Week 6 // LAB Program 4

Develop Java prog to create abstract class Shape that has 2 integers & empty method printArea(). Provide 3 classes Rectangle, Triangle & Circle such that each one of the classes extends Shape. Each containing printArea() that prints area of given Shape

```
import java.util.*;
abstract class Shape
{
    double dimen1;
    double dimen2;
    Shape(double a, double b)
    {
        dimen1=a;
        dimen2=b;
    }
    abstract void printarea();
}
class Rectangle extends Shape
{
    Rectangle(double a, double b)
    {
        super(a,b);
    }
    void printarea()
    {
        System.out.println("\n Area of Rectangle is :"+
                                    dimen1*dimen2);
    }
```

```
}
class triangle extends shape
{
    triangle (double a, double b)
    {
        super(a,b);
    }
    void printarea()
    {
        System.out.println("\n Area of Triangle is :"+0.5*
                                                    dim1*
                                                    dim2);
    }
}
class circle extends shape
{
    circle (double a, double b)
    {
        super(a,b);
    }
    void printarea()
    {
        System.out.println("\n Area of circle is :"+3.14*
                                                    dim1*
                                                    dim2);
    }
}
class abstractShapes
{
    public static void main (String[] args)
    {
```

```
Scanner in = new Scanner(System.in);
int ch;
double d1, d2;
while(true)
{
    System.out.println("\n1. Area of Rectangle \n2. Area of
                        triangle \n3. Area of circle \n
                        0. Exit");
    ch = in.nextInt();
    switch(ch)
    {
        case 1: System.out.println("Enter length &
                d1 = in.nextDouble(); breadth \n");
                d2 = in.nextDouble();
                Rectangle r1 = new Rectangle(d1, d2);
                r1.printArea();
                break;

        case 2: System.out.println("Enter height & base \n");
                d1 = in.nextDouble();
                d2 = in.nextDouble();
                Triangle t1 = new Triangle(d1, d2);
                t1.printArea();
                break;

        case 3: System.out.println("Enter R \n");
                d1 = in.nextDouble();
                Circle c1 = new Circle(d1, d1);
                c1.printArea();
                break;
        case 0: return;
        default: System.out.println("Enter Valid Choice\n");
```

continue;

}

}

}

}

output

1. Area of Rectangle
2. Area of triangle
3. Area of circle

3

Enter radius

10

Area of circle is :: 314.0

1. Area of Rectangle

:

:

0