Assignments for C# Day 4

4.1 Sort String based on length

Generally strings are compared alphabetically in lexical order, sometimes we need to compare them may be in reverse order or which is the shortest or longest string.

4.1.1 Objective

To develop the capability for selecting the right interface to implement the user defined sorting algorithm.

4.1.2 Problem Statement

Define a sorting mechanism for Strings that compared them by length. So, when we sort the Strings, the result is based on the length of the String

4.2 Sort Product Collection

Refer any online shopping portal, the products will be displayed in some order. The user in-terface displays the products sorted by brand or by price.

4.2.1 Objective

- Sorting user defined entity classes based on runtime requirement.

4.2.2 Problem Statement

Create an Entity class to hold the following data. You need to choose an appropriate collection to hold it.

Product ID	Brand Name	Description	Price
200	Dell	15 inch Monitor	3400.44
120	Dell	Laptop	45000.00
150	Microsoft	Windows 7	7000.50
100	Logitech	Optical Mouse	540.00

Write a program to perform the following operations

1. Stores the collections of the data shown above
2. An operation to display all the products in a sorted order by default based on their product id.
3. Option for sorting based on Brand name or price based on input provided at runtime.
   a. If two products contain same brand name, description should be considered.
   b. Similarly if products have same price, product id's should be considered while displaying them in order

Sample Output if Sorted by Brand Name:

Product ID	Brand Name	Description	Price
200	Dell	15 inch Monitor	3400.44
120	Dell	Laptop	45000.00
100	Logitech	Optical Mouse	540.00
150	Microsoft	Windows 7	7000.50

Delegate and Event Exercises

4.3 String Operation

It is a simple application to manipulate strings.

4.3.1 Objective:

Understand how delegates are used and how to create multicast delegate.

4.3.2 Problem Statement:

Create a class containing 3 methods to manipulate a string entered by the user in the follow-ing order.

a. CharacterReplace: Accepts user string and replaces all the whitespace characters from the string by any special charater. Such as

Input: My Name is Anthony
Output: My_Name_is_Anthony

b. CharaterRemove: Accepts the string modified by the previous string and removes all the special characters from the string. Such as,

Input: My_Name_is_Anthony
Output: MyNameisAnthony

c. ReverseString: Accepts the string modified by the last method and reverses the string. Such as,

Input: MyNameisAnthony
Output:ynohtnAsiemaNyM

All the methods do return a string as return value. All the methods are called at once us-ing a multicast delegate and while invoking the delegate object, user entered string will be passed.
Note: You can't use any in-built method of string class, such as Reverse, Sort, and Re-place etc.

4.4 Press Release Application

It is a interesting application about how media/press releases the news

4.4.1 Objective:

Understand how events are used with the help of delgate.

4.4.2 Problem Statement:

> TNN (Times News Network) publishes press releases throughout India and World through World News and National News. Each and every subscriber can get the news (press releas-es) through them, provided they subscribe to the TNN, either World News unit or National News unit.
>
> Create an application through which any subscriber, by subscribing to any of those units, can get the current news from TNN.

Hint: You need to create an entity/class called TNN with two events, WorldNews and Natio-nalNews. Publication is done through these two events. The argument of press release event should contain the description of the press release (Report). Finally, each and every subscriber should be represented by an entity, which will receive press release by subscribing some method.