Week 6//LAB PROGRAM 4

/*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 containonly the method printArea( ) that prints the area of the 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("\nArea of Rectangle is: "+dimen1*dimen2);
        }
}
class triangle extends shape
{
        triangle(double a,double b)
        {
            super(a,b);
        }
        void printarea()
        {
            System.out.println("\nArea of Triangle is: "+0.5*dimen1*dimen2);
        }
}
class circle extends shape
{
        circle(double a,double b)
        {
            super(a,b);
        }
        void printarea()
        {
            System.out.println("\nArea of circle is: "+3.14*dimen1*dimen2);
        }
}
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\n0.Exit");
        ch=in.nextInt();
        switch(ch)
        {
            case 1: System.out.println("Enter Length and breadth");
                d1=in.nextDouble();
                d2=in.nextDouble();
                rectangle r1=new rectangle(d1,d2);
                r1.printarea();
                break;

            case 2: System.out.println("Enter Height and Base");
                d1=in.nextDouble();
                d2=in.nextDouble();
                triangle t1=new triangle(d1,d2);
                t1.printarea();
                break;

            case 3: System.out.println("Enter Radius");
                d1=in.nextDouble();
                circle c1=new circle(d1,d1);
```

```
                    c1.printarea();
                    break;

                case 0: return;

                default:System.out.println("Enter Valid Choice\n");
                    continue;
            }
        }
    }
}
```

```
C:\Users\RAJ\Desktop\c prog\Java\New folder>java abstractshapes

1.Area of Rectangle
2.Area of Triangle
3.Area of circle
0.Exit
1
Enter Length and breadth
5
10

Area of Rectangle is: 50.0

1.Area of Rectangle
2.Area of Triangle
3.Area of circle
0.Exit
2
Enter Height and Base
10
5

Area of Triangle is: 25.0

1.Area of Rectangle
2.Area of Triangle
3.Area of circle
0.Exit
3
Enter Radius
10

Area of circle is: 314.0

1.Area of Rectangle
2.Area of Triangle
3.Area of circle
0.Exit
4
Enter Valid Choice


1.Area of Rectangle
2.Area of Triangle
3.Area of circle
0.Exit
0

C:\Users\RAJ\Desktop\c prog\Java\New folder>
```