Week 6

Develop a Java program to find the transpose of a given matrix of order MXN

```
import java.util.*;

class transposeOfMatrix {
  public static void main(String[] args) {
   int m, n, i = 0, j=0
   Scanner s= new Scanner(System.in);

   System.out.println(" Enter number of columns
     in matrix ");
   n= s.nextInt();

   int[][] a = new int[m][n];
   int [][] b = new int [n][m];

  System.out.println(" Enter element of matrix ");

  for (i=0 ; i <m ; i++) {
     for ( j=0; j<n ; j++)
      a [i][j] =s.nextInt();
   }

    for (i=0 ; i <m; i++) {
      for(j =0 ; j<n ; j++)
       b[j][i] = a[i][j];
   }

   System.out.println("n original matrix: ");

   for (i=0 ; i<m ; i++) {
     for (j=0 ; j<n ; j++)
       System.out.print(a[i][j] + " ");
```

```
System.out.println("\n Transpose of original
        matrix: ");

for (i=0; i<n; i++) {
    for (j=0; j<m; j++)
        System.out.print(b[i][j] + " ");
        System.out.println();
    }
}
```

2. Develop a Java program which has the (only) circleDemo that has members - radius, area & perimeter. Include methods to do the following
   a. accept the radius from the User
   b. find the area of the circle
   c. find the perimeter of the circle
   d. Display all the details.

```
import java.util.*;
import java.lang.Math.*;

class CircleDemo {
  plubic static void main(String[] args) {
    double r, P, Ar;
    Scanner S=new Scanner(System.in);

    System.out.println("Enter radius");
    r= S.nextDouble();

    P= 2*Math.PI*r;
    Ar= Math.PI * (Math.pow(r,2));

    System.out.println("perimeter = " + P + "\n
    Area = " + Ar);
  }
}
```

3 Develop a Java program to create a class Actor with id, name, no_of_movies, no_of_years_exp. Calculate the average performance for each of the actor & print the name of the actor with highest average.

```
import java.util.*;

class Actor {
    private int ID;
    private String name;
    private int no_of_movies;
    private int no_of_years_exp;
    private double avgperformance;
    Scanner S= new Scanner(System.in);

    public Actor() {
        setData();
    }

    public int getID() {
        return this.ID;
    }

    public void setID() {
        int id = S.nextInt();
        this.ID = id;
    }

    public String getName() {
        return this.name;
    }

    public void setName() {
```

```
String name = S.nextLine();
this.name = name;
}

public int getNoOfMovies() {
return this.no_of_movies;
}

public void SetNoOfMovies() {
int noOfMovies = S.nextInt();
this.no_of_movies = noOfMovies;
}

public int getYearsOfExp() {
return this.no_of_years_exp;
}

public void setYearsOfExp() {
int yearsOfExp = S.nextInt();
this.no_of_years_exp = yearsOfExp;
}

public Void SetData() {
System.out.println("Enter actor ID.");
setID();
System.out.println("Enter actor name.");
setName();
System.out.println("Enter number of movies.");
setNoOfMovies();
System.out.println("Enter years of experience");
setYearsOFExp();
}
```

```
public double getAvgperformance() {
    return this.avgperformance;
}

public Void SetAvgPerformance() {
 this.avgperformance = getNoOFMovies/getYearsOf
}

public void printData() {
 getAvgPerformance();

System.out.println("Actor ID: " + getID() +
\n Name: " + getName() + "\n Number of
movies: " + getNoOFMovies() + "\n Years
of Experience: " + getYearsOFExp() +"
\n Average: " + getAvgperformance());
}
}

 class actor {
 public static void main(String[] args){
  int n, i, highestIndex = 0;
  double highestAvg = 0;
  Scanner s = new Scanner(System.in);

 System.out.println("Enter number of
                    actors.");
  n = s.nextInt();

 Actor[] act = new Actor[n];

 for (i=0; i<n; i++) {
  act[i] = new Actor();
  act[i].printData();
 }
```

```
for(i=0; i<n; i++){
if(act[i].getAvgperformance()>highestAvg){
  highestAvg=act[i].getAvgperformance();
  highestIndex=i;
}
}

act[highestIndex].printData();
}
}
```