CL2001 – Data Structure Lab

Exercise # 01

Note:

- Copied task will be awarded **zero** marks.
- Use comments wherever applicable.
- Note that these lab task marks could be graded through a viva in lab.
- Submit a pdf file containing all of your C++ code with all possible screenshots of every task outputs on Google Classroom. The name of file should be your roll no followed by your name (roll-no-name.pdf) i.e (22P-8743-Zain.pdf).

Problem: 1

Populate an array of your size choice and write a program to find the largest and

smallest element in that array.

Note: Perform the above task using pointer variables.

Problem: 2 | Two Sum

Given an array of integers nums and an integer target, return indices of the two numbers such that they

add up to target.

You may assume that each input would have exactly one solution, and you may not use the same element twice.

You can return the answer in any order.

Example 1:

Input: nums = [2,7,11,15], target = 9

Output: [0,1]

Explanation: Because nums[0] + nums[1] == 9, we return [0, 1].

Example 2:

Input: nums = [2,3,4], target = 6

Output: [0,2]

Example 3:

Input: nums = [3,3], target = 6

Output: [0,1]

Problem: 3

Write a function find_small_val(int A[]) that given an array A of N integers, returns the smallest positive integer (greater than 0) that does not occur in A.

For example, given A = [1, 3, 6, 4, 1, 2], the function should return 5.

Given A = [1, 2, 3], the function should return 4.

Given A = [-1, -3], the function should return 1.

Write a program for the following assumptions.

Each element of array A is an integer within the range

[-1,000,000...1,000,000].