

COMP212 Programming 3

2020F - Lab1

Goals:

In this assignment, you will learn how to use built-in delegate classes (Part-I of the assignment) and custom delegate classes (Part-II of the assignment).

Rubric: (Total marks = 10, Weight = 10%)

Part-I
In Visual Studio project Problem1, open the file Program.cs, read the comments in that file, and fill up your code below every line that says “//WRITE YOUR CODE BELOW”
Part-II
In Visual Studio project Problem2, open the file MainWindow.xaml.cs, read the comments in that file, and fill up your code below every line that says “//WRITE YOUR CODE BELOW”
Update the existing code in project Problem2 so that re-sizing of the WPF window results in re-sizing of its content properly; that is, make sure overlapping of contents of the window does not occur when the window is re-sized.

Evaluation Focus:

- Correct implementation of requirements
- Explanation of solution when asked
- Answer questions on the relevant/related topic when asked

Instructions:

1. You are supposed to use Visual Studio 2019. You can use the free Community edition.
2. Go to **eCentennial** > Assessments > Assignment > Click lab1
3. In the lab1 page, you have two items:
 - a. the document **comp212.2020F.lab1.pdf** (the one that you are reading now)
 - b. the zip file named **lab1.zip**. Download this zip file in a folder.

4. Unzip the file **lab1.zip**. Once unzipped, the root folder should be **lab1**.
5. In the folder **lab1**, there should be a Visual Studio solution file **lab1.sln**. Also, in the folder **lab1**, there is a folder **Problem1**. Go inside folder **Problem1**. Make sure there are **no** folders named **bin** and **obj**. If bin and obj folders exist, **delete** both. Again, in folder **lab1**, there is another folder **Problem2**. Go inside folder **Problem2**. Make sure there are **no** folders named **bin** and **obj**. If bin and obj folders exist, **delete** both
6. Start Visual Studio. Open the solution file **lab1.sln** in Visual Studio.
7. Once the solution file opens, you should see one project **Problem1** in the **Solution Explorer** of visual studio.
8. Under project **Problem1**, there is an item **Program.cs**. We will focus on the item **Program.cs** for **Part-I** of our assignment.

Part-I: Use of built-in delegate classes from Func group

1. It tests your knowledge of how to use built-in delegate classes from **Func** group.
2. Under project **Problem1**, open the file **Program.cs**. It contains code for a console application.
3. Two sample runs of the project **Problem1** are shown in Figure 1. The run on the left shows that when the word happy is entered in lowercase and the Option selected is 1, the word is converted to uppercase and printed on console as HAPPY. The run on the right shows that when the Option selected is 2, the length of the word happy is printed on console as 5.

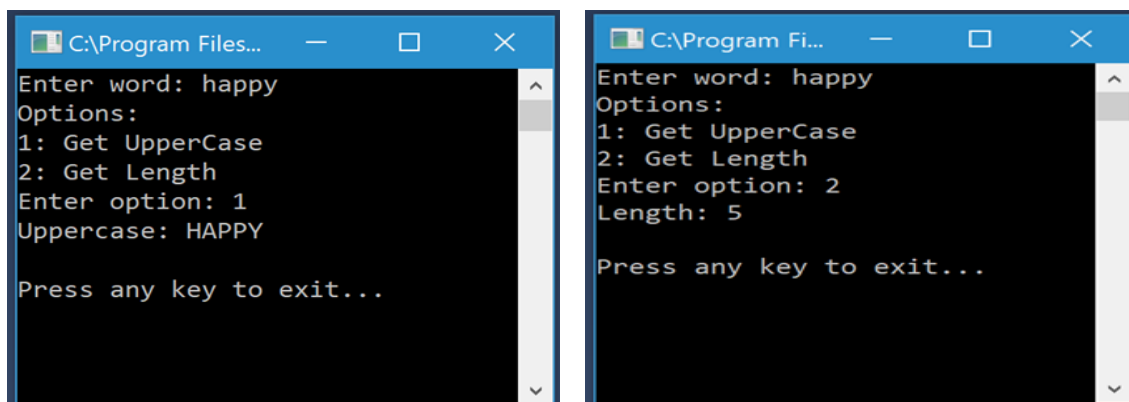


Figure 1. Sample runs of project Problem1

4. In file **Program.cs**, fill up your code below every line that says **“//WRITE YOUR CODE BELOW”**.

5. Build and Run the project **Problem1** to test that the updated code in file **Program1.cs** works.

Part-II: Use of custom delegate classes

1. It tests your knowledge of how to use custom delegate classes.
2. Under project **Problem2**, open the file **MainWindow.xaml.cs**. Read the comments in that file and fill up your code below every line that says **“//WRITE YOUR CODE BELOW”**.
3. Two sample demos of the project **Problem2** are shown in Figure 2 and 3. The demo in Figure 2 shows that a word entered in lowercase in the given textbox is changed to uppercase on clicking the left button **[Upper]**. The output is displayed near the top of the GUI. The demo in Figure 3 shows that on clicking the right button **[Length]**, the length of the word is displayed near the top of the GUI.
4. Update the existing code so that re-sizing of the window results in re-sizing of its content properly; that is, make sure overlapping of contents of the window does not occur when the window is re-sized.

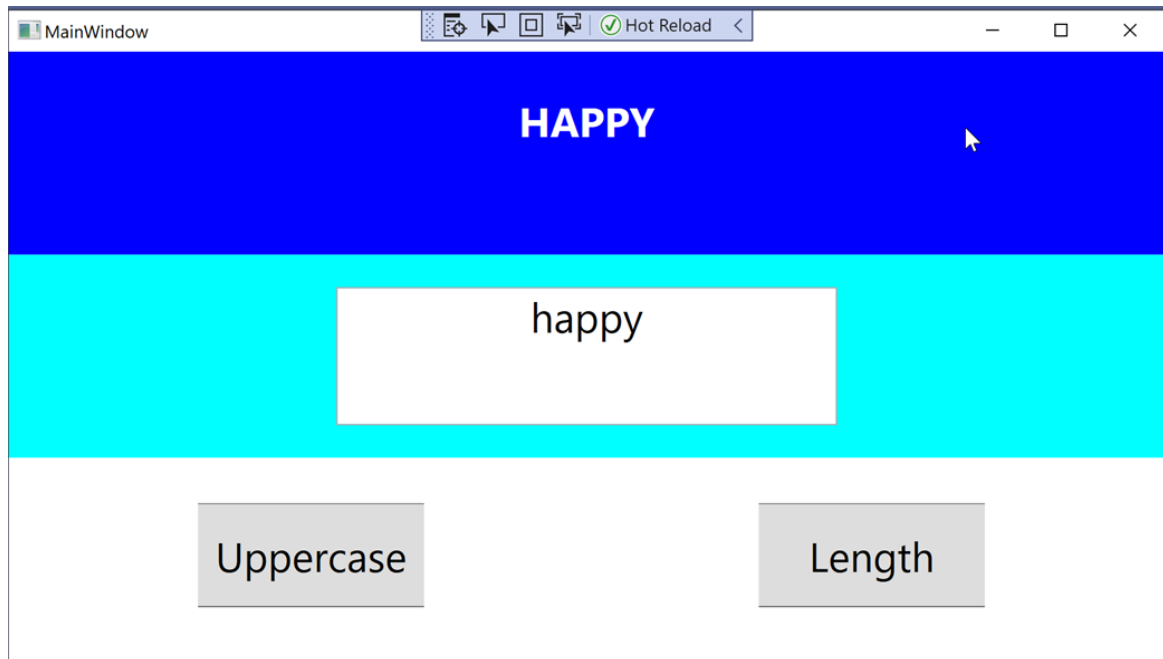


Figure 2. A demo of project Problem2: Result of clicking [**Uppercase**] button

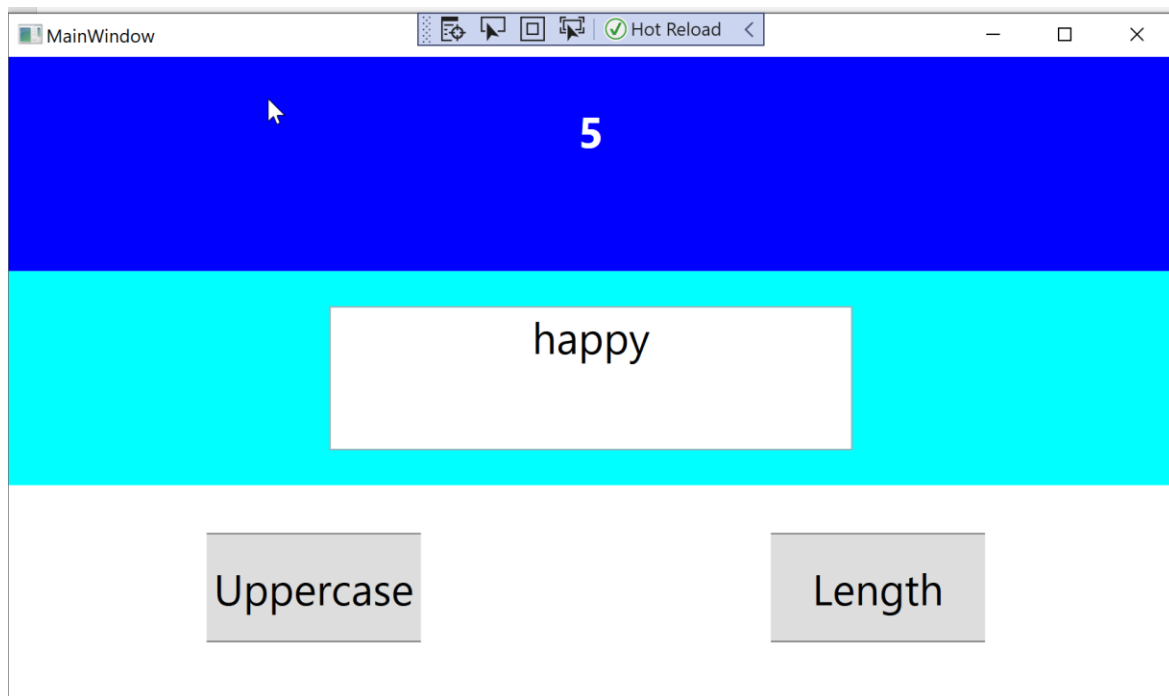


Figure 3. A demo of project Problem2: Result of clicking [**Length**] button