Lab 08
Arrays & Strings

Lab objectives

After completing this lab, the students should be able to

- Explain the syntax of array and string declaration, assignment and initialization
- Write programs to model repetitive data using arrays
- Manipulate the array data structure
- Manipulate string data type

Task: 01

Write a program that takes an integer array of size 10 form the user and displays how many times integer 5 appears in it.

Sample input

Array = $\{0, 3, 5, 6, -1, 5, -9, 10, 5, -7\}$

Sample Output:

3

Task: 02

Write a program that displays

a. how many numbers in the above array (task 1) are greater and less than 5.
b. The program should also display the minimum and maximum values in the array.

Task: 03

Take a single dimensional integer array of size 10 from the user and sort it in ascending order. Consider the following example

$$int\ arr[SIZE]\ =\ \{3, 1, 7, 0\}$$

You have to compare the adjacent neighbors $arr[i]$ and $arr[i+1]$ and swap them if $arr[i] > arr[i+1]$ (where i starts from 0 and goes to SIZE-1 in this case). After the first run, the array values look like

$$int\ arr[]\ =\ \{1, 3, 0, 7\}$$

You have to repeat this process SIZE times to get the final sorted output.

Final Output: $int\ arr[]\ =\ \{0, 1, 3, 7\}$

Task 4:

Write a program that initializes a string and finds how many times a substring (entered by user) appears in it. The size of substring must be less than or equal to the size of string.

Note: “is” is a substring of “This is my bigger string and it is c plus plus string”. The substring appears 2 times in the string.