OBJECT ORIENTED PROGRAMMING LAB

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Batch:MCA

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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();
```

```
        }
      }
      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.
```