## Week-6 Programs to practice

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

```
import java.util.Scanner;
public class transpose{
   public static void main(String ss[]){
      int i,j;
      System.out.println("ENTER NO OF ROWS AND COLUMNS");
      Scanner sc = new Scanner(System.in);
      int row = sc.nextInt();
      int column = sc.nextInt();
      int array[][] = new int[row][column];



      System.out.println("ENTER MATRIX");
      for(i = 0; i<row ; i++){

            for(j=0;j<column;j++){
               array[i][j] =sc.nextInt();
               System.out.print("");

         }
      }


      System.out.println("MATRIX ENETERED IS :");
      for(i=0;i<row;i++){
         for(j=0;j<column;j++){
            System.out.print(array[i][j]+" ");
         }
         System.out.println(" ");
      }
```

```
        System.out.println("MATRIX AFTER TRANSPOSE :");
        for(i=0;i<column;i++){
          for(j=0;j<row;j++){
             System.out.print(array[j][i]+" ");
          }
          System.out.println(" ");
        }



    }
}
```

```
C:\Users\win10\Documents\Java lab programs>java transpose
ENTER NO OF ROWS AND COLUMNS
4 3
ENTER MATRIX
2 3 5
6 7 8
9 1 4
5 1 3
MATRIX ENETERED IS :
2 3 5
6 7 8
9 1 4
5 1 3
MATRIX AFTER TRANSPOSE :
2 6 9 5
3 7 1 1
5 8 4 3
```

**2. Develop a Java program which has the (only) class CircleDemo that has members-**
**radius, area and 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.Scanner;
public class circledemo{
   Scanner sc = new Scanner(System.in);
   double r;
   static double area,perimeter;

   void accept(){
      System.out.println("ENTER RADIUS OF CIRCLE");
      r = sc.nextDouble();
   }

     double a(){
        area = (3.14 * r * r);
        return area;
   }
    double p(){
      perimeter = (2 * 3.14 * r);
      return perimeter;
   }

   public static void main(String[] ss){

      Scanner sc = new Scanner(System.in);
      circledemo c1 = new circledemo();
      c1.accept();
      c1.a();
      c1.p();
```

```
        System.out.println("CALCULATED DETAILS");
        System.out.println("AREA :"+circledemo.area);
        System.out.println("PERIMETER :"+circledemo.perimeter);

    }
}
```

```
C:\Users\win10\Documents\Java lab programs>java circledemo
ENTER RADIUS OF CIRCLE
5
CALCULATED DETAILS
AREA :78.5
PERIMETER :31.400000000000002
```

**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 and print the name of the actor with highest average.**

```
import java.util.Scanner;
class actor{
    double noofmovies;
    double yearsofexp;
    String name;
    int id;
    double avg;
    static String highestavg;
    Scanner sc = new Scanner(System.in);

    void average(){
        avg =(noofmovies/yearsofexp);
    }

    void accept(){
        System.out.print("NAME :");
        name = sc.next();
```

```
        System.out.print("ID :");
        id = sc.nextInt();
        System.out.print("NO OF MOVIES :");
        noofmovies = sc.nextDouble();
        System.out.print("YEARS OF EXPERIENCE :");
        yearsofexp = sc.nextDouble();
    }


        void display(){
            System.out.println(name+"       "+id+"      "+avg+"
"+noofmovies+"          "+yearsofexp);
        }

}


class actormain{
    public static void main(String ss[]){
        int n;
        Scanner sc = new Scanner(System.in);
        System.out.println("ENTER NO OF ACTORS DETAILS YOU WANT TO
ENTER");
        n = sc.nextInt();
        actor a1[] = new actor[n];

        for(int i=0;i<n;i++){
            System.out.println("---------------------------------");
            System.out.println("ENTER ACTOR "+(i+1)+" details:");
            a1[i] = new actor();
            a1[i].accept();
            a1[i].average();
        }
```

```
        System.out.println("\n**********************");
        System.out.println(" S.NO  |  NAME  |  ID  |  AVERAGE  |
NO.MOVIES  |  YEARS ");
        System.out.println("_____________________");
        for(int i=0;i<n;i++){
           System.out.print("    "+(i+1)+")   ");
           a1[i].display();
           System.out.println("_____________________");
        }


        double l = 0;
        int index=0;
        for(int i=0;i<a1.length;i++){
           if(a1[i].avg > l){
              l = a1[i].avg;
              actor.highestavg = a1[i].name;
              index = i+1;
           }
        }


        System.out.println("\n*************\n");
        System.out.println("HIGHEST AVERAGE AMONG ALL ACTOR IS:");
        System.out.println("|"+index+"TH MEMBER IN TABLE "+"\n|AND
AVERAGE IS :"+l);
        System.out.println("|ACTOR NAME :"+actor.highestavg);
        System.out.println("\n*************");




    }
}
```

```
C:\Users\win10\Documents\Java lab programs>java actormain
ENTER NO OF ACTORS DETAILS YOU WANT TO ENTER
3
---------------------------------
ENTER ACTOR 1 details:
NAME :Ajay
ID :123
NO OF MOVIES :9
YEARS OF EXPERIENCE :8
---------------------------------
ENTER ACTOR 2 details:
NAME :Vijay
ID :456
NO OF MOVIES :19
YEARS OF EXPERIENCE :10
---------------------------------
ENTER ACTOR 3 details:
NAME :Sujay
ID :789
NO OF MOVIES :23
YEARS OF EXPERIENCE :5

**********************
 S.NO  |   NAME   |   ID    |   AVERAGE  |   NO.MOVIES  |  YEARS
_____________________
     1)   Ajay        123       1.125          9.0          8.0
_____________________
     2)   Vijay        456       1.9          19.0          10.0
_____________________
     3)   Sujay        789       4.6          23.0          5.0
_____________________

*************

HIGHEST AVERAGE AMONG ALL ACTOR IS:
|3TH MEMBER IN TABLE
|AND AVERAGE IS :4.6
|ACTOR NAME :Sujay

*************
```

**4. Develop a Java program to accept the values of a double array through command line.**
**Display the sorted array.**

```
class CmdD{
   public static void main(String ss[]){
      double[] ssa = new double[ss.length];
      for(int i = 0;i<ss.length;i++){
```

```
            ssa[i] = Double.parseDouble(ss[i]);
        }
        for(int i=0;i<ss.length;i++){
            for(int j=i;j<ssa.length;j++){
                if(ssa[i]>ssa[j]){
                    double temp = ssa[i];
                    ssa[i] = ssa[j];
                    ssa[j] = temp;
                }

            }
        }

        for(int i=0;i<ss.length;i++){
          System.out.println(ssa[i] + " ");

        }


    }
}
```

```
C:\Users\win10\Documents\Java lab programs>javac CmdD.java

C:\Users\win10\Documents\Java lab programs>java CmdD 12.1 9 44 98.39 28
9.0
12.1
28.0
44.0
98.39
```

**5. Design a Java program to accept a double array- Full. create two more arrays pos,**
**neg. Check every element of Full array and push the positive numbers to pos array and negative numbers to neg. Count the number of positives, negatives and zeros and display.**

```
import java.util.Scanner;
class countinarray
```

```
{
   public static void main(String xx[])
   {
      Scanner s=new Scanner(System.in);
      System.out.println("ENTER THE NUMBER OF ELEMENTS");
      int n=s.nextInt();
      int i;
      int p=0;
      int ne=0;
      int z=0;
      double full[]=new double[n];
      double pos[]=new double[n];
      double neg[]=new double[n];
      System.out.println("ENTER THE ELEMENTS OF THE ARRAY");
      for(i=0;i<n;i++)
      {
         full[i]=s.nextDouble();
      }
      for(i=0;i<n;i++)
      {
         if(full[i]>0)
         {
            pos[p]=full[i];
            p++;
         }
         else if(full[i]==0)
         z++;
         else
         {
           neg[ne]=full[i];
           ne++;
         }
         }
         System.out.println("THE ARRAY WITH POSITIVE ELEMENTS IS=");
         for(i=0;i<p;i++)
         {
            System.out.print(pos[i]+" ");
```

```
        }
        System.out.println();
        System.out.println("THE ARRAY WITH NEGATIVE ELEMENTS IS=");
        for(i=0;i<ne;i++)
        {
           System.out.print(neg[i]+" ");
        }
        System.out.println();
        System.out.println("THE NUMBER OF POSITIVE ELEMENTS
IS="+p);
        System.out.println("THE NUMBER OF ZERO ELEMENTS IS="+z);
        System.out.println("THE NUMBER OF NEGATIVE ELEMENTS
IS="+ne);
}
}
```

```
C:\Users\win10\Documents\Java lab programs>javac countinarray.java

C:\Users\win10\Documents\Java lab programs>java countinarray
ENTER THE NUMBER OF ELEMENTS
6
ENTER THE ELEMENTS OF THE ARRAY
0 8 -5 2 -4 3
THE ARRAY WITH POSITIVE ELEMENTS IS=
8.0 2.0 3.0
THE ARRAY WITH NEGATIVE ELEMENTS IS=
-5.0 -4.0
THE NUMBER OF POSITIVE ELEMENTS IS=3
THE NUMBER OF ZERO ELEMENTS IS=1
THE NUMBER OF NEGATIVE ELEMENTS IS=2
```

**6. Design a Java program to accept a string. Count and display the number of vowels, consonants and spaces in the string**

```
import java.util.Scanner;

public class count {
   public static void main(String[] args){
      Scanner sc = new Scanner(System.in);
        System.out.println("Enter the String");
      String str = sc.next();
```

```
      str  = str.toLowerCase();
      int vow = 0, con = 0, sp = 0;
      for(int i = 0;i<str.length();i++){
        char ch = str.charAt(i);
          if(ch == 'a' || ch == 'e' || ch == 'i'
              || ch == 'o' || ch == 'u') {
              ++vow;
          }
          else if((ch >= 'a'&& ch <= 'z')) {
              ++con;
          }

          else if (ch ==' ')
          {
              ++sp;
          }
      }

System.out.println("vowels:"+vow+"\tconsonants:"+con+"\tspaces:"+sp)
;
   }
}
```

```
C:\Users\win10\Documents\Java lab programs>java count
Enter the String
Prakruthi
vowels:3        consonants:6    spaces:0
```