Week 4

```
import java.util.Scanner;
abstract class Shape
{
Shape(){}
int height,length;
abstract void printArea();
}
class Rectangle extends Shape
{
Scanner S=new Scanner(System.in);
void printArea()
{
System.out.println("Enter height and width of rectangle");
height=S.nextInt();
length=S.nextInt();
System.out.println("Area of Rectangle is "+length*height);
}
Rectangle(){}
}


class Triangle extends Shape
{
Scanner S=new Scanner(System.in);
void printArea()
{
System.out.println("Enter height and base of triangle");
height=S.nextInt();
length=S.nextInt();
System.out.println("Area of Trianle is "+0.5*length*height);
}
Triangle(){}
}

class Circle extends Shape
{
Scanner S=new Scanner(System.in);
void printArea()
{
System.out.println("Enter radius of Circle");
height=S.nextInt();
System.out.println("Area of Circle is "+3.14*height*height);
}
```

```
Circle(){}
}


class main
{
public static void main(String xx[])
{
Rectangle r=new Rectangle();
r.printArea();
Triangle t=new Triangle();
t.printArea();
Circle c=new Circle();
c.printArea();
}
}
```

Lab-4

Develop a Java program to create an abstract class named Shape that contains two integers & an empty method named printArea(). Provide three classes named Rectangle, Triangle & Circle such that each one of the classes extends the class Shape. Each one of the contains printArea() that prints area of the shape.

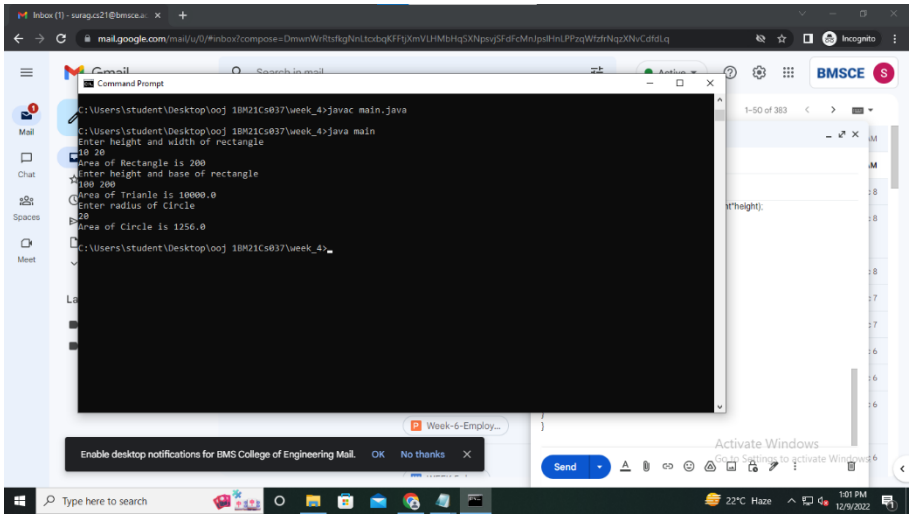
```
import java.util.Scanner;
abstract class Shape
{
  Shape() { }
  int height, length;
  abstract void printArea();
}
class Rectangle extends Shape
{
  Scanner S = new Scanner(System.in);
  void printArea()
  {
    System.out.println("Enter height & width of rectangle");
    height = S.nextInt();
    length = S.nextInt();
    System.out.println("Area of Rectangle is" + length * height);
  }
  Rectangle() { }
}
```

```
Class Triangle extends Shape
{   Scanner S=new Scanner(System.in);
    void printArea()
        {
            System.out.println("Enter height & base of triangle");
            height = S.nextInt();
            length = S.nextInt();
            System.out.println("Area of Triangle is "+0.5*length*height);
        height = S.nextInt();
        length = S.nextInt();
        System.out.println("Area of Triangle is "+0.5*length*height);
    }

    Triangle(){}
}

Class Circle extends Shape
{
    Scanner S=new Scanner(System.in);
    void printArea()
        {
            System.out.println("Enter radius of Circle");
            height = S.nextInt();
            System.out.println("Area of Circle is "+3.14*height*height);
        }
    Circle(){}
}
```

```
class Main
{
Public Static Void main (String xx [])
{  Rectangle r = new Rectangle();
   r. printArea();
   Triangle t = new Triangle();
   t. printArea ();
   Circle C = new Circle();
   C. printArea ();
}
}
```

Output

Enter height & width of rectangle
10 20
Area of Rectangle is 200
Enter height & base of Triangle
10 20
Area of Triangle is 100
Enter radius of Circle
20
1256


Command Prompt
C:\Users\student\Desktop\ooj 1BM21Cs037\week_4>javac main.java
C:\Users\student\Desktop\ooj 1BM21Cs037\week_4>java main
Enter height and width of rectangle
10 20
Area of Rectangle is 200
Enter height and base of rectangle
100 200
Area of Trianle is 10000.0
Enter radius of Circle
20
Area of Circle is 1256.0
C:\Users\student\Desktop\ooj 1BM21Cs037\week_4>
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Type here to search
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1:01 PM
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