

# Rajalakshmi Engineering College

Name: JAGADISH S A

Email: 241501071@rajalakshmi.edu.in

Roll no:

Phone: 9245831133

Branch: REC

Department: AI & ML - Section 1

Batch: 2028

Degree: B.E - AI & ML

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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.*;
class Main{
    public static void main(String args[]){
        int n;
        Scanner input=new Scanner(System.in);
        n=input.nextInt();
        int[][] a=new int[n][n];
        for(int i=0;i<n;i++){
            for(int j=0;j<n;j++){
                a[i][j]=input.nextInt();
            }
        }
        int mn=0;
        int sc=0;
        for(int i=0;i<n;i++){
            mn+=a[i][i];
            sc+=a[i][n-1-i];
        }
    }
}
```

```
        }
        System.out.printf("Sum of the main diagonal: %d",mn);
        System.out.printf("\nSum of the secondary diagonal: %d",sc);
    }
}
```

**Status : Correct**

**Marks : 10/10**