List of Experiments (Lab-Day wise)

Lab Day 1: Revision of Data Structures

1.1 *Aim of the program:* Write a program to find out the second smallest and second largest element stored in an array of n integers.
Input: Size of the array is 'n' and read 'n' number of elements from a disc file.
Output: Second smallest, Second largest

1.2 *Aim of the program:* Given an array arr[] of size N, find the prefix sum of the array. A prefix sum array is another array prefixSum[] of the same size, such that the value of prefixSum[i] is arr[0] + arr[1] + arr[2] . . . arr[i].

Input Array:	3	4	5	1	2
Output Array:	3	7	12	13	15

1.3 *Aim of the program:* Write a program to read 'n' integers from a disc file that must contain some duplicate values and store them into an array. Perform the following operations on the array.

a) Find out the total number of duplicate elements.
b) Find out the most repeating element in the array.

Input:
Enter how many numbers you want to read from file: 15

Output:
The content of the array: 10 40 35 47 68 22 40 10 98 10 50 35 68 40 10
Total number of duplicate values = 4
The most repeating element in the array = 10

1.4 *Aim of the program:* Write a function to ROTATE_RIGHT(p1, p2) right an array for first p2 elements by 1 position using EXCHANGE(p, q) function that swaps/exchanges the numbers p & q. Parameter p1 be the starting address of the array and p2 be the number of elements to be rotated.

Input:

Enter an array A of size N (9): 11 22 33 44 55 66 77 88 99
Call the function ROTATE_RIGHT(A, 5)

Output:

Before ROTATE: 11 22 33 44 55 66 77 88 99
After ROTATE: 55 11 22 33 44 66 77 88 99