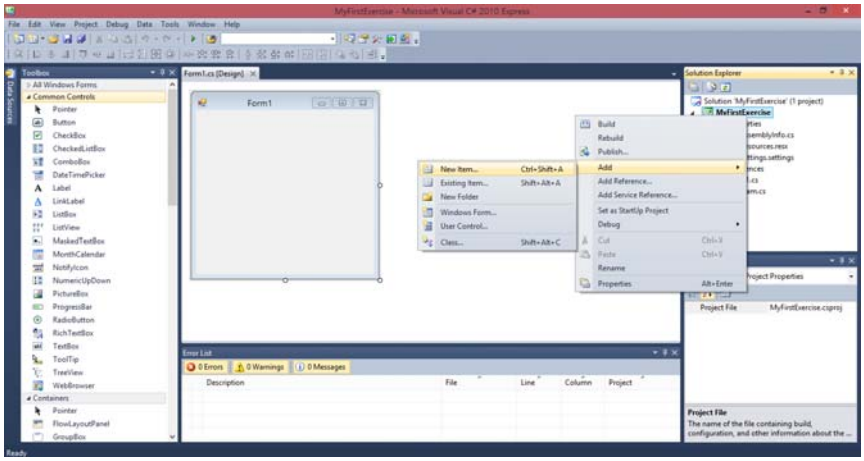
NOTE: The buttons on the Solution Explorer's window toolbar vary depending on the file selected on the window. (i.e. selecting Form1.cs shows the View Code and View Designer buttons on the toolbar.)

1. Click the **Show All Files** button to display all the hidden files related to the project being created.



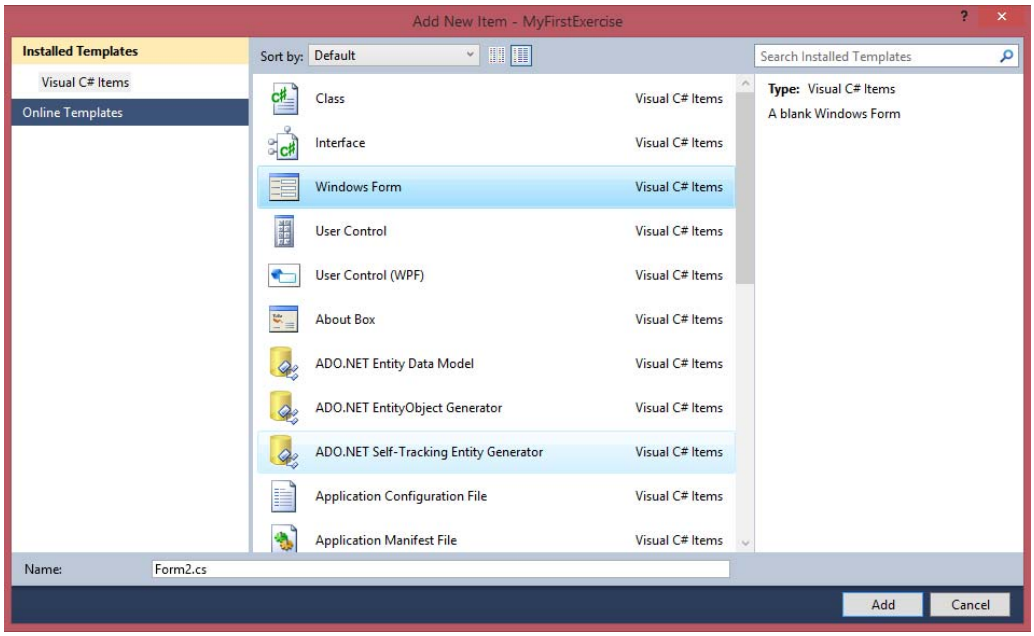
2. Click the **Arrow** button that is located to the left of the file's icon in the Solution Explorer window. Try to click the arrow button twice, this will show and unhide the content.
3. Again, click the **Show All Files** button to hide other files.

Activity 3 Adding a Form and Displaying the Form's Properties



1. Click the **Add New Item** button from the **Main** toolbar and select **Add Windows Form** from the context menu. The Add New Item dialog box appears.

   TIP: You can also right-click on the **MyFirstExercise** project in the Solution Explorer, point to **Add** and then select **Windows Form** from the context menu.



2. Select **Windows Form** from the **Templates**. Leave Form2.cs as the name of the form to be added and then click **Add**. Form2.cs is now added to the **Solution Explorer** window.
3. Since the displayed form is Form2, the displayed properties in the Properties window are for Form2. To display the properties of Form1, double-click **Form1.cs** on the Solution Explorer window.

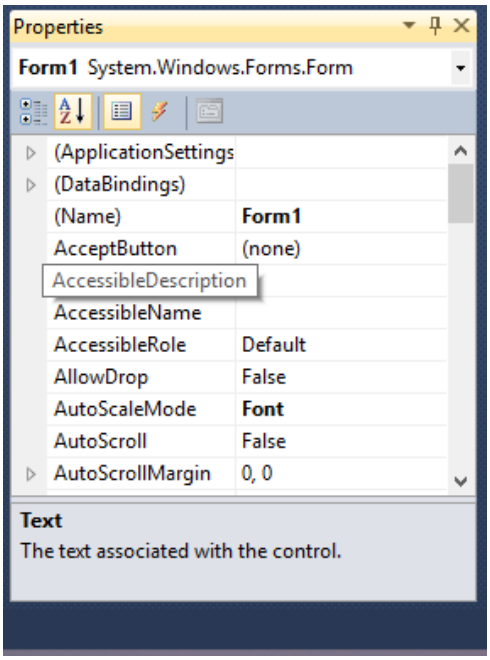
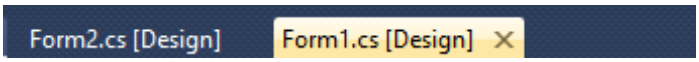


Figure 2.3 Properties Window

TIP: By default, Properties window is also displayed in the same way as the Solutions Explorer window. If Properties window is accidentally closed, select **Properties Window** from the **View** menu or simply press <CTRL + W + P> to display it.

Activity 4 Understanding Form tabs

1. Notice the tabs located above the form. See below.



2. Notice that the Form1.cs [Design] tab is highlighted. This indicates that the form displayed in the window is Form1. [Design] is in the designing state of Form1.
3. Double-click the **Form1** form. An additional tab named Form1.cs appears and you are shifted to the coding window.

4. Form1.cs is the coding state of Form1. Notice the asterisk (*) that appears at the end of Form1.cs and Form1.cs [Design].

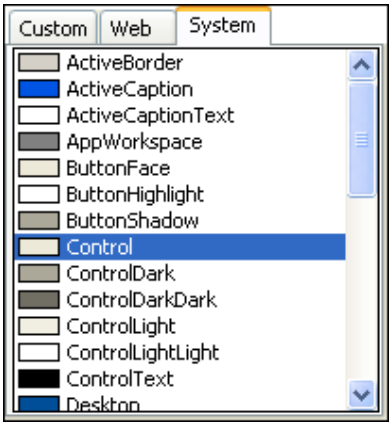
   TIP: You may click the **View Code** button on the Solution Explorer window to shift to the coding window. However, no asterisk will appear at the end of the filename unlike when the form is double-clicked.

   NOTE: Asterisk appears when you double-click the form where some codes are automatically generated in the code window. Asterisk indicates that a change has been made to the form since the last time it was saved.

5. Click the **View Designer** button on the Solution Explorer window to shift to the design form.

Activity 5 Working with Form's Properties

1. Double-click **(Name)** in the Properties window to change the existing name of the form.
2. Type **frmMain** and then press the **<ENTER>** key.
3. Go to the **Text** property and change the text to **STI**. The text appears on the form's title bar.
4. On the **BackColor** property, change the back color of the form, you can choose from System, Web or Custom tab colors.



Activity 6 Removing a Form

There are two (2) ways of removing a form from your project:

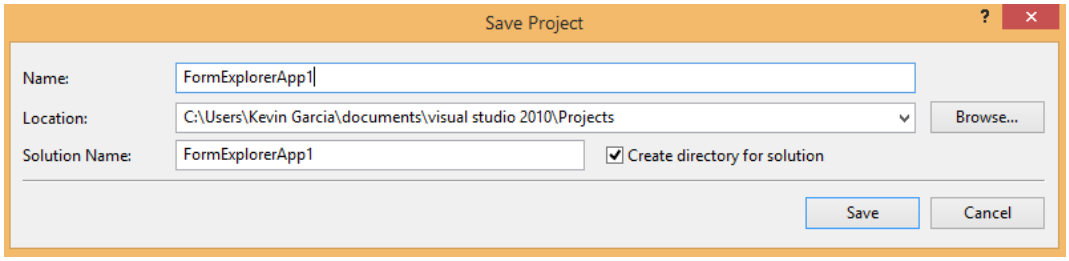
1. To permanently remove the form, on the **Solution Explorer**, right-click on the form you want to remove, say **Form2.cs**, then click **Delete**. A dialog box appears confirming the deletion of the form.
2. Simply click **OK**. The form is removed from the Windows Form application project.
3. To remove the form temporarily from the project, on the **Solution Explorer**, right-click on the form you want to remove, say **Form1.cs**, then click **Exclude from Project**. You will be led back to the Start Page and no forms appear under your project.

4. To restore the excluded form, click the **Show All Files**  button to display all the hidden files then right-click the hidden form, **Form1.cs**, and then select **Include in Project**.

NOTE: A hidden form is represented by a plain sheet in dotted lines  .

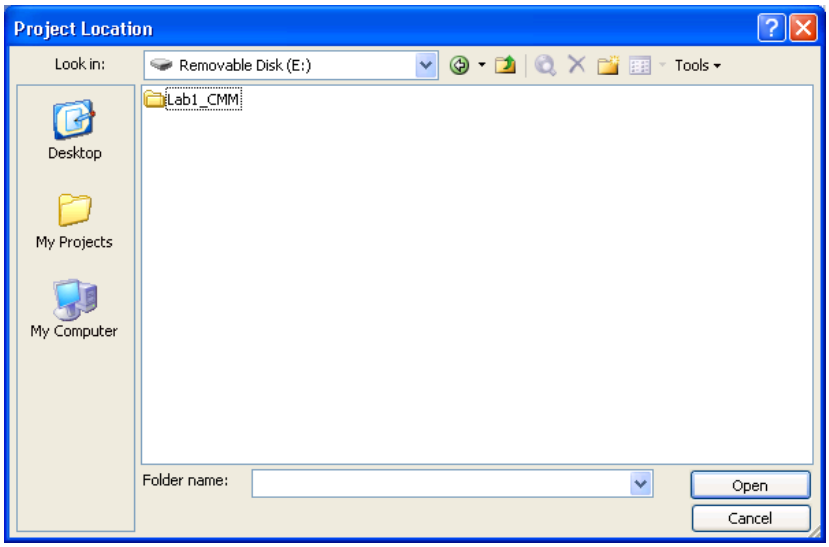
Activity 7 Saving a C# .Net Project

1. On the **File** menu, click **Save All** or you can click the **Save All** button on the toolbar to save all the files you have updated. The Save Project dialog box appears.



NOTE: Files on the tab with an asterisk means that the files were not yet save.

2. Click **Browse**. The Project Location dialog box appears.



3. Locate your floppy or flash drive in the **Look in** box.
4. Click the **Create New Folder** button then type **LabExercise2 - [Surname]** in the appearing New Folder dialog box. Click **OK**.
5. Select the created folder and then click **Open**.

   TIP: If the folder you created is not displayed, click the Up One Level button then select the folder and then click Open.

6. Click **Save** on the Save Project dialog box.

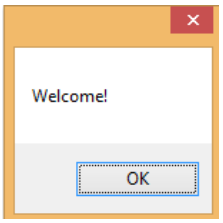
Activity 8 Adding code to the form

1. Double-click STI form (form itself) to go to the **Code** window or simply click the **View Code** button.
2. Add the following code on the private void **Form1_Load** event handler:

```
MessageBox.Show("Welcome!");
```

Activity 9 Running and Ending a C# .Net Project

1. To run the project, click **Debug** menu then click **Start Debugging**, or you can click its corresponding toolbar button  . You can also press <F5> as shortcut. The Welcome message appears.



2. Click the **OK** button as you see the **Welcome** message. The form appears.

TIP: You can stop the application by clicking the **Debug** menu then selecting **Stop Debugging**, or you can click its corresponding toolbar button  .

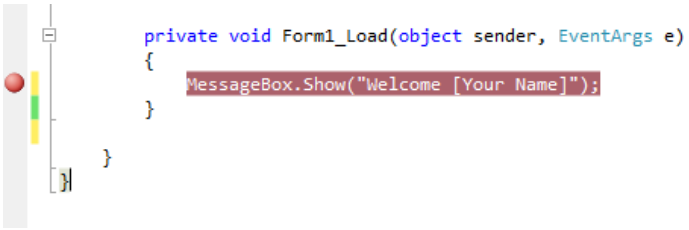
Activity 10 Debugging an Application

In this exercise, you will use the Visual C# .NET debugger to debug the simple application that you created in the previous exercise.

You will set a breakpoint to halt execution in the Form1_Load Event handler and use the debugger to step through the code.

- **Setting a breakpoint**

1. Place the pointer on the line



2. On the **Debug** menu, click **Toggle Breakpoint** or press <F9>, the breakpoint shortcut key. The selected line is highlighted with red and a red circle appears on the leftmost part of the line.

- **Debugging the project**

1. On the **Debug** menu click **Start Debugging**.
2. When the program execution halts, change the `[Your Name]` text and type a different name. On the **Debug** menu, click **Step Into**  button until the form appears. Notice that your name is changed to the name you recently specified.

NOTE: The yellow highlighted line indicates the current line executed in the program.

TIP: If the blank form appears, just close it.

3. Change the `[Your Name]` text and type different name. Press <F11>, shortcut key for Step Into command.
4. Continue to press <F11> until the application terminates.

- **Removing a breakpoint**

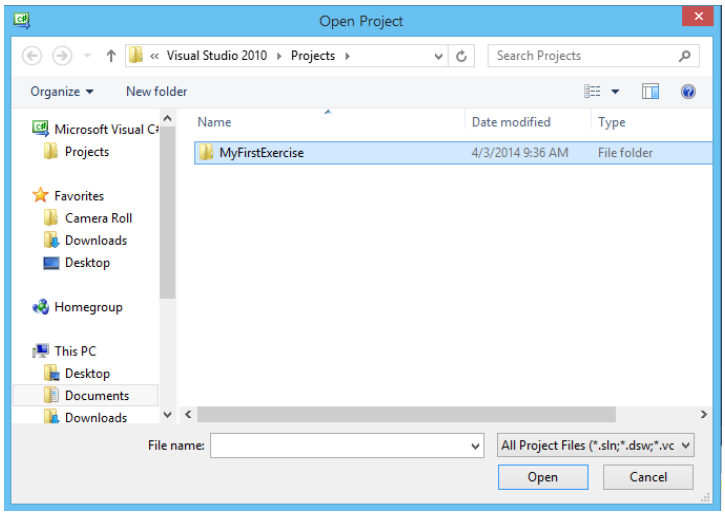
1. Place the pointer on the line where the breakpoint is located then press <F9> to remove the breakpoint.

TIP: Press <CTRL+S> to save the changes you made in your project.

Activity 11 Opening an Existing Project

1. Click **Start,** point to **All Programs,** point to **Microsoft Visual Studio 2010** and then click **Microsoft Visual C# 2010 Express.** The C# .Net Start Page appears
2. On the **File** menu, select **Open Project**. The Open Project dialog box appears.

TIP: You can also click **Open: Project** in the Recent Project box to display the Open Project dialog box.



3. In the **Look in** box, locate your floppy or flash drive.
4. Select the **LabExercise2_[Surname]** folder and then click **Open**.
5. Select the **MyFirstExercise** folder and then click **Open**.
6. Click the **MyFirstExercise** solution and then click **Open**.

Exercises:

A. Adding Common Controls in a Form and modifying control's property

In this exercise, you will be familiarizing the Toolbox and Properties Window of Visual Studio .NET IDE. You will use Toolbox window in adding common controls and use Properties window in designing your controls.

The purpose of this exercise is to get familiar with the IDE specifically Toolbox window, so take time to explore any parts that are interesting to you.

1. View the design window of **Form1.cs**.
2. On the **Toolbox** window, expand **Common Controls** by clicking on its corresponding **+** box.

TIP: If the Toolbox pane does not appear, from the **View** menu select **Toolbox**.

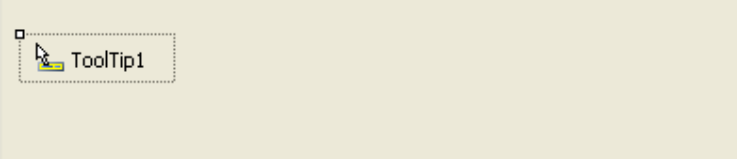
3. On the **Toolbox Common Controls**, double click the **Button** or simply drag it onto the form.
4. On the **Properties**, observe what will happen if you are going to change the following:

    - BackColor – GradientActiveCaption
    - Text – This is a Button
    - Font – Verdana, style – Bold, size – 12
    - ForeColor – HotTrack
    - TextAlign – TopLeft
    - Size – 200, 100
    - Anchor – Top, Bottom, Left, Right

5. On the **Toolbox Common Controls**, double click or drag **Label** onto the form.
6. On the **Properties** section, observe what will happen if you are going to change the following:

    - BackColor – ButtonFace
    - Text – This is a Label
    - Font – Times New Roman, style – bold italic, size – 16
    - ForeColor – Tomato
    - TextAlign – MiddleCenter
    - Size – 250 , 35
    - Anchor – Top, Left
    - AutoSize – False

7. On the **Toolbox Common Controls**, double-click **TextBox**. A textbox appears on the form.
8. On the **Toolbox Common Controls** again, click **Tooltip** and click it to the form. Tooltip will appear on the **Component Tray** since it is a component.



9. On the **Properties**, observe what will happen if you are going to change the following:

    - BackColor – Info
    - Text – This is a TextBox
    - Font – Lucida Sans, style – italic, size – 14
    - ForeColor – MenuHighlight
    - TextAlign – Center
    - Size – 200,30
    - Anchor – Top, Bottom, Left, Right
    - ReadOnly – True
    - Tooltip on ToolTip1 – My textbox

10. Run the application.
11. Click **OK** on the welcome message. Observe the created form. Place your mouse over the textbox.
12. Stop the application.
13. Save your project and exit C# .NET.