

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.*;
public class Main{
    public static void main(String[] args){
        Scanner ip=new Scanner(System.in);
        int n=ip.nextInt();
        int arr[][]=new int[n][n];
        for(int i=0;i<n;i++){
            for(int j=0;j<n;j++){
                arr[i][j]=ip.nextInt();
            }
            System.out.println();
        }
        int p_s=0;
        for(int i=0;i<n;i++){
            int j=i;
            p_s+=arr[i][j];
        }
        int s_s=0;
```

```
int i=0;
for(int j=n-1;j>=0;j--){
    s_s+=arr[i][j];
    i++;
}
System.out.printf("Sum of the main diagonal: %d\n",p_s);
System.out.printf("Sum of the secondary diagonal: %d\n",s_s);
ip.close();
}
}
```

Status : Correct

Marks : 10/10