

# Rajalakshmi Engineering College

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Batch: 2028  
Degree: B.E - AI & ML

Scan to verify results



## 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**

// You are using Java

```
import java.util.Arrays;
```

```
import java.util.Scanner;
```

```
public class Main {  
    public static void main(String[] args) {  
        Scanner scanner = new Scanner(System.in);  
        int n = scanner.nextInt();  
        int[] arr = new int[n];  
        for (int i = 0; i < n; i++) {  
            arr[i] = scanner.nextInt();  
        }  
  
        Arrays.sort(arr);  
  
        int thirdLargest = arr[n - 3];  
        int secondSmallest = arr[1];  
  
        System.out.println(thirdLargest + secondSmallest);  
        scanner.close();  
    }  
}
```

**Status :** Correct

**Marks :** 10/10

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## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 3\_Q2

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

Monica is interested in finding a treasure but the key to opening is to get the sum of the main diagonal elements and secondary diagonal elements.

Write a program to help Monica find the diagonal sum of a square 2D array.

Note: The main diagonal of the array consists of the elements traversing from the top-left corner to the bottom-right corner. The secondary diagonal includes elements from the top-right corner to the bottom-left corner.

##### ***Input Format***

The first line of input consists of an integer N, representing the number of rows and columns.

The following N lines consist of N space-separated integers, representing the 2D array elements.

### **Output Format**

The first line of output prints "Sum of the main diagonal: " followed by an integer, representing the sum of the main diagonal.

The second line prints "Sum of the secondary diagonal: " followed by an integer, representing the sum of the secondary diagonal.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 3

1 2 3

4 5 6

7 8 9

Output: Sum of the main diagonal: 15

Sum of the secondary diagonal: 15

### **Answer**

// You are using Java

```
import java.util.Scanner;
```

```
public class Main {  
    public static void main(String[] args) {  
        Scanner scanner = new Scanner(System.in);  
        int n = scanner.nextInt();  
        int[][] matrix = new int[n][n];
```

```
        for (int i = 0; i < n; i++) {  
            for (int j = 0; j < n; j++) {  
                matrix[i][j] = scanner.nextInt();  
            }  
        }
```

```
        int mainDiagonalSum = 0;  
        for (int i = 0; i < n; i++) {  
            mainDiagonalSum += matrix[i][i];
```

```
}  
  
int secondaryDiagonalSum = 0;  
for (int i = 0; i < n; i++) {  
    secondaryDiagonalSum += matrix[i][n - 1 - i];  
}  
  
System.out.println("Sum of the main diagonal: " + mainDiagonalSum);  
System.out.println("Sum of the secondary diagonal: " +  
secondaryDiagonalSum);  
  
scanner.close();  
}  
}
```

**Status :** Correct

**Marks :** 10/10

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## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 3\_Q3

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

You are developing a warehouse management system for a shipping company. The system uses an integer array to represent the weights of packages in a specific order. To verify that the weight capacity is not exceeded, the program needs to calculate the sum of the weights of the first and last packages in the list.

Task:

Write a code to calculate the sum of the weights of the first and last packages in the list. The program should take an integer array as input and return the total weight of the first and last packages.

##### ***Input Format***

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

The second line of the input is N space-separated integer values.

### **Output Format**

The output is displayed in the following format:

"Sum of the first and last elements: <<Sum>>"

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 5

10 20 30 40 50

Output: Sum of the first and last elements: 60

### **Answer**

```
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int n = scanner.nextInt();
        int[] arr = new int[n];
        for (int i = 0; i < n; i++) {
            arr[i] = scanner.nextInt();
        }

        int sum = arr[0] + arr[n - 1];

        System.out.println("Sum of the first and last elements: " + sum);
        scanner.close();
    }
}
```

**Status :** Correct

**Marks :** 10/10