WEEK 4

Program-4

WAP to create an abstract class called 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 contains only the method printArea() that prints the area of the given shape.

```java
import java.util.scanner;
import java.lang.math;
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 "+b*h);
    }
    Rectangle () {}
}
```

```java
class triangle extends shape
{
    scanner s= new Scanner (System.in);
    void printArea ()
    {
        System.out.println (" Enter height and
                        base of rectangle ");
        h = s.nextInt();
        b= s.nextInt();
        System.out.println ("Area of Triangle =
                        +0.5 * b*h);
    }
    triangle () {};
}

class circle extends shape
{
    scanner s= new scanner (System.in);
    void printArea ()
    {
        System.out.println (" Enter the radius of
                        circle");

        h= s.nextInt();
        system.out.println (" Area of circle ="
                        +3.14 * h^2);
    }
    circle () {};
}
```

```
class main
{
    public static void main (String xx[])
    {
        rectangle r = new rectangle ()
        r. printArea();
        triangle t = new triangle ()
        t. print Area();
        circle c = new circle();
        c. printArea();
    }
}
```

o/P

Enter length & breath of Rectangle

3

Area of Rectangle o 6
Enter height & base of triangle 8

8
8

Area of triangle o 9.0

Enter the radius of circle
4

Area of circle o 50.24.

```
Enter the shape
1.Rectangle
2.Triangle
3.Circle
4.Exit
1
Enter breadth and height
2 4
Area of the rectangle is 8
2
Enter side length and height
2 4
Area of the triangle is 4
3
Enter radius
1
Area of the circle is 3.141592653589793
4
```