OBJECT ORIENTED PROGRAMMING LAB

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Experiment No : 4

Aim

The program to find the matrix is symmetric or not.

Procedure

```
import java.util.Scanner;

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

      System.out.println("Enter the no. of rows : ");

      int rows = sc.nextInt();

      System.out.println("Enter the no. 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("Not Square Matrix");
      }
      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 given matrix is symmetric...");
         }
         else
         {
            System.out.println("The given matrix is not symmetric...");
         }
      }

      sc.close();
   }
}
```

Output Screenshot

```
Enter the no. of rows :
2
Enter the no. of columns :
2
Enter the elements :
1
2
2
1
Printing the input matrix :
1       2
2       1
The given matrix is symmetric...

C:\Users\Student\Desktop\java>java Symmetric
Enter the no. of rows :
2
Enter the no. of columns :
2
Enter the elements :
2
3
4
5
Printing the input matrix :
2       3
4       5
The given matrix is not symmetric...

C:\Users\Student\Desktop\java>
```