

# CompSci 6

## Programming Design and Analysis



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## 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

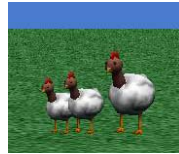
## Example - class Chicken



- 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

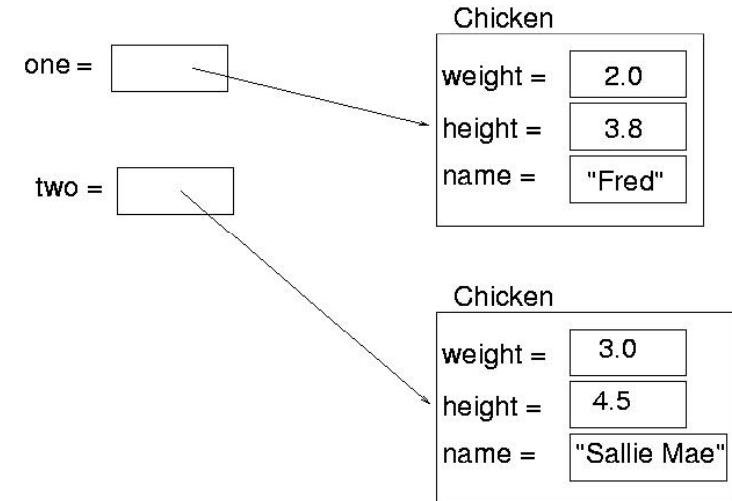
```
Chicken one = new Chicken(2.0, 3.8, "Fred");
```

```
Chicken two = new Chicken(3.0, 4.5, "Sallie Mae");
```

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

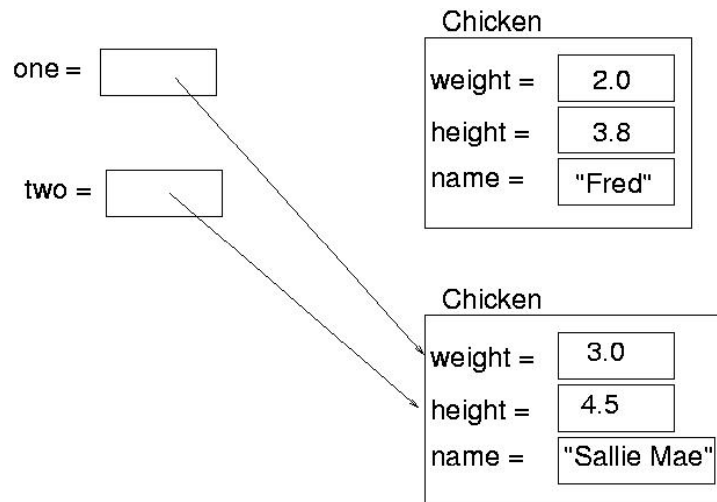
## Object References

- Variable of type object – value is memory location



**one = two;**

- Now they reference the same object



## 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