Lab Program 4

Q 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 shape class each one of the class contain only the method printarea() that prints the area of the given shape.

```
import java.util.scanner;
abstract class shape
{
    int d1;
    int d2;
    shape (int a, int b)
    {
        d1 = a;
        d2 = b;
    }
    abstract void printarea();
}
class Rectangle extends shape
{
    Rectangle (int a, int b)
    {
        super(a, b)
    }
    vood printarea()
    {
        float area = (float) d1 * d2;
        System.out.println("Area of rectangle :" + area);
    }
```

```
}
class Triangle extends shape
{
   Triangle (int a, int b)
   {
      super (a, b);
   }
   void printarea ()
   {
      float area = (float) d1 * d2 / 2;
      system.out.println ("Area of the triangle :"+area);
   }
}
class Circle extends Shape
{
   Circle (int a, int b)
   {
      super (a,b);
   }
   void printArea()
   {
      float area = (float) 3.14 * d1 * d1;
      System.out.println ("Area of the circle :", +area);
   }
}
class Main
{
   public static void main (string args[])
   {
      int ch, flag = 0;
      Scanner ss : new scanner (system in);
      while (flag == 0)
      {
```

```
System.out.println("Enter the choice whose
    area is to be calculated");
system.out.println(" 1. RECTANGLE \n
    2. TRIANGLE \n  3. CIRCLE ");
  ch = ss.nextInt();
  switch(ch)
  {
  case 1: System.out.println("Enter the
          dimensions of rectangle ");
          int x = ss.nextInt();
          int y = ss.nextInt();
          Rectangle r = new Rectangle(x,y);
          r.printarea();
          break;
  case 2: System.out.println("Enter the dimensions
                of triangle");
          int s = ss.nextInt();
          int w = ss.nextInt();
          Triangle t = new Teriangle(s,w);
          t.printarea();
          break;
  case 3: System.out.println("Enter the radius of
            the circle");
          int f = ss.nextInt();
          circle c = new circle(f,f);
          c.printarea();
          break;
  default;
  flag = 1;
  }
  }
  }
```