Class and Object in Java

Class and Object in Java

Pemrograman Berorientasi Objek

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What Is a Class?

- In the real world, many individual objects all of the same kind.

- There may be thousands of bicycles in existence. Each bicycle was built from the same set of blueprints and therefore contains the same components.

- In object-oriented terms, bicycle is an instance of the class of objects known as bicycles. A class is the blueprint from which individual objects are created.

Point Class

```java
public class Point {
    public int x = 0;
    public int y = 0;
    // a constructor!
    public Point(int a, int b) {
        x = a; y = b;
    }
}
```

Rectangle class

```
public class Rectangle {
    public int width = 0;
    public int height = 0;
    public Point origin;
    // four constructors
    public Rectangle() {
        origin = new Point(0, 0); }
    public Rectangle(Point p) {
        origin = p; }
    public Rectangle(int w, int h) {
        origin = new Point(0, 0);
        width = w; height = h; }
    public Rectangle(Point p, int w, int h) {
        origin = p; width = w; height = h; }
```

Rectangle class ...

```java
// a method for moving the rectangle
public void move(int x, int y) {
    origin.x = x;
    origin.y = y;
}
// a method for computing the area of the rectangle
public int getArea() {
    return width * height;
}
}
```

```java
public class Rectangle {
    public int width = 0;
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    public Point origin;
    // four constructors
    public Rectangle() {
        origin = new Point(0, 0); }
    public Rectangle(Point p) {
        origin = p; }
    public Rectangle(int w, int h) {
        origin = new Point(0, 0);
        width = w; height = h; }
    public Rectangle(Point p, int w, int h) {
        origin = p; width = w; height = h; }
    // a method for moving the rectangle
    public void move(int x, int y) {
        origin.x = x;
        origin.y = y;
    }

    // a method for computing the area of the rectangle
    public int getArea() {
        return width * height;
    }
}
```

Creating Object

- As you know, a class provides the blueprint for objects; you create an object from a class.

```
Point originOne = new Point(23,94);
Rectangle rectOne = new Rectangle(originOne,100,200);
Rectangle rectTwo = new Rectangle(50,100);
```

Declaration: The code set in **bold** are all variable declarations that associate a variable name with an object type.

Instantiation: The new keyword is a Java operator that creates the object.

Initialization: The new operator is followed by a call to a constructor, which initializes the

Using Object

- Once you've created an object, you probably want to use it for something.
  - use the value of one of its fields
  - change the value of one of its fields
  - call one of its methods to perform an action

```
objectReference.fieldName
rectOne.width
objectReference.methodName(argumentList);
objectReference.methodName();
rectTwo.move(40,72);
```

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