Practical No:19

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Semester: 3
Date: December 26, 2021

Objective: WAP to find the diagonal elements of the matrix.

Code :

```
import java.util.Scanner;

/**
 * DiagonalAddition
 */
public class DiagonalAddition {

    public static void main(String[] args) {
        Scanner sc= new Scanner(System.in);
        int n;
        System.out.print("Enter the number of rows: ");
        n= sc.nextInt();
        int arr[][]= new int[n][n];
        int sum=0;

        for (int i = 0; i < n; i++) {
            for (int j = 0; j < n; j++) {
                System.out.print("Enter arr["+ i+"]["+ j+ "]: ");
                arr[i][j]= sc.nextInt();
                if(i==j){
                    sum+=arr[i][j];
                }
            }
        }
        System.out.println("The matrix is: ");
        for (int i = 0; i < n; i++) {
            for (int j = 0; j < n; j++) {
                System.out.print(arr[i][j] + "\t");
            }
            System.out.println();
        }

        System.out.println("The sum of diagonal elements is: "+ sum);
```

```
        sc.close();

    }
}
```

Output:

```
PS E:\03 Semester\Java\Assignments\Assignment_09_dec26_diagAdd> cd "e:\03 Semester\Java\Assignments\Assignment_09_dec26_diagAdd\" ; if ($?) { javac DiagonalAddition.java } ; if ($?) { java DiagonalAddition }
Enter the number of rows: 4
Enter arr[0][0]: 5
Enter arr[0][1]: 6
Enter arr[0][2]: 7
Enter arr[0][3]: 3
Enter arr[1][0]: 5
Enter arr[1][1]: 6
Enter arr[1][2]: 7
Enter arr[1][3]: 8
Enter arr[2][0]: 9
Enter arr[2][1]: 4
Enter arr[2][2]: 2
Enter arr[2][3]: 4
Enter arr[3][0]: 6
Enter arr[3][1]: 4
Enter arr[3][2]: 6
Enter arr[3][3]: 5
The matrix is:
5       6       7       3
5       6       7       8
9       4       2       4
6       4       6       5
The sum of diagonal elements is: 18
```