

Ex: The philosophers dining problem

```
public Philosopher(String philosopher,
    Object left, Object right) {
    this.name = philosopher;
    this.leftStick = left;
    this.rightStick = right;

    this.thread = new Thread() {
        public void run() {
            try {
                synchronized(leftStick) {
                    sleep(1);
                }
                synchronized(rightStick) {
                    sleep(1);
                }
                System.out.println(
                    "Philosopher " + name +
                    ": Chew, chew, chew ..." +
                    "*burp*!");
            } catch (Exception ignore) {}
        }
    };
}
```

- 1) Discuss whether the provided solution to the philosophers dining problem can be fixed, using a lock ordering strategy, i.e. order by hash value or an explicit id.
- 2) Make a solution to the problem, using explicit locks (`java.util.concurrent.locks`).
- 3) (Optional) Describe a scenario in which the lock ordering algorithm in Listing 10.3 does not prevent a deadlock, if there is any.