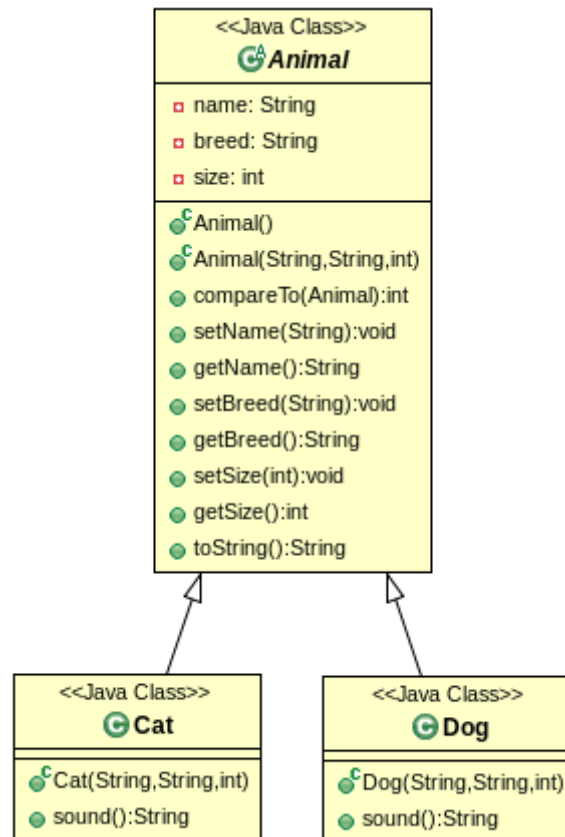# Programming 1
Assignment 8

You are required to:

1. Implement in Java, the code required for *each* of the classes shown in the UML diagram above. The Animal class should implement **Comparable** and **Serializable**. And should also override the **compareTo()** using the *name* instance variable for comparison.

2. The assignment requires you to create a tester class for the inheritance hierarchy. The tester class should include the following:

   • Create instances of both the Dog and Cat classes and assign values to each object's instance variables.
   • Create & populate a linked list with the Dog & Cat objects and display the contents of the list.
   • Sort the list by *name* using *Collections.sort()* and display the sorted list.
   • Write an inner class which implements **Comparator** and overrides the **compare()** method allowing comparisons to be made on the *breed* instance variable.
   • Sort the list by *breed* using *Collections.sort()* and display the sorted list.
   • Write a second inner class which implements **Comparator** and overrides the **compare()** method allowing a comparison to be made on the *size* instance variable.
   • Sort by size using *Collections.sort()* and display the sorted list.
   • Serialize the list, then deserialize and display the list.