

OOJ LAB WEEK 6 PRACTICE PROGRAMS

Program and Output

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Program 1-

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

```
import java.util.Scanner;

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

        int i, j;

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

        int m = s.nextInt();

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

        int n = s.nextInt();

        int array[][] = new int[m][n];

        System.out.println("Enter matrix:");

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

```

    }
}

System.out.println("The above matrix before Transpose is ");

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

System.out.println("The above matrix after Transpose is ");

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

```

Output-

```
23 {
input
Enter number of rows:
2
Enter number of columns:
3
Enter matrix:
1 2 3
4 5 6
The above matrix before Transpose is
1 2 3
4 5 6
The above matrix after Transpose is
1 4
2 5
3 6

...Program finished with exit code 0
Press ENTER to exit console.

Activate Windows
Go to Settings to activate Windows
```

```
23 {
input
Enter number of rows:
3
Enter number of columns:
4
Enter matrix:
12 13 14 15
21 33 42 56
51 26 41 66
The above matrix before Transpose is
12 13 14 15
21 33 42 56
51 26 41 66
The above matrix after Transpose is
12 21 51
13 33 26
14 42 41
15 56 66

...Program finished with exit code 0
Press ENTER to exit console.

Activate Windows
Go to Settings to activate Windows
```

Program 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;

class CircleDemo{

    double radius;

    double area;

    double perimeter;

    void accept()
    {
        Scanner xx=new Scanner (System.in);

        System.out.println("Enter radius");

        radius=xx.nextDouble();
    }

    double ar()
    {
        area=3.14*radius*radius;

        return area;
    }

    double pm()
    {
        perimeter=2*3.14*radius;

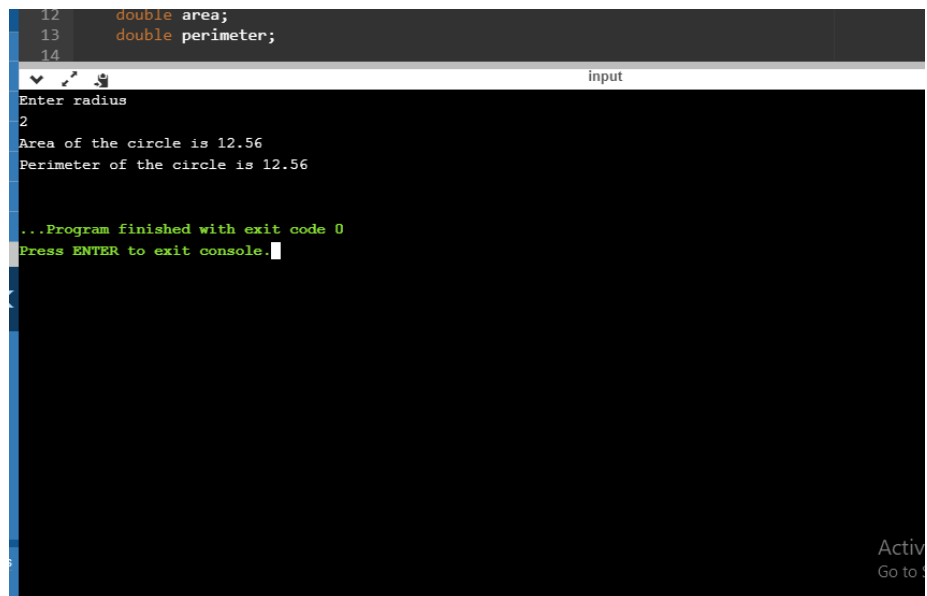
        return perimeter;
    }

    void display()
    {
        System.out.println("Area of the circle is "+area);

        System.out.println("Perimeter of the circle is "+perimeter);
    }
}
```

```
}  
  
class Main{  
    public static void main (String ss[]){  
        CircleDemo c1=new CircleDemo();  
        c1.accept();  
        c1.ar();  
        c1.pm();  
        c1.display();  
    }  
}
```

Output-



The screenshot shows a Java IDE with a code editor and a console window. The code editor displays the following code:

```
12 double area;  
13 double perimeter;  
14
```

The console window, titled "input", shows the following output:

```
Enter radius  
2  
Area of the circle is 12.56  
Perimeter of the circle is 12.56  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

The console window also shows "Activ" and "Go to" at the bottom right.

```
13 double perimeter;
14
Enter radius
14
Area of the circle is 615.44
Perimeter of the circle is 87.92

...Program finished with exit code 0
Press ENTER to exit console.
```

Program 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{

    int id;

    String name;

    int no_of_movies;

    int no_of_years_exp;

    double avg_performance;

    static String highest_name;

    void accept()

    {

        Scanner xx=new Scanner(System.in);

        System.out.println("Enter actor id-");
```

```

        id=xx.nextInt();
        System.out.println("Enter actor name-");
        name=xx.next();
        System.out.println("Enter no_of_movies");
        no_of_movies=xx.nextInt();
        System.out.println("Enter number of years of experience");
        no_of_years_exp=xx.nextInt();
    }
    double avg()
    {
        avg_performance=no_of_movies/no_of_years_exp;
        return avg_performance;
    }

}

class Main{
    public static void main(String args[]){
        Scanner xx=new Scanner(System.in);
        double highest=0;

        System.out.println("Enter number of actors-");
        int n=xx.nextInt();
        Actor a[]=new Actor[n];
        for(int i=0;i<n;i++)
        {

```

```

a[i]=new Actor();
a[i].accept();
a[i].avg();
    if(a[i].avg(>highest)
    {
        highest=a[i].avg();
        Actor.highest_name=a[i].name;
    }
}

System.out.println("Actor with highest experience is "+Actor.highest_name);
}
}

```

Output-

```

Enter number of actors-
3
Enter actor id-
1
Enter actor name-
mal
Enter no_of_movies
4
Enter number of years of experience
2
Enter actor id-
2
Enter actor name-
ren
Enter no_of_movies
6
Enter number of years of experience
2
Enter actor id-
3
Enter actor name-
fin
Enter no_of_movies
8
Enter number of years of experience
2
Actor with highest experience is fin
...Program finished with exit code 0
Press ENTER to exit console.

```

Activate Windows
Go to Settings to activate W

Program 4-

Develop a Java program to accept the values of a double array through command line.

Display the sorted array.

```
class Main{

    public static void main(String ss[]){

        double[] a = new double[ss.length];

        for(int i = 0;i<ss.length;i++){

            a[i] = Double.parseDouble(ss[i]);

        }

        System.out.println("Original array:");

        for( int i=0;i<a.length;i++)

        {

            System.out.println(a[i]+" ");

        }

        System.out.println();

        double temp=0.0;

        for(int i=0;i<a.length;i++){

            for(int j=0;j<a.length;j++){

                if(a[j]>a[j+1]){

                    temp = a[j];

                    a[j] = a[j+1];

                    a[j+1] = temp;

                }

            }

        }

    }

    System.out.println("sorted array:");
```

```

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

```

Program 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 ArrayMain {

    public static void main(String ss[]) {

        Scanner s=new Scanner(System.in);

        System.out.println("Enter number of elements: ");

        int n=s.nextInt();

        int i;

        int p=0, ne=0, z=0;

        double full[]=new double[n];

        double pos[]=new double[n];

        double neg[]=new double[n];

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

        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("Positive elements array:");  
for(i=0;i<p;i++)  
{  
    System.out.print(pos[i]+" ");  
}  
  
System.out.println();  
  
System.out.println("Negative elements array:");  
for(i=0;i<ne;i++)  
{  
    System.out.print(neg[i]+" ");
```

```

}

System.out.println();

System.out.println("No. of positive elements: "+p);

System.out.println("No. of zero elements: "+z);

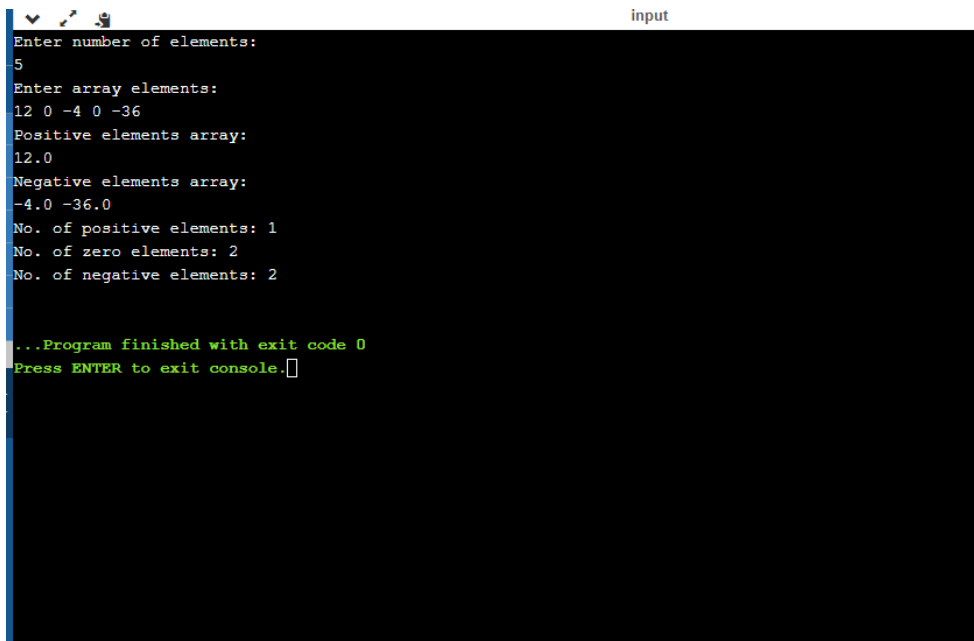
System.out.println("No. of negative elements: "+ne);

}

}

```

Output-



```

input
Enter number of elements:
5
Enter array elements:
12 0 -4 0 -36
Positive elements array:
12.0
Negative elements array:
-4.0 -36.0
No. of positive elements: 1
No. of zero elements: 2
No. of negative elements: 2

...Program finished with exit code 0
Press ENTER to exit console.

```

Program 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;

class CountMain {

    public static void main(String args[])

```

```

{
int i,vowels=0,consonants=0,spaces=0;

Scanner sc = new Scanner(System.in);

System.out.println("Enter sentence");

String s=sc.nextLine();

char str[] = s.toCharArray();

int n= str.length;

    for(i=0;i<n;i++)

    {

        if(str[i]=='a' || str[i]=='e' || str[i]=='i' || str[i]=='o' || str[i]=='u' || str[i]=='A' || str[i]=='E' ||
str[i]=='I' || str[i]=='O' || str[i]=='U')

        {

            vowels++;

        }

        else if((str[i]>='a'&& str[i]<='z') || (str[i]>='A'&& str[i]<='Z'))

        {

            consonants++;

        }

        else if (str[i]==' ')

        {

            spaces++; }

    }

System.out.println("Vowels = "+vowels);

System.out.println("Consonants = "+consonants);

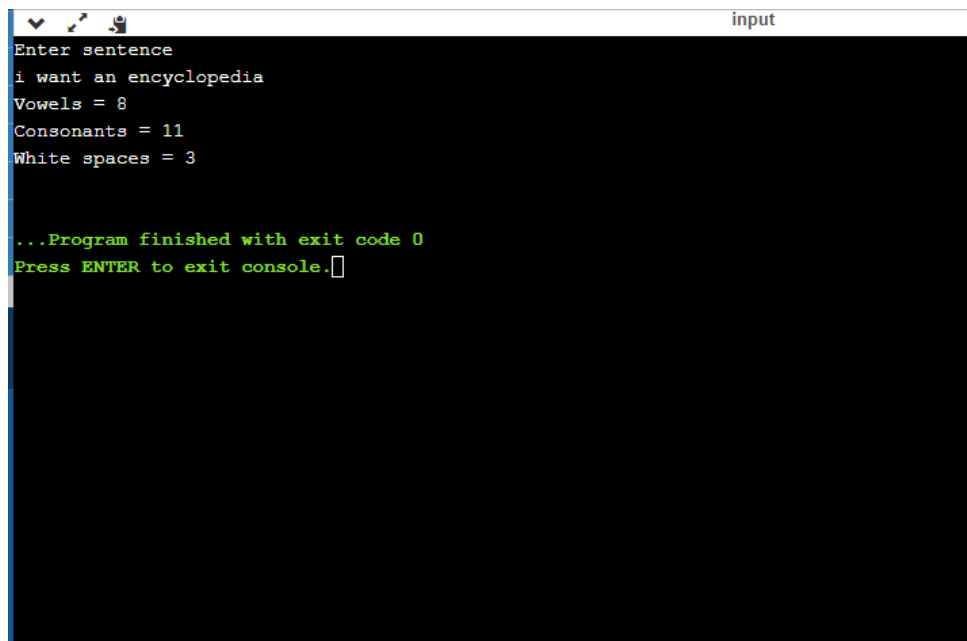
System.out.println("White spaces = "+spaces);

}

}

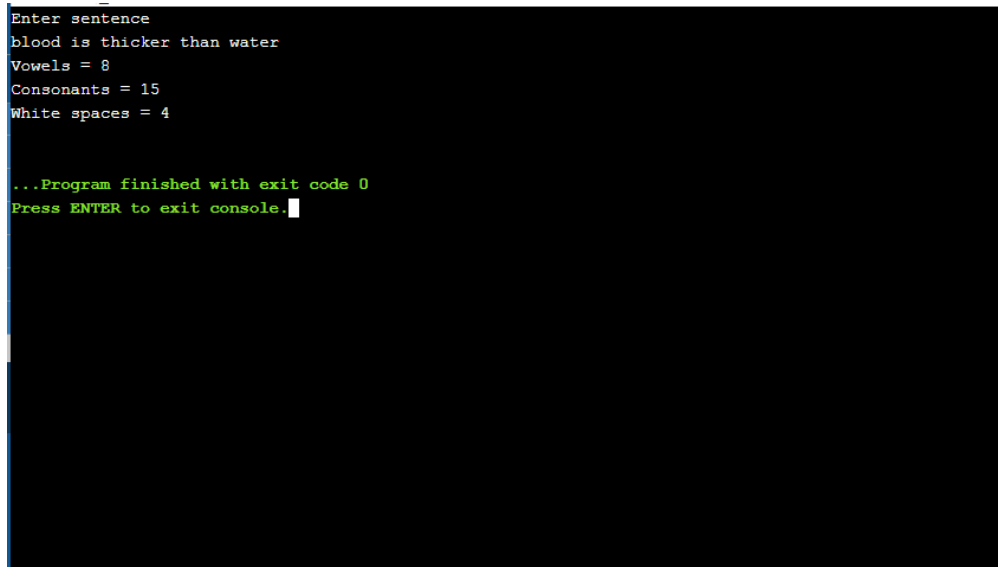
```

Output-



```
Input
Enter sentence
i want an encyclopedia
Vowels = 8
Consonants = 11
White spaces = 3

...Program finished with exit code 0
Press ENTER to exit console.
```



```
Enter sentence
blood is thicker than water
Vowels = 8
Consonants = 15
White spaces = 4

...Program finished with exit code 0
Press ENTER to exit console.
```

