**Submission of Your Work**

You need to prepare and submit ONE SINGLE MS Word document to Canvas (in your lab section) as LastName\_FirstName\_Lab09.doc. It must contain:

* Your NAME
* For each question:
  + Specify the question number.
  + After reading the question requirements, but before beginning any coding, create the test case table, below, through column Expected Output. Write your program then complete the **test table** with actual output results and include in your report.
  + Copy/Paste your completed source code. You must include standard “header” in every program even if code is provided.
  + Paste in a snippet of output showing results for **every listed test case**, labeled with test case #

Test Table:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test # | Valid / Invalid Data | Description of test | Input Value | Actual Output | Test Pass / Fail |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |
| 6 |  |  |  |  |  |

* Add / delete rows from Test Table as necessary
* Modify column widths as necessary
* Test both valid and invalid input
* Test for every output expected
* If failure is an expected output and it happens then that test Passes
* Any test that fails means the program must be fixed so that it passes the test

### **Question 1**

Consider the following code segment:

int main()

{

cons int SIZE = 20;

int values[SIZE] = {0, 23, 34, -7, 110, 42, -350, 424, 25, 99, 10, 05, 50, -5, 1, 200, -350, 437, 25, 147};

// your code goes here

}

Write a complete program to display the values from each of the following four steps. All displays must be done in main. Use separate functions for each step below, passing the array to each function.

* 1. Provide the sum of the numbers in this array – function must return an int.
  2. Provide the average of the positive numbers in this array – function must return a double.
  3. Provide the lowest number in the array – function must return an int.
  4. Provide the highest number in the array – function must return an int.

### **Question 2**

Write the following function definition:

// Author:

// Creation Date:

// Last Modification Date:

// Purpose: Search for a value V in the array a of integers

// Return the position of V in the array if V is found

// Otherwise (V not found), return -1

int searchValueInArray (int V, int a[], int size)

{

// To be completed by student

}

Write a main program that includes the following array declaration:

const int SIZE = 8;

int array [SIZE] = {10, 60, 20, 50, 30, 40, -10, 0};

The program prompts the user for an integer value then calls the function to find out if the value exists in the array.

Example 1:

Please enter an integer value: 20

The value 20 exists in position 2 of the array

Example 2:

Please enter an integer value: 35

Sorry, the array does not contain the value 35