Lab4. Develop a Java program to create an abstract class named Shape that contains two integers and an empty method named printArea( ). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea( ) that prints the area of the given shape.

Code:

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


class triangle extends shape
{
	Scanner s=new Scanner(System.in);
```

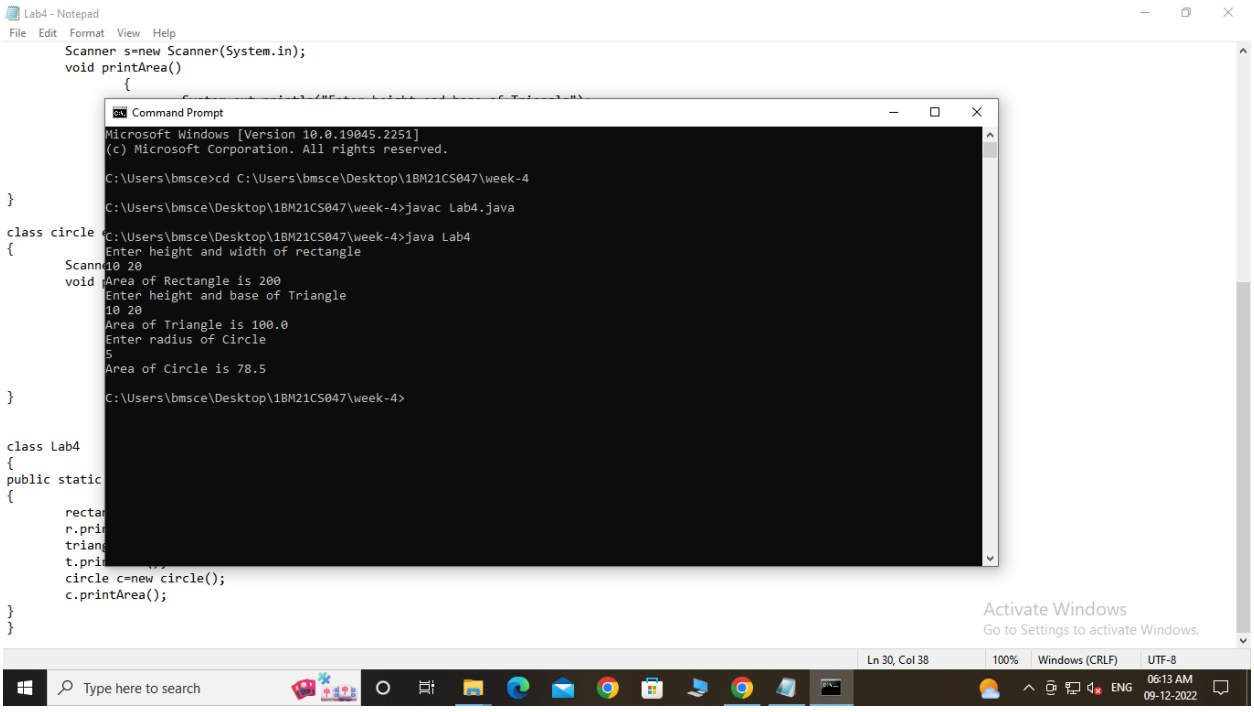
```
	void printArea()
		{
			System.out.println("Enter height and base of Triangle");
			h=s.nextInt();
			b=s.nextInt();
			System.out.println("Area of Triangle is "+0.5*b*h);
			}
		triangle(){}
}

class circle extends shape
{
	Scanner s=new Scanner(System.in);
	void printArea()
		{
			System.out.println("Enter radius of Circle");
			h=s.nextInt();
			System.out.println("Area of Circle is "+3.14*h*h);
			}
		circle(){}
}



class Lab4
{
public static void main(String xx[])
{
	rectangle r=new rectangle();
	r.printArea();
```

```
        triangle t=new triangle();
        t.printArea();
        circle c=new circle();
        c.printArea();
}
}
```



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

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

class triangle extends Shape
{
    Scanner s = new Scanner(System.in);
    void printArea()
    { System.out.println("Enter height & base of triangle");
      h = s.nextInt();
      b = s.nextInt();
      System.out.println("Area of triangle is " + 0.5*b*h);
    }
  } triangle(){}
class circle extends Shape
{   Scanner s = new Scanner(System.in);
    void printArea()
    {  System.out.println("Enter radius of circle");
       h = s.nextInt();
     } System.out.println("Area of circle is " + 3.14*h*h);
  } circle(){}
```

```
class Lab4
{
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 and width of rectangle
10 20
Area of Rectangle is 200
Enter height and base of triangle
Area of triangle is 100.0
Enter radius of Circle
5
Area of Circle is 78.5

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