CompSci 6
Programming Design and Analysis

January 21, 2010

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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 = 

Chicken
weight = 2.0
height = 3.8
name = "Fred"

Chicken
weight = 3.0
height = 4.5
name = "Sallie Mae"
one = two;
- Now they reference the same object

```python
one = Chicken()
two = Chicken()

one.weight = 2.0
one.height = 3.8
one.name = "Fred"

two.weight = 3.0
two.height = 4.5
two.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