Assignment #4 – String Parsing and Arrays

Overview

In this assignment, you will write a program to parse strings in various ways, and create and manipulate arrays.

This assignment must be done individually, and it is worth 5% of the course grade.

Design and Coding

1. Create a NEW Visual Basic Windows Forms App (.NET Framework), and you must name the project as **A4_StringArrays_YourCollegeUsername** to be located in your College OneDrive.

Part I: string parsing (50%)

2. When the form loads, initialize a string to contain YOUR first and last name, YOUR student number, YOUR favorite color, YOUR favorite month, and YOUR year of birth (does not have to be real). Separate each with a comma expect the names. For example,

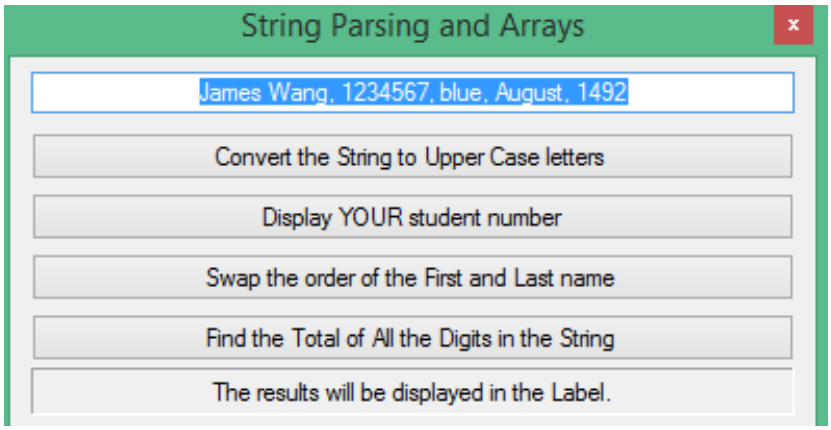
   ```
   strParsing = "James Wang, 1234567, blue, August, 1492"
   ```

   Note: this is only an example for testing.

   Display the above string in a textbox with the string aligned at center, when the form loads. Please note that the program should work the same for any string that has this format, and that different strings will be used when your program is being evaluated.

3. Add controls to allow the user to do each of the tasks listed below (one task per control):
   (1) Convert a copy of the string in uppercase letters and display it.
   (2) Display the student number only. You must find this in the string. (Hint: after the first comma.)
   (3) Swap the order of the first and last names in the string, then display the string.
   (4) Calculate the total of the digits in the string and display it. That is, for the example above, the digits are 1,2,3,4,5,6,7 and 1,4,9,2. These total to 44.
   (5) Use **one** label to display the result of a task; i.e., the new result will overwrite the previous result shown in the label. Set the label properties as follows: ***TextAlign*** → *MiddleCenter*, ***BorderStyle*** → *Fixed3D*, and ***AutoSize*** → *False*.

Note: all the data that are displayed must come from the original string, and the original characters in it must be preserved; i.e., for tasks that include the complete string, the commas must still be in the string.



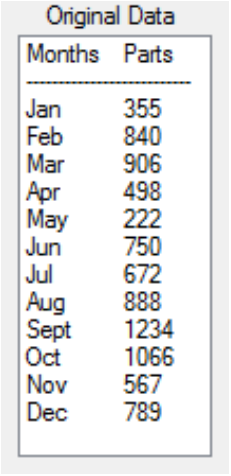
Part II: array manipulations (50%)

4. Continue on the project, and create an array given below when the form loads.

```
arParts = {355, 840, 906, 498, 222, 750, 672, 888, 1234, 1066, 567, 789}
```

5. This array consists of a collection of parts produced in each month of a year, from Jan to Dec.

6. Write a program to list the array data and the corresponding months in a list box, as shown on the right, when a button ***List Original Data*** is pressed.



7. Sort the original data by ascending, and list the results in a second list box that is placed beside the first list box, when a button ***Sort Ascending*** is pressed.

   Please note that there are still two columns in the second list box, one column for the ascendingly sorted parts, and the other for the corresponding months.

8. Calculate the average and total parts produced in the *first six months* of the year, when a button ***Analysis*** is pressed, and then display the results in new control(s) to be added.

Assignment Submissions

You need to submit a PDF file of your source code with a title page, as well as uploading the zipped file of your VB project to Assignment #4 dropbox.

a. For the PDF file, you must include your **full name**, course number, course name, etc. on the title page and on the FIRST line of your source code, as a comment.
b. For the zipped file, refer to Tutorial #04 (available in Week 04 syllabus) on how to compress a Visual Basic 2019 project for the detailed instructions.
   i. The due date of Assignment #4 is shown on eConestoga. Both files must be submitted by the due date – **late submission will NOT be accepted**.