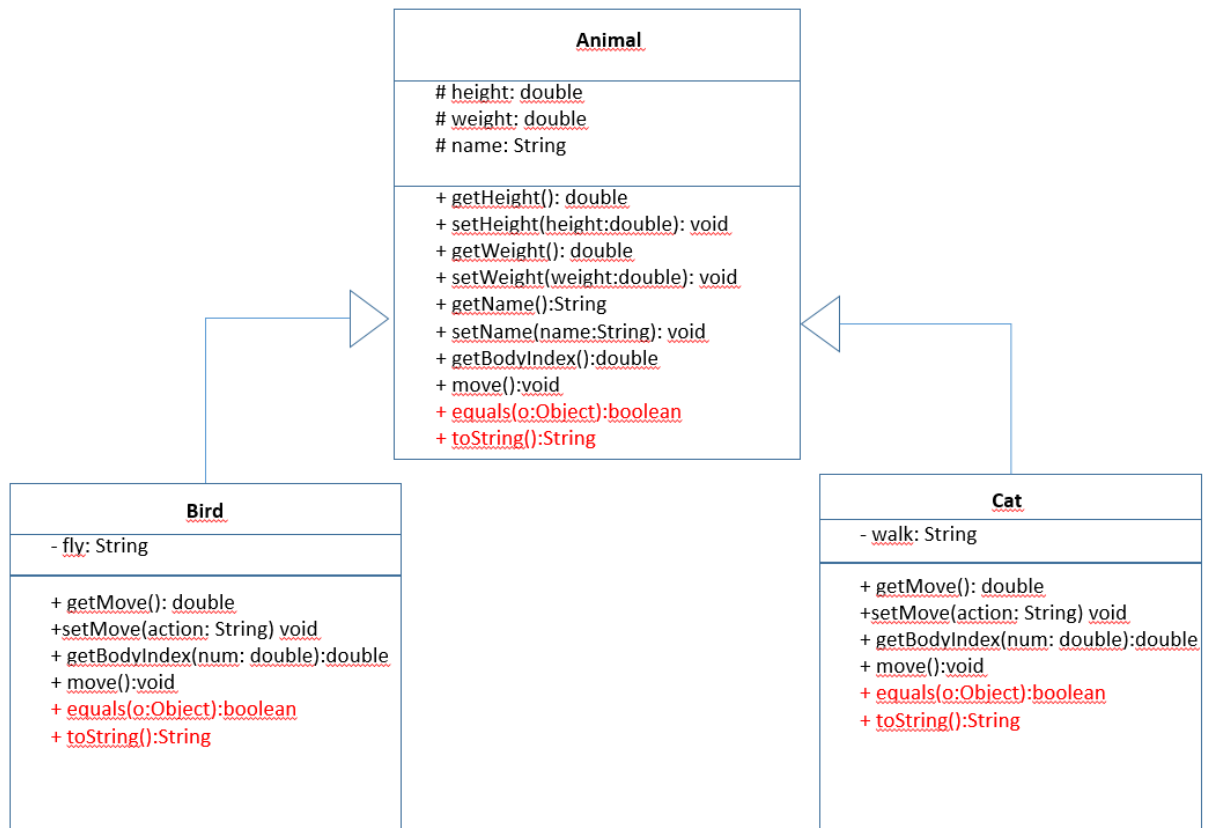**2021 – 2022 Spring, CMPE 114/211 Fundamentals of Programming II**

Lab Assignment 7

Section … - Question 2

In this lab assignment, you are asked to write java code of overridden equals() and toString() methods of given classes in the following class diagram.

Instructions:

- Use the classes you created in the first assignment.
- **equals() method instructions:**
  - Override the equals() method of for each class,
  - for each implementation of the method, it has the following line to print out the name of the class

    ```
    System.out.println(this.getClass().getSimpleName()+ " equals method is invoked");
    ```
  - each method accepts object as parameter
    - ```public boolean equals(Object o)```
  - At first, check that if the object is null then return false
  - Compare the class type of the parameter object and your class type, if they are different then return false. You can get your class type using: ```this.getClass()```
  - Create a new instance of your class and assign the parameter object to this variable. Do the type conversion of parameter object to your class type using casting.

   o Compare:
     ▪ For animal, cat, bird object: height, weight, name
   If they are same, then return true, otherwise false.
   Do not forget, the name attribute is String and requires string comparison.

- **toString() method instructions:**
  - Override the toString() method for each class,
  - The method returns the following values, having tab space between each value:
    - For animal, cat, bird object: height, weight, name
- The runnable class instructions are as follows:
- The name of the class is **testInheritanceQ2.java**
- Create your own class to test the methods above.
- <u>You will not submit this class</u>.
- It creates various instances of classes (animal, bird, cat) with different attributes.
- The class we will use to test your submission uses equals() and toString() methods of your classes.

Submission:
Please create a zip file containing Animal.java, Bird.java, Cat.java