

Rajalakshmi Engineering College

Name: SUBASH R
Email: 240701538@rajalakshmi.edu.in
Roll no: 240701538
Phone: 9150202710
Branch: REC
Department: CSE - Section 7
Batch: 2028
Degree: B.E - CSE

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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

```
import java.util.*;  
  
public class Main{  
    public static void main(String []args){  
        Scanner in=new Scanner(System.in);  
        int n=in.nextInt(),mainsum=0,secsum=0;  
        int arr[][]=new int[n][n];  
        for(int i=0;i<n;i++)  
            for(int j=0;j<n;j++)  
                arr[i][j]=in.nextInt();  
        for(int i=0;i<n;i++)  
            mainsum+=arr[i][i];  
        System.out.println("Sum of the main diagonal: "+mainsum);  
        int j=n-1;  
        for(int i=0;i<n;i++){  
            secsum+=arr[i][j];  
            j--;  
        }  
    }  
}
```

```
        System.out.println("Sum of the secondary diagonal: "+secsum);  
    }  
}
```

Status : Correct

Marks : 10/10