OBJECT ORIENTED PROGRAMING LAB

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Batch : B

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Experiment No.: 3

Aim

Read a matrix from the console and check whether it is symmetric or not.

Source Code

```
import java.util.*;
class SymmetricMatrix{

        public static void main(String[] args){

                int row, col;
                Scanner sc= new Scanner(System.in);
                boolean isSymmetic= true;

                System.out.print("Enter the number of rows for the Matrices    : ");
                row= sc.nextInt();
                System.out.print("Enter the number of columns for the Matrices : ");
                col= sc.nextInt();

                int[][] matrix= new int[row][col];

                System.out.println("Enter the elements for the Matrix : ");
                for(int i=0;i<row;i++){
                        for(int j=0;j<col;j++){
                                matrix[i][j]= sc.nextInt();
                        }
                }
                System.out.println("\n");

                System.out.println("The entered matrix is : ");
                for(int i=0;i<row;i++){
                        for(int j=0;j<col;j++){
                                System.out.print(matrix[i][j]+"   ");
                        }
                        System.out.println("\n");
```

```
                }

                for(int i=0;i<row;i++){
                        for(int j=0;j<col;j++){
                                if(i!=j){
                                        if(matrix[i][j]!=matrix[j][i]){
                                                isSymmetic= false;
                                                break;
                                        }
                                }
                        }

                        if(!isSymmetic)
                                break;
                }

                if(isSymmetic){
                        System.out.println("The entered matrix is Symmetric Matrix");
                }
                else{
                        System.out.println("The entered matrix is not a Symmetric
Matrix");
                }
        }
}
```

Output Screenshot

```
D:\Swetha\Java>javac SymmetricMatrix.java

D:\Swetha\Java>java SymmetricMatrix
Enter the number of rows for the Matrices    : 3
Enter the number of columns for the Matrices : 3
Enter the elements for the Matrix :
4
5
3
1
8
0
6
3
1


The entered matrix is :
4   5   3

1   8   0

6   3   1

The entered matrix is not a Symmetric Matrix
```