Practice programs: OOJ Lab Week 2 Java programs

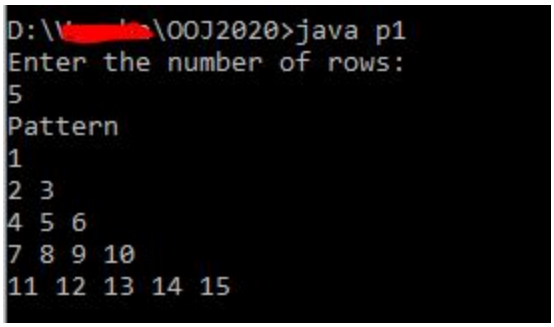
3.Write a Java program to accept a number n from the user and print n rows of output as given below if n=4.

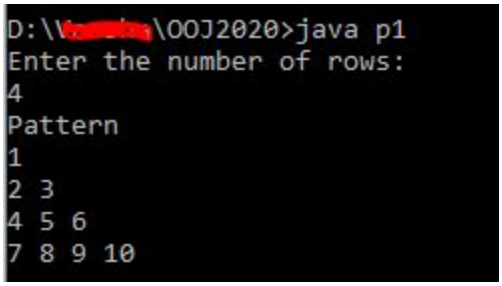
1
2 3
4 5 6
7 8 9 10

CODE:

```
import java.util.Scanner;
class p1 {
	public static void main(String args[])
	{
		int k=1;
		Scanner s=new Scanner(System.in);
		System.out.println("Enter the number of rows:");
		int n=s.nextInt();
		System.out.println("Pattern");
		for(int i=1;i<=n;i++)
			{
				for(int j=1;j<=i;j++)
					{
						System.out.print(k+" ");
						k++;
					}
					System.out.println();
			}
	}
}
```

OUTPUT:





4.Wriite a 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

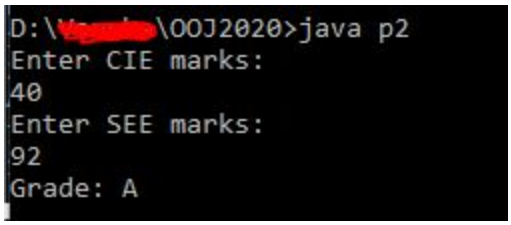
CODE:

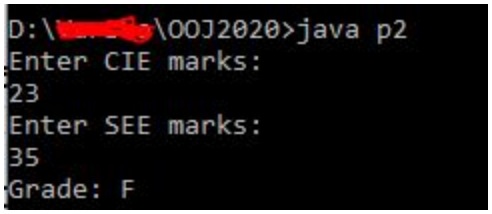
```
import java.util.Scanner;
class p2 {
        public static void main(String args[])
        {
                double tot;
                Scanner s=new Scanner(System.in);
                System.out.println("Enter CIE marks:");
                int CIE=s.nextInt();
                System.out.println("Enter SEE marks:");
                int SEE=s.nextInt();
                tot = (SEE/2.0)+(double)(CIE);
  if(CIE>=20 && SEE>=40)
  {
    if(tot>89 && tot<=100)
    System.out.println("Grade: S");
    else if(tot>79 && tot<=89)
    System.out.println("Grade: A");
    else if(tot>69 && tot<=79)
    System.out.println("Grade: B");
    else if(tot>59 && tot<=69)
    System.out.println("Grade: C");
    else if(tot>49 && tot<=59)
    System.out.println("Grade: D");
    else
    System.out.println("Grade: E");

  }
  else if(CIE>=20 && SEE<40)
  System.out.println("Grade: F");
```

```
    else
    System.out.println("Not eligible, grade not applicable");
}
}
```

OUTPUT:





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

CODE:

```
import java.util.Scanner;
class p3 {
        public static void main(String args[])
        {
                Scanner s=new Scanner(System.in);
                System.out.println("Enter two positive numbers:");
                int low=s.nextInt();
                int high=s.nextInt();
                System.out.print("Prime numbers between "+low+" and "+high+"
(inclusive) are: ");
                while (low <= high) {
```

```
        boolean flag = false;

        for(int i = 2; i <= low/2; ++i) {

           if(low % i == 0) {
              flag = true;
              break;
           }
        }

        if (!flag && low != 0 && low != 1)
           System.out.print(low + " ");

        ++low;


}
}
}
```

OUTPUT:

```
D:\[redacted]\OOJ2020>java p3
Enter two positive numbers:
5 15
Prime numbers between 5 and 15 (inclusive) are: 5 7 11 13
```

```
D:\[redacted]\OOJ2020>java p3
Enter two positive numbers:
1 13
Prime numbers between 1 and 13 (inclusive) are: 2 3 5 7 11 13
```

6.Write a 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.

CODE:

```
import java.util.Scanner;
import static java.lang.Math.sqrt;
class p4 {
        public static void main(String args[])
        {
                int c;
```

```
 double a,v,r,h;
Scanner s=new Scanner(System.in);
 while(true)
 {
 System.out.println("Enter the choice of shape:");
 System.out.println("1.Cylinder\n2.Cone\n3.Sphere\n0.Exit");
 c=s.nextInt();
 switch(c)
 {
    case 1:System.out.println("Enter radius:");
          r=s.nextDouble();
          System.out.println("Enter height:");
          h=s.nextDouble();
          a=(2*3.14*r*h)+(2*3.14*r*r);
          v=(3.14*r*r*h);
          System.out.println("Area: "+a+"\nVolume: "+v);
          break;
    case 2:System.out.println("Enter radius:");
          r=s.nextDouble();
          System.out.println("Enter height:");
          h=s.nextDouble();
          a=(3.14*r)*(r+sqrt((h*h)+(r*r)));
          v=(3.14*r*r*h)/3.0;
          System.out.println("Area: "+a+"\nVolume: "+v);
          break;
    case 3:System.out.println("Enter radius:");
          r=s.nextDouble();
          a=4*3.14*r*r;
          v=(4*3.14*r*r*r)/3.0;
          System.out.println("Area: "+a+"\nVolume: "+v);
          break;
    case 0:System.out.println("Exit");
          System.exit(0);
    default:System.out.println("Invalid choice");
       }
       }
       }
}
```

OUTPUT:

```
D:\[redacted]\OOJ2020>java p4
Enter the choice of shape:
1.Cylinder
2.Cone
3.Sphere
0.Exit
1
Enter radius:
2
Enter height:
3
Area: 62.8
Volume: 37.68
```

```
Enter the choice of shape:
1.Cylinder
2.Cone
3.Sphere
0.Exit
2
Enter radius:
3
Enter height:
4
Area: 75.36
Volume: 37.68
```

```
Enter the choice of shape:
1.Cylinder
2.Cone
3.Sphere
0.Exit
3
Enter radius:
5
Area: 314.0
Volume: 523.3333333333334
Enter the choice of shape:
1.Cylinder
2.Cone
3.Sphere
0.Exit
0
Exit
```