# Practice Programs for OOJ Lab – Week 2

1. Write a C/Java program to accept a number n from the user and print n rows of output as given below if n=4.

```
1
2   3
4   5   6
7   8   9   10
```

```
package intro;

import java.util.Scanner;

public class nest {


	public static void main(String[] args) {


		Scanner sc=new Scanner(System.in);

		int n=sc.nextInt();

		int u=1;

		for(int i=1;i<=n;i++){

		for(int j=1;j<=i;j++){

		System.out.print(u +"   ");

		u++;

		}

		System.out.println();

		}




			}

}
```

```
D:\JAVA>javac nest.java

D:\JAVA>java nest,java
Error: Could not find or load main class nest,java
Caused by: java.lang.ClassNotFoundException: nest,java

D:\JAVA>java nest.java
4
1
2   3
4   5   6
7   8   9   10

D:\JAVA>
```

2.Wriite a C/Java program to accept the CIE marks (Out of 50) and SEE marks (Out of 100) of a student and print his/her grade. Use if… elseif ladder

```
package intro;

import java.util.Scanner;

public class marks{


        public static void main(String[] args) {


                int marks[][]=new int[3][2];


                Scanner sc=new Scanner(System.in);

                System.out.println("Enter total no. of students");

                int n=sc.nextInt();

                int a=0;

                while( a<n){

                        float cie=0;
```

```
        float see=0;
for(int i=0;i<3;i++){
System.out.println("Enter marks of Subject "+i);
for(int j=0;j<2;j++){
if(j==0){
System.out.println("Enter CIE marks out of 50");
}else System.out.println("Enter SEE marks out of 100");
marks[i][j]=sc.nextInt();
}
}
for(int i=0;i<3;i++){
for(int j=0;j<1;j++){

cie=cie+marks[i][j];
}
}
float avg_cie=cie/3;
for(int i=0;i<3;i++){
for(int j=1;j<2;j++){

marks[i][j]=marks[i][j]/2;
see+=marks[i][j];
}
}
float avg_see=see/3;
float add=avg_cie + avg_see;
if(add>=90)System.out.println("S grade");
else if(add>=80 && add<90)System.out.println("A grade");
else if(add>=70 && add<=80)System.out.println("B grade");
```

```
else if(add>=50 && add<70)System.out.println("C grade");
else if(add>=40 && add<50)System.out.println("D grade");
else if(add<40)System.out.println("F grade");
a++;
}
}
}
```

```
D:\JAVA>javac marks.java

D:\JAVA>java marks.java
Enter total no. of students
2
Enter marks of Subject 0
Enter CIE marks out of 50
30
Enter SEE marks out of 100
60
Enter marks of Subject 1
Enter CIE marks out of 50
40
Enter SEE marks out of 100
70
Enter marks of Subject 2
Enter CIE marks out of 50
20
Enter SEE marks out of 100
60
C grade
Enter marks of Subject 0
Enter CIE marks out of 50
40
Enter SEE marks out of 100
80
Enter marks of Subject 1
Enter CIE marks out of 50
50
Enter SEE marks out of 100
80
Enter marks of Subject 2
Enter CIE marks out of 50
50
Enter SEE marks out of 100
90
A grade

D:\JAVA>
```

## 3.Write a C/Java program to print the prime numbers between given two integers (inclusive). Accept these two integers from the user.

```
import java.util.Scanner;
public class prime {
public static void main(String[] args){
```

```
Scanner sc=new Scanner(System.in);
System.out.println("Enter the first number");
int first=sc.nextInt();
System.out.println("Enter the second number");
int end=sc.nextInt();
int temp=0;
System.out.println();
for(int i=first;i<=end;i++){
        if(i ==0 || i==1) continue;
for(int j=2;j<i-1;j++){
if(i%j == 0){
temp+=1;
}}
if(temp ==0)

        System.out.println(i);

else temp=0;
}
}
}
```

```
D:\JAVA>javac prime.java

D:\JAVA>java prime
Enter the first number
1
Enter the second number
100

2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
83
89
97

D:\JAVA>
```

4.Write a C/Java program which prints the area and volume of any one of the given shapes given below. Accept the choice of the shape, appropriate inputs from the user, calculate and display the area and the volume of the same. Repeat this with different shapes till the user wishes to stop.

Cylinder: Area : $A=2\pi rh+2\pi r^2$ Volume: $V=\pi r^2h$

Cone: Area: $A=\pi r(r+\sqrt{(h^2+r^2)})$ Volume: $V= \pi r^2h/3$

Sphere: Area: $A= 4\pi r^2$ Volume: $V= (4/3)\ \pi r^3$

# Ans:-

```
import java.util.Scanner;

public class area {
```

```
public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
        int
        a=0;
        double r,h,area,volume;

        while(a==0){
        System.out.println("Select 1 for cylinder , 2 for cone and 3 for sphere");
        int shape=sc.nextInt();
        System.out.println("Enter radius");
        System.out.println("Enter height incase of cylinder and cone OR press
0");
        switch(shape) {

        case 1:r=sc.nextInt();
        h=sc.nextInt();
         area =2*22/7*r*h+2*3.14*r*r;
         volume= 3.14*r*r*h;
        System.out.println(area +" m^2  "+volume+"m^3");
        break;
        case 2:r=sc.nextInt();
        h=sc.nextInt();
   area = 3.14*r*(r+ Math.sqrt(h*h+r*r)) ;
    volume =3.14*r*r*h/3;
        System.out.println(area +" m^2  "+volume+" m^3");
        break;
        case 3:r=sc.nextInt();
```

```
        h=sc.nextInt();
                area=4*3.14*r*r;
        volume=1.33*3.14*r*r*r;
        System.out.println(area +" m^2  "+volume+" m^3");
        break;
        default:System.out.println("Invalid input");
        }
        System.out.println("To Stop calculating press any key else press 0");
         a=sc.nextInt();
        }
        }
}
```

```
D:\JAVA>javac area.java

D:\JAVA>java area
Select 1 for cylinder , 2 for cone and 3 for sphere
3
Enter radius
Enter height incase of cylinder and cone OR press 0
4
0
200.96 m^2  267.27680000000004 m^3
To Stop calculating press any key else press 0
0
Select 1 for cylinder , 2 for cone and 3 for sphere
1
Enter radius
Enter height incase of cylinder and cone OR press 0
3
4
128.51999999999998 m^2  113.03999999999999m^3
To Stop calculating press any key else press 0
6

D:\JAVA>
```