Rajalakshmi Engineering College

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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 sd{
    public static void main(String args[]){
        Scanner s=new Scanner(System.in);
        int a=s.nextInt();
        //int b=s.nextInt();
        int i,j;
        int[][] mat=new int[a][a];
        for(i=0;i<a;i++){
            for(j=0;j<a;j++){
                mat[i][j]=s.nextInt();
            }
        }
        int s1=0;
        int s2=0;
        for(i=0;i<a;i++){
            for(j=0;j<a;j++){
```

```
            if(i==j){
               s1=s1+mat[i][j];

            }
            if(i+j==a-1){
               s2=s2+mat[i][j];
            }
         }
      }
      System.out.printf("Sum of the main diagonal: %d",s1);
      System.out.printf("\nsum of the secondary diagonal: %d",s2);

   }
}
```

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