# Rajalakshmi Engineering College

Name: Joe Benedict A
Email: 241901042@rajalakshmi.edu.in
Roll no:
Phone: 6381868628
Branch: REC
Department: CSE (CS) - Section 2
Batch: 2028
Degree: B.E - CSE (CS)

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## 2024_28_III_OOPS Using Java Lab

## 2028_REC_OOPS using Java_Week 3_Q1

Attempt : 1
Total Mark : 10
Marks Obtained : 10

### Section 1 : Coding

1. Problem Statement

Rosh is intrigued by numerical patterns. Today, she stumbled upon a puzzle while working with arrays. She wants to compute the sum of the third-largest and second-smallest elements from a list of integers. She seeks your help to implement a program that solves this for her efficiently.

***Input Format***

The first line of input is an integer N, representing the size of the array.

The second line of input consists of N space-separated integers, representing the elements of the array.

***Output Format***

The output displays a single integer representing the sum of the third-largest and second-smallest elements in the array.

Refer to the sample output for the formatting specifications.

***Sample Test Case***

Input: 10
10 20 30 40 50 60 70 80 90 100

Output: 100

***Answer***

```
import java.util.*;

class ArrayPatternSum {
   public static void main(String[] args) {
      Scanner sc = new Scanner(System.in);

      // Read size of array
      int N = sc.nextInt();
      int[] arr = new int[N];

      // Read array elements
      for (int i = 0; i < N; i++) {
         arr[i] = sc.nextInt();
      }

      // Use TreeSet to sort and remove duplicates
      TreeSet<Integer> sortedSet = new TreeSet<>();
      for (int num : arr) {
         sortedSet.add(num);
      }

      // Convert to list for index access
      List<Integer> sortedList = new ArrayList<>(sortedSet);

      // Get second-smallest and third-largest
      int secondSmallest = sortedList.get(1);
      int thirdLargest = sortedList.get(sortedList.size() - 3);

      // Output the sum
      System.out.println(secondSmallest + thirdLargest);
```

```
    }
}
```

***Status :*** Correct ***Marks : 10/10***