

Rajalakshmi Engineering College

Name: Nakshatra Pa
Email: 241901062@rajalakshmi.edu.in
Roll no: 241901062
Phone: 8838047354
Branch: REC
Department: CSE (CS) - Section 1
Batch: 2028
Degree: B.E - CSE (CS)

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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){
```

```
        Scanner n=new Scanner(System.in);
```

```
        int a=n.nextInt();
```

```
        int sum=0,sum2=0;
```

```
        int[][] arr=new int[a][a];
```

```
        for(int i=0; i<a; i++){
```

```
            for(int j=0; j<a; j++){
```

```
                int e=n.nextInt();
```

```
                arr[i][j]=e;
```

```
                if(i==j){
```

```
                    sum+=e;
```

```
            }
```

```
        }
```

```
    }
```

```
    int row=0;
```

```
int col=a-1;
while(row<=a-1 && col>=0){
    sum2+=arr[row][col];
    row++;
    col--;
}
System.out.println("Sum of the main diagonal: "+sum);
System.out.println("Sum of the secondary diagonal: "+sum2);
}
}
```

Status : Correct

Marks : 10/10