

Assignment on Abstraction

Submission deadline : 10:00 am, August 14, 2020 (Friday)

1. Create a class named **Shape** having one data member named **length(double)** and a method named **getArea()** (return type **void**).

2. Three types of shapes are allowed, **Triangle, Rectangle and Circle**.

[You may need to add extra instance variables to these classes]

3. You should be able to print the area of each shape separately from the **main** method by calling the **getArea()** method.

4.

For rectangle, the **length** variable will denote one side of the rectangle.

For triangle, the **length** variable will denote one side of the triangle.

For circle, the **length** variable will denote the diameter of the circle.

[**Hint:** area of rectangle= length*sideB

area of triangle=0.5*length*height

area of circle=3.14*length* length]

5. Create proper constructors for different shapes for initializing **all the instance variables** of that class. No need to take inputs from users.

6. Now, create an array named **shapes** of type **Shape** of size 5 and print the following for each of the shape:

The area of the (i)_____ is (ii)_____ .

The first blank (i) will be filled in by **circle/triangle/rectangle** as per the class name.

The second blank (ii) will be filled in by the **area** of that shape.

[Remember that, two of the objects of the array must be triangles, two must be rectangles and one must be circle.]