Lab 2: Methods for Unions

Software provided

- file **numbers.java** that defines classes that represent a list of integers

Goals

- Develop methods for a class hierarchy that represents a list of primitive types and a list of objects in another class.

- QUIZ: Demonstrate the ability to design methods for small class hierarchies.

Details

- Methods for a list of integers.

  Open up the file **numbers.java** that represents a list of integers.

  – Make examples for this class hierarchy
  – Design the method that computes the sum of all numbers - make sure you follows the design recipe
  – Design the method that sorts the numbers in ascending order
  – Design the method that produces a list of all positive numbers in the original list

- QUIZ (10 minutes, closed notes, closed monitor)

- Methods for a list of objects.

  A cat has a name, a breed, weight, and is either long-hair or a short-hair cat. You may assume that the breed can be represented as a `String`

  – Design the Java class to represent cats.
  – Design the class hierarchy that represents a list of cats
  – Design the method that will produce a list of all long-hair cats from an original list of cats
  – Design the method that will sort the cats by weight

– Design the method that will determine whether there are any cats of a given breed in the original list.

- Methods for other class hierarchies

  Use the code from last lab, where you designed the class hierarchy for mail items.

  – Design a list of mail items
  – Draw a class diagram for this class hierarchy
  – Design the method that computes the total weight of all items in the bag of one mail delivery person
  – Design the method that computes the total amount of postage a mail clerk collected during one shift

Note: Compare the methods you wrote with the Scheme loops - for each method determine which Scheme loop it resembles.