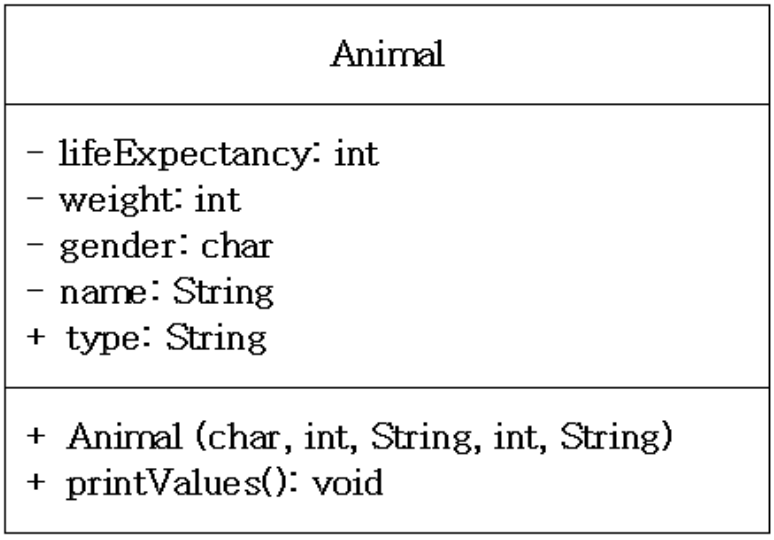
OOPROG21: MIDTERM ACTIVITY #1

1) **Create the Java code for the Animal class that allows the following private data members:**
   - An integer value named lifeExpectancy and weight.
   - A String value named gender and a String value called name.
   - Allow for a public String value called type.
   - Design an Animal() constructor with parameters to accept values for each data member.
   - Design a public void method printValues() with no parameters that displays all data members for the object of the Animal class.

UML Diagram for the Animal Class



2) **Design a program with the main method to test the Animal class. Include the following elements in the program:**
   - Create a local variable named elephant, and initialize it with a new object of the type Animal. For the value of gender, use 'm' for male, 'f' for female, 'n' for a neutered male, or 's' for a spayed female. You can expect a male elephant to live 65 years and weigh around 7 tons (14,000 pounds).
   - Call the printValues() method to display the instance variables of the object.

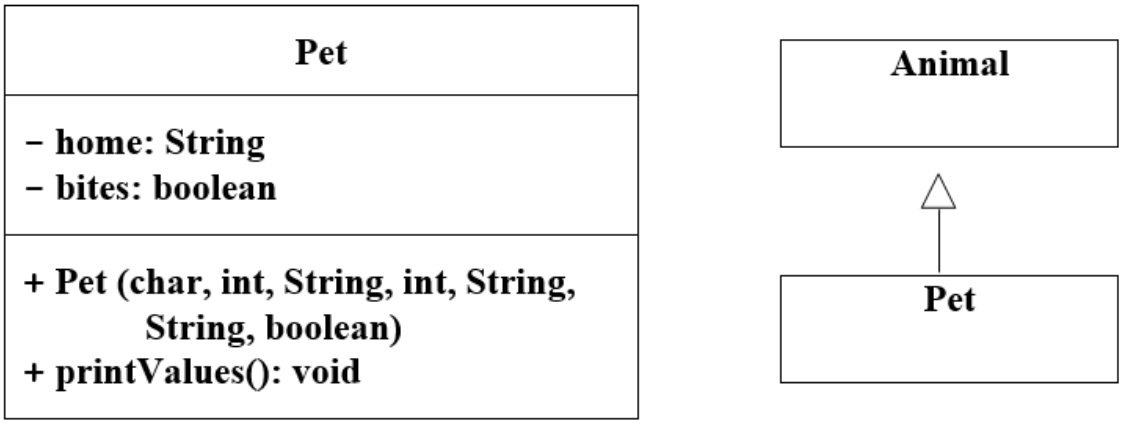
   Following is a copy of the screen results that might appear after running your program, depending on the data entered.

   A male elephant named Jumbo should live to be 65 years and weigh 14000 pounds.

3) Create a class diagram for a subclass named Pet that extends the class Animal and includes the following elements:

- A String value named home and a String value named bites as private instance variables.
- A Pet() constructor with parameters to initialize all data members of the class and to call the Animal() constructor.
- A void method named printValues() with no parameters that displays all data members for the object of that class and then calls the printValues() method of the Animal class to display the private data members of the superclass.

UML Diagram for the Pet Class



4) Design a program with the main method to test the Pet class. Include the following elements in the program:

- Create a local variable named dog and initialize it with a new object of the type Pet. You can expect a spayed dog to live 11 years and weigh around 20 pounds. Your dog should live indoors and not bite.
- Call the printValues() to display the data members of dog.

Following is a copy of the screen results that might appear after running your program, depending on the data entered.

A spayed dog named Fifi should live to be 11 years and weigh 20 pounds.
Your dog lives indoors and does not bite.