Announcements

- Try to get some help from me and tutors
- Reading assignment for this slide set: my notes

Object composition, X vs. UseX,
Compound statement,
Statement vs. expression,
Anatomy of class

Object composition (revisited)

- Problem: Design a Circle class to demonstrate how a simple object is used to create a more complex object
- Object Composition: Use Point class as part of Circle class
- Object Inheritance is another way of designing complex objects (will see soon)
- See Point.java and Circle.java
  - See how toString is invoked indirectly in the println call in the main of Circle
  - Note that toString of Circle relies on toString of Point doing its job (principle of abstraction in action)
- Example of object composition: a student object containing an array of courses, each course consisting of an instructor, who has an array of advisees (students), etc.

Class X and class UseX

- We have been using UseX to test the implementation of X where X is a class name, e.g., Student and UseStudent.
- From now on, you may use a main in X instead of adding a main in UseX
  - See Circle.java (no UseCircle.java in this example)
  - Read the comments in Circle.java carefully though!
Compound statements

- Also known as block statements
- See Compound.java (read comments in the file carefully)

Statement vs. expression

- A statement does not have a value. It is like a command, e.g.,
  - int i, j, k;
  - System.out.println(...);
  - if (...) {...} else {...};
- A statement does not evaluate to a value, so the following would not make sense:
  - System.out.println(System.out.println(23));
  - System.out.println(int x);
- An expression evaluates to a value, e.g.,
  - count, 345, (count > 3), true, “apple”, ‘A’, etc. are all expressions
- So, the following would make sense:
  - System.out.println(345);
  - System.out.println(count > 3); // assuming count is an integer

Anatomy of a class

- Read anatomy.txt
- It is a summary I wrote about static vs. non-static members in a class in Java in general