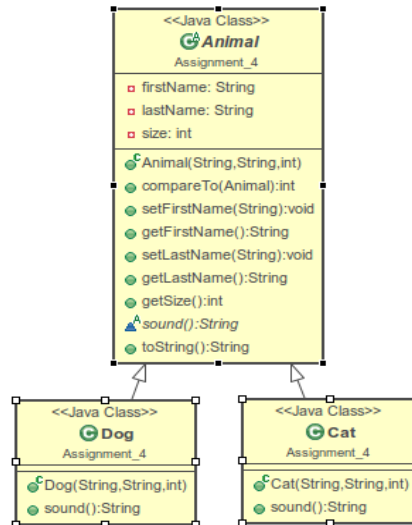


CT 3535

Assignment 4



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 *firstName* 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 first 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 *lastName* instance variable.
 - Sort the list by last name 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 application, then deserialize and display the list.

Your output should loosely resemble the following, using different names and sizes:

```
Before Sorting
[Fido Smith 10, Henry Jones 5, FiFi Maloney 4, Albert Adams 7, Brian Zukkerman 2]

After Sorting on First Name
[Albert Adams 7, Brian Zukkerman 2, FiFi Maloney 4, Fido Smith 10, Henry Jones 5]

After Sorting on Last Name
[Albert Adams 7, Henry Jones 5, FiFi Maloney 4, Fido Smith 10, Brian Zukkerman 2]

After Sorting on Size
[Brian Zukkerman 2, FiFi Maloney 4, Henry Jones 5, Albert Adams 7, Fido Smith 10]

Application Serialised

Application Deserialized
[Brian Zukkerman 2, FiFi Maloney 4, Henry Jones 5, Albert Adams 7, Fido Smith 10]
```