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.io.*;
import java.util.*;
class Main
{
   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 sum1=0,sum2=0;
        for(int i=0;i<n;i++)
        {
            for(int j=0;j<n;j++)
            {
                if(i==j)
                {
                    sum1+=arr[i][j];
                }
            }
        }
        for(int i=0;i<n;i++)
        {
            sum2+=arr[i][n-i-1];
        }
        System.out.printf("Sum of the main diagonal: %d\n",sum1);
        System.out.printf("Sum of the secondary diagonal: %d",sum2);
    }
}
```

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