

```
1 // Circle, Square, Rectangle classes;
2 //   all based on Shape
3 //
4 // CONSTRUCTION: with (a) radius (for circle), side length
5 //   (for square), length and width (for rectangle)
6 // *****PUBLIC OPERATIONS*****
7 // double area( )      --> Implements Shape abstract area
8
9 public class Circle extends Shape
10 {
11     public Circle( double rad )
12     {
13         super( "circle" );
14         radius = rad;
15     }
16
17     public double area( )
18     {
19         return Math.PI * radius * radius;
20     }
21
22     private double radius;
23 }
24
25
26 public class Rectangle extends Shape
27 {
28     public Rectangle( double len, double wid )
29     {
30         super( "rectangle" );
31         length = len;
32         width = wid;
33     }
34
35     public double area( )
36     {
37         return length * width;
38     }
39
40     private double length;
41     private double width;
42 }
43
44 public class Square extends Rectangle
45 {
46     public Square( double side )
47     {
48         super( side, side );
49     }
50 }
```

Figure 4.6 Complete Circle, Rectangle, and Square classes that are placed in separate source files