CompSci 6
Programming Design and Analysis
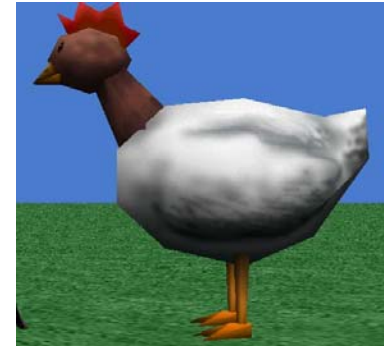

January 21, 2010

Prof. Rodger

Announcements

- Read next time Chap. 3.1-3.8, Chap 4.1-4.3
- Assignment 2 out – due in one week
- Finish Classwork before next class
- Reading Quiz for next time
- Remember- Consulting Hours – see HELP tab on CompSci 6 web page

Object, Classes, Methods

- Classes define
  - the state (data), usually private
  - behavior (methods) for an object, usually public
- There can be many objects created based on a class.
- Method – sequence of instructions that access the data of an object
  - Accessor – access, don't change data
  - Mutator – changes the data

Example - class Chicken

- State
  - weight, height, name
- Behavior (methods)
  - Accessor methods
    - getWeight, getHeight, getName
  - Mutator methods
    - eat – adds weight, adds some height if under 12.0
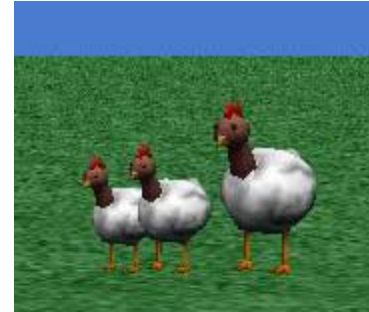   - sick – lose weight
    - changeName

Constructing Objects - new

- Create three chickens
  - "Fred", weight 2.0, height 3.8
  - "Sallie Mae", weight 3.0, height 4.5
  - "Momma", weight 6.0, height 8.3
- Use Chicken constructor

  Chicken one = new Chicken(2.0, 3.8, "Fred");
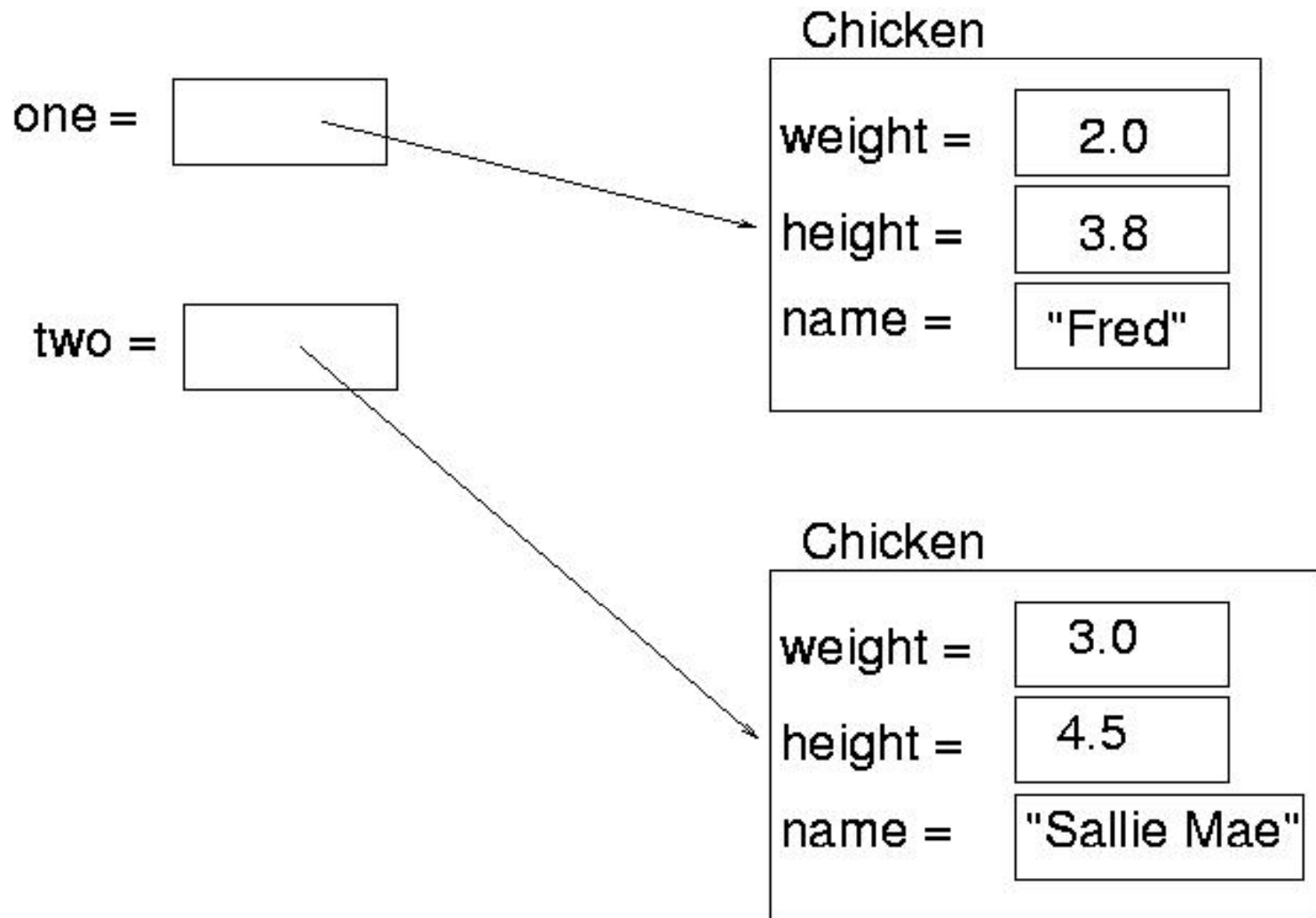
  Chicken two = new Chicken(3.0, 4.5, "Sallie Mae");

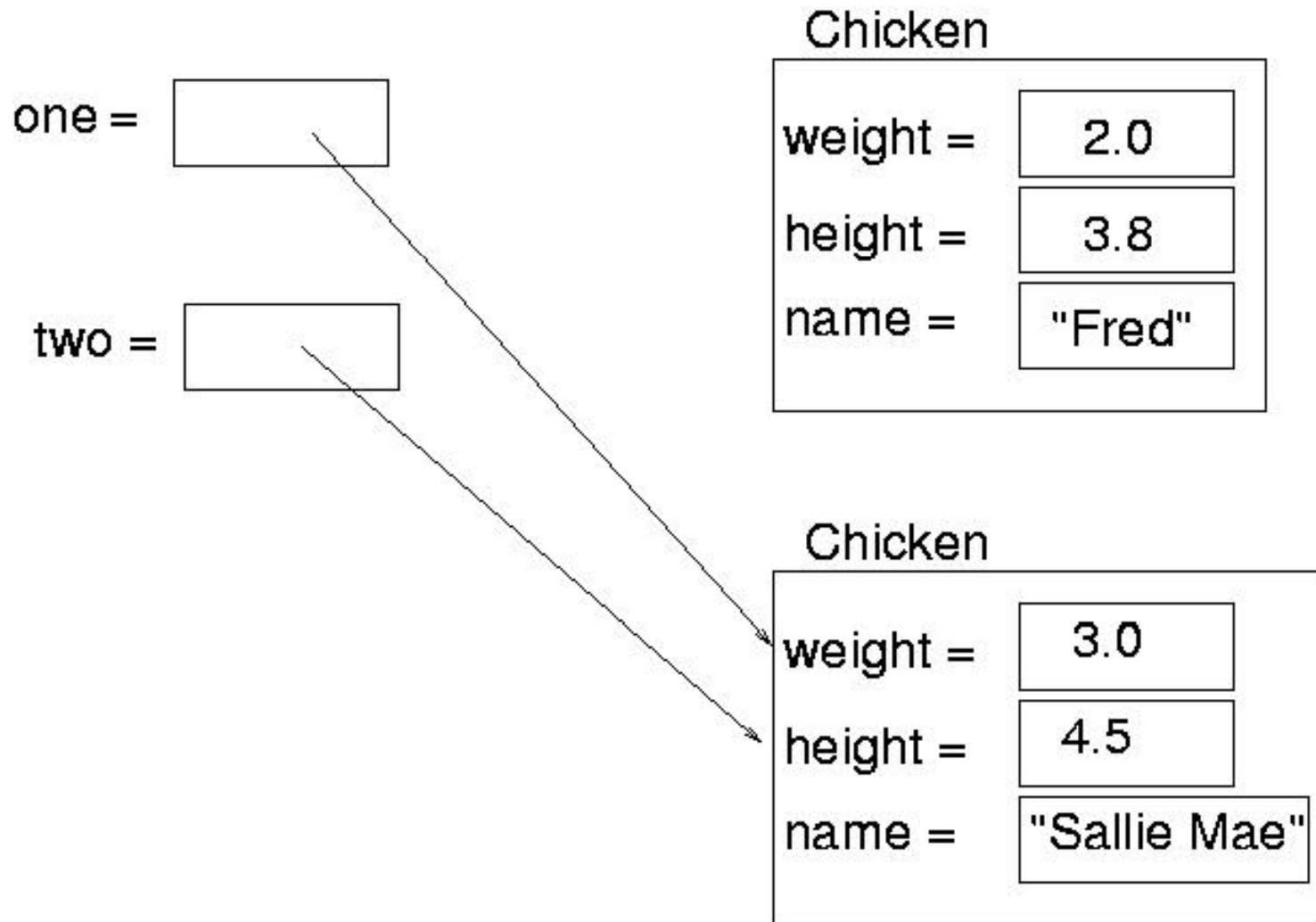 Chicken three = new Chicken(6.0, 8.3, "Momma");

Object References

- Variable of type object – value is memory location

one = ☐ → Chicken
weight = 2.0
height = 3.8
name = "Fred"

two = ☐

Chicken
weight = 3.0
height = 4.5
name = "Sallie Mae"

one = two;

- Now they reference the same object

Chicken

weight =	2.0
height =	3.8
name =	"Fred"

one =

two =

Chicken

weight =	3.0
height =	4.5
name =	"Sallie Mae"

Another Class - String

- Use the API methods for String class
  - To get to API from CompSci 6 web page
    - Click on "resources"

- Print length of Chicken one's name.

- length is a method in String class.

System.out.println(one.getName() + " has " +
  one.getName().length() + " letters.");

APT – Hinged Door

- Work through a solution in class
- Load in APT and run

- Also discuss DivToZero

Classwork Today - APTs

- Sit in groups
- Login to laptops
- Start Eclipse, create a Java Project
- Enter in a Java class and method
- Test the class/method with an APT
- Repeat with other problem
- Submit the files with Ambient