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

```
import java .util.*;

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

      for(int i=0;i<n;i++){
         for(int j=0;j<n;j++){
            arr[i][j]=sc.nextInt();
         }

      }
      int md=0;
      int sd=0;
      for(int i=0;i<n;i++){
         for(int j=0;j<n;j++){
```

```
            if(i==j)
             md+=arr[i][j];
          }
        }
        int j;
         for(int i=0;i<n;i++){
            for( j=n-1-i;j>=0;j--){

            if(n-1-i==j)
               sd+=arr[i][j];
            continue;

          }
         }
        System.out.println("Sum of the main diagonal: "+md);

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

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