# School of Computer Engineering
# KIIT deemed to be University
# Autumn 2023 (5th Semester)

**Scheme - II**

**Lab No :: Lab Day 1**

**Section** :: CSE 24

**Course Name and Code** :: Algorithms Laboratory-CS2098 (L-T-P-Cr: 0-0-2-1)

***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*** : Enter size : 10

***Output*** **:**

Elements :
41
17
34
0
19
24
28
8
12
14

Second Largest : 34
Second Smallest : 8

***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

***Input*** : 3 4 5 1 2

***Output*** **:**

Enter size : 10

Elements after operation:
2
8
5
1
10
5
9
9
3
5

Elements :
2
10
15
16
26
31
40
49
52
57

***1.3 Aim of the program:*** 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

**Input:**

File Opened successfully.
Enter number of integers to be taken : 10

**Output:**

Elements in array :
1
7
4
0
9
4
8
8
2
4

Array without Duplicates :
1
7
4
0
9
8
2

Total number of duplicate values : 2
The most repeating element in the array : 4

***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 value of n : 6

**Output:**

Elements :
6
0
1
2
3
4
5
7
8
9