

OBJECT ORIENTED PROGRAMMING LAB

Experiment No.: 4

Aim

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

Procedure

Source Code

```
import java.util.Scanner;

public class SymmetricMatrix {

    public void Display(int [][] arr,int row,int col){

        for(int i=0;i<row;i++){

            for(int j=0;j<col;j++){

                System.out.print(arr[i][j]+"\\t");

            }

            System.out.println();

        }

    }

    public static void main(String[] args) {

        int [][] mat = new int[3][3];

        int [][] trans=new int[3][3];

        int row,col;

        SymmetricMatrix obj=new SymmetricMatrix();

        Scanner s=new Scanner(System.in);

        System.out.println("Enter the rows and columns of the matrix:");

        row=s.nextInt();

        col=s.nextInt();

        System.out.println("Enter the elements of the matrix:");

        for(int i=0;i<row;i++)

        {

            for(int j=0;j<col;j++)

            {

                mat[i][j]=s.nextInt();
```

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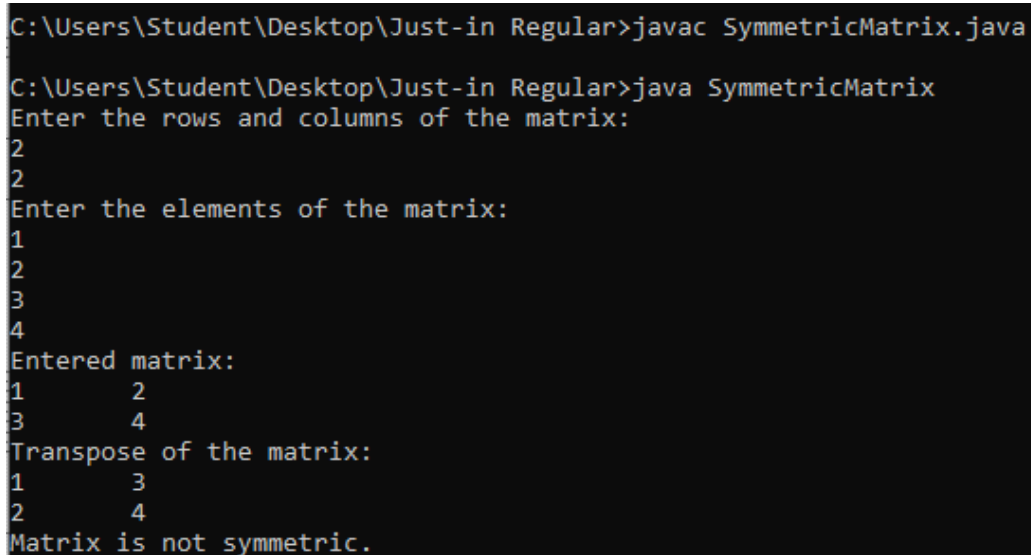
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Date:06/04/22

```
    }  
    }  
    for(int i=0;i<row;i++)  
    {  
        for(int j=0;j<col;j++)  
        {  
            trans[j][i]=mat[i][j];  
        }  
    }  
    System.out.println("Entered matrix:");  
    obj.Display(mat,row,col);  
    System.out.println("Transpose of the matrix:");  
    obj.Display(trans,row,col);  
    for(int i=0;i<row;i++){  
        for(int j=0;j<col;j++){  
            if(mat[i][j]!=trans[i][j]){  
                System.out.println("Matrix is not symmetric.");  
                System.exit(0);  
            }  
        }  
    }  
    System.out.println("The given matrix is symmetric.");  
}  
}
```

Output Screenshot



```
C:\Users\Student\Desktop\Just-in Regular>javac SymmetricMatrix.java  
  
C:\Users\Student\Desktop\Just-in Regular>java SymmetricMatrix  
Enter the rows and columns of the matrix:  
2  
2  
Enter the elements of the matrix:  
1  
2  
3  
4  
Entered matrix:  
1      2  
3      4  
Transpose of the matrix:  
1      3  
2      4  
Matrix is not symmetric.
```