

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.Scanner;
```

```
class m
```

```
{
```

```
    public static void main(String args[])
```

```
    {
```

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

```
        int s1 = 0;
```

```
        int s2=0;
```

```
        int r = in.nextInt();
```

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

```
        for(int i=0;i<r;i++)
```

```
        {
```

```
            for(int j=0;j<r;j++)
```

```
            {
```

```
                a[i][j] = in.nextInt();
```

```
            }
```

```
        }
```

```
for(int i=0;i<r;i++)
{
    for(int j=0;j<r;j++)
    {
        if(i==j)
        {
            s1 = s1 + a[i][j];
        }
    }
}
for(int i=0;i<r;i++)
{
    for(int j=0;j<r;j++)
    {
        if(i+j == r-1)
        {
            s2 = s2 + a[i][j];
        }
    }
}
System.out.println("Sum of the main diagonal: " + s1);
System.out.print("Sum of the secondary diagonal: " + s2);
}
```

Status : Correct

Marks : 10/10