

## 1 TMWLO

- Lecture/Textbook: High-level introduction to a new topic.
- Section: Think deeper about ideas learned in lecture.
- Lab: Implement data structures and algorithms. Ask questions about **projects!**
- Projects: Apply concepts by designing large, complex systems.
- Guerrilla: Exam-like problems in a collaborative, low-risk environment.
- Office Hours: Ask questions about lab, homeworks, projects, or concepts.
- HKN/UPE Drop-in Office Hours: Ask conceptual questions.
- One-on-one tutoring or scheduling a meeting with Kevin: Conceptual questions if lecture, reading, and discussion don't make sense. Diagnosing your learning environment.
- Piazza: General questions. Practice explaining past exam questions.
- Slack: Low-barrier environment for connecting with classmates and Kevin.

## 2 Rules to Live By

2.1 Loosely speaking, the rules that Java obeys for **variable lookup** is as follows:

1. Look in the local scope.
2. Look in the instance and class.
3. Look in the superclass. (More on this later.)

2.2 The **Golden Rule of Equals** says:

"Given variables  $b$  and  $a$ ,  $b = a$  copies all the bits from  $a$  into  $b$ ."

Passing parameters obeys the same rule: Simply **copy the bits** to the new scope.

### 3 Samehorse

```
3.1 public class Horse {
    Horse same;
    String jimmy;
    public Horse(String lee) {
        jimmy = lee;
    }
    public Horse same(Horse horse) {
        if (same != null) {
            Horse same = horse;
            same.same = horse;
            same = horse.same;
        }
        return same.same;
    }
    public static void main(String[] args) {
        Horse horse = new Horse("you've been");
        Horse cult = new Horse("horsed");
        cult.same = cult;
        cult = cult.same(horse);
        System.out.println(cult.jimmy);
        System.out.println(horse.jimmy);
    }
}
```

(a) What would Java display?

(b) Draw the box-and-pointer diagram after the main method has executed.