For these following problems you do not need to turn in the three step analysis or the algorithm, but just submit the source code and output. You should of course do these steps anyway.

1) Have the user enter a sentence comprised of both uppercase and lowercase letters. Program will then change each uppercase letter to a lower case letter and vice versa. This is a bit more than it appears, because with the string functions given you are allowed to remove characters from a string, but not easily insert or replace. Take a look at example we had that made the reverse of a sentence. See sample output below:

Enter a sentence
This IS AbC

Converted sentence is
tHIS is aBc

2) This program has the user enter five first names of people, which are stored in an array of strings. These are entered one at a time by the user. Then the names are displayed in reverse order on the screen and then the names are displayed with the length of each name next to it. See sample output:

Enter five first names, each separately
Michael
Joe
Sue
Noah
Keira

These names in reverse order are:
Keira
Noah
Sue
Joe
Michael

Lengths of each name are as follows
Name   Length
--------
Michael 7
Joe     3
Sue     3
Noah    4
Keira   5
3) This problem will call a procedure that randomly fills up an integer array with ten random numbers from 1 to 100. This program can also have a global constant, declared right after Module and before “Sub Main()”, that is

```
Const ARRAYSIZE as Integer = 10
```

After come back from the procedure that filled up the array, then display contents of the array on one line. Then need to call the Bubble Sort routine to sort these elements. After sorted, then display the array again in one line. See sample output below:

```
Array before sorted
4 30 4 67 94 62 26 80 45 56
```

```
Array after sorted
4 4 26 30 45 56 62 67 80 94
```

This problem will rely a lot on lab #10, which uses the bubble sort algorithm. See the handout “Bubble Sort” for details on the algorithm.

This problem will have total of two procedures you write, one FillUpArray and second is BubbleSort (from Lab #10). The Swap procedure is given here below for you.

```
'******************************************************************************
'Swap ******************************************************************************
'Will swap two values passed in
'******************************************************************************
Sub Swap(ByRef X As Integer, ByRef Y As Integer)
    Dim Temp As Integer = X
    X = Y
    Y = Temp
End Sub
```