Programming Fundamentals LAB – BSDSF24

(Both Morning and Afternoon)

Lab 10 – 29-11-2024

Homework Lab: Complete and bring in the coming lab to evaluate.

use notepad++ and developer command prompt for the following tasks

Task 01 (25 marks each)

1. Write a function that accepts an array<float, 12> as parameter and return same type array with rearranged values as described below. Later, develop and verify its working for a few test cases.

   Select the last element in array as a pivot, using logic (sequence of CPP statements, including variable assignments, loops and conditions) place it at its position if the array is sorted. Also, array elements before it should be less than or equal to it, and array elements after it should be greater than it. The elements in the rearranged array are not required to be sorted. The catch is to complete this task with simpler logic than sorting logic. You may use several arrays to complete this task.

   *parameter array: 23, 54, 12, 19, 67, 9, 45, 32, 90, 58, 19, **48***
   *one possible return array: 23, 12, 19, 9, 45, 32, 19, **48**, 54, 67, 90, 58*

2. Repeat the above task, but this time function should be void and accept array as reference and solve the problem without creating any new array.

Task 02 (25 marks each)

3. Write a function that accepts an array<float, 20> as its first parameter and return same type array as sorted in ascending order. The array received should be sorted in ascending order from the beginning up to some index near the middle of array. The rest of the array is also sorted in ascending order. The other parameters of the function may be the location from which up to which the first array is sorted. Later, develop and verify its working for a few test cases. *Again, the catch is to complete this task with simpler logic than sorting logic. You may use several arrays to complete this task.*

   *parameter array: 7, 12, 25, 45, 82, **97**, 3, 34, 38, 40, 49, 52, 65, 83, 91*
   only possible return array: sorted in ascending order

4. Repeat the above task, but this time function should be void and accept array as reference and solve the problem without creating any new array.

-- End of Lab –