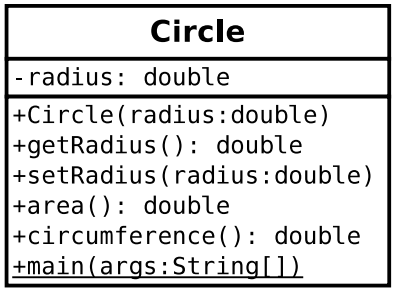
Model 1 The Circle Class

Unified Modeling Language (UML) provides a way of graphically illustrating a class's design, independent of the programming language.



Questions (15 min) Start time:

1. Consider the `Circle` class:

a) How many attributes does it have?

b) How many methods does it have?

2. Based on **??** and Model 1, what is typically `public` and what is typically `private`?

The following questions will have you implement the `Circle` class exactly as shown in the UML diagram above. Do not worry about writing Javadoc comments for this activity.

3. Write the code that declares the `radius` attribute. An outline of *Circle.java* is provided below for context.

```
public class Circle {


    // constructor goes here

    // other methods go here
}
```

4. Write the code for the `Circle` constructor. Notice that, in contrast to **??**, the `Circle` constructor has a parameter. Assign the parameter `radius` to the attribute `this.radius`.

5. Write the code for `getRadius`. (Refer to **??** for an example.)

6. Write the code for `setRadius`. Like the constructor, it should assign the parameter to the corresponding attribute.

7. Write the code for `area`. The area of a circle is πr^2.

8. Write the code for `circumference`. The circumference of a circle is $2\pi r$.

9. Write a `main` method that creates a `Circle` object with a radius of 2.0 and displays its area and circumference (using `println`).