

Quiz #1

Name:

READ THE QUESTIONS CAREFULLY!!! DO NOT WASTE TIME DOING MORE THAN IS ASKED FOR. DO NOT IMPLEMENT METHODS UNLESS SPECIFICALLY REQUESTED. YOU DO NOT NEED TO COMMENT THE CODE. YOU MAY USE T INSTEAD OF AnyType. IN QUESTION 2 IF YOU INVOKE AN ARRAYLIST METHOD YOU MUST SHOW THE IMPLEMENTATION OF THE METHOD.

1. Write an **interface** `cop3530.List` with the public methods below. (This is a different interface than what you wrote for program 1, but the principles are identical.) `List` is the name of the **generic interface** that stores identically typed items and has the following functionality:
 - Three accessors: `contains` returns true if a specified object is found in the set; returns false otherwise. `isEmpty`, tests if the `List` is empty; and `size` returns the number of elements currently stored in the `List` container.
 - Two mutators: One makes the `List` empty; the other (`add`) inserts a new item. The call to `add` always succeeds unless something exceptional occurs.
2. Provide a **generic** class `cop3530.ArrayList` that implements the `List` interface. Represent the `ArrayList` internally as a primitive array (**THAT IS NOT SORTED**), and a `size` data member, After listing the data fields, you may use `...` to indicate the rest of the body of this class, except for the following which must be implemented:
 - (a) Implement `toString`.
 - (b) Implement `add`. You must expand the array as appropriate. The implementation always adds at the end of the list.