Lab 10
Inheritance

CSCE A201

Computer Programming I

Inheritance Review

- What is the Java keyword you use to create a subclass?
- In a subclass constructor, how can you call the constructor of the parent class?
- In a subclass, how can you call a method of the parent class?

Lab 10 Inheritance Exercise

1. Download PetRecord.java
2. Write a new class, Cat, derived from PetRecord
   - Add an additional attribute to store the number of lives remaining: numLives
   - Write a constructor that initializes numLives to 9 and initializes name, age, & weight based on formal parameter values
3. Write a main method to test your Cat constructor & call the inherited writeOutput() method
4. Write a writeOutput method in Cat that uses "super" to print the Cat's name, age, weight & numLives
   - Does this method *overload* or *override* PetRecord.writeOutput()? (include the answer to this question as a comment in your code)
5. Instantiate 2 Cat objects with identical arguments to the constructor and compare them using .equals
   - In your code, add a comment as to what happens
6. Add the equals method on the next slide to your Cat class. Complete the method to return true if the calling cat object and the parameter object have the same name, age, and weight (within 0.1 pounds), and false otherwise

Cat equals method

```
// TO DO: Does this equals method override or overload the Object
equals method?  Refer to the Java docs to see the signature of the
Object equals method:
https://docs.oracle.com/javase/8/docs/api/java/lang/Object.html. Add a
comment in your code with the answer.

public boolean equals(Object otherObj)
{
   if (otherObj == this) return true;
   if (!(otherObj instanceof Cat)) {
       return false;
   }
   Cat otherCat = (Cat) otherObj;

// TO DO: Add comparison code and return true if the cats
// have the same name, age, and weight is within 0.1
// pounds (note that you can do this in one long line
// of code).
}
```