

**OBJECT ORIENTED PROGRAMMING LAB****Experiment No.: 4****Name: Mathew Sebastian****Roll No: 18****Batch: B****Date: 8/04/22****Aim**

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

**Procedure**

```
import java.util.Scanner;

public class SymmetricMatrix
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);

        System.out.println("Enter the numb of rows : ");

        int rows = sc.nextInt();

        System.out.println("Enter the numb of columns : ");

        int cols = sc.nextInt();

        int matrix[][] = new int[rows][cols];

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

        for (int i = 0; i < rows; i++)
        {
            for (int j = 0; j < cols; j++)
            {
                matrix[i][j] = sc.nextInt();
            }
        }

        System.out.println("Printing the input matrix :");

        for (int i = 0; i < rows; i++)
        {
            for (int j = 0; j < cols; j++)
```

```
{
    System.out.print(matrix[i][j]+"\\t");
}

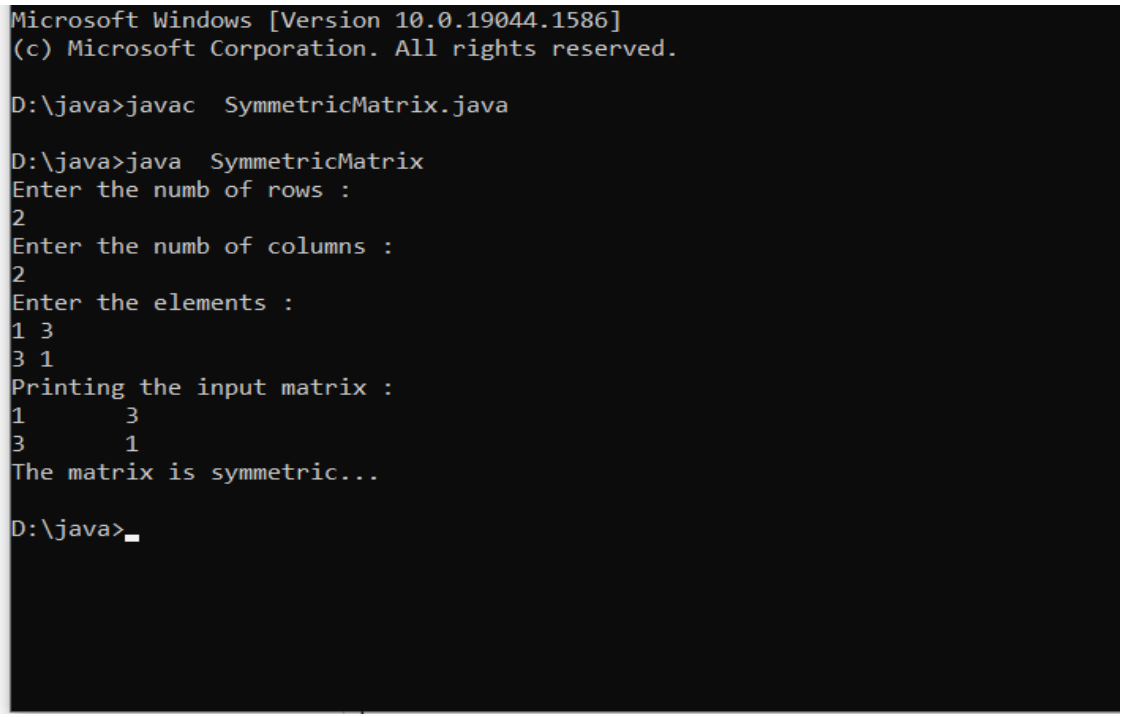
System.out.println();
}

if(rows != cols)
{
    System.out.println("The matrix is not a square matrix, so it can't be symmetric.");
}
else
{
    boolean symmetric = true;

    for (int i = 0; i < rows; i++)
    {
        for (int j = 0; j < cols; j++)
        {
            if(matrix[i][j] != matrix[j][i])
            {
                symmetric = false;
                break;
            }
        }
    }

    if(symmetric)
    {
        System.out.println("The matrix is symmetric...");
    }
    else
    {
        System.out.println("The matrix is not symmetric...");
    }
}

sc.close();
}
}
```

**Output Screenshot**

```
Microsoft Windows [Version 10.0.19044.1586]
(c) Microsoft Corporation. All rights reserved.

D:\java>javac SymmetricMatrix.java

D:\java>java SymmetricMatrix
Enter the numb of rows :
2
Enter the numb of columns :
2
Enter the elements :
1 3
3 1
Printing the input matrix :
1      3
3      1
The matrix is symmetric...

D:\java>
```