CISC 3115 TY3

C24b: Lists: Exercises

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Exercises

- C24b-1: deleting elements from list and measuring time
- C24b-2: Use iterator to search and update elements
- (Optional) C24c-3: Sorting and searching lists and measuring time

C24b-1: deleting elements from list and measuring time

- Following the steps below,
  - Create directory C24b-1 in your weekly programming repository, copy the example program to the directory
  - Add methods to delete the first element from an ArrayList and a LinkedList similar to the "insert" element methods discussed in class and in the example code
  - Revise the main method to invoke your method.
  - Run the program, and compare the time used to delete many times from an ArrayList and that from a LinkedList.
  - Document your observation as a comment in the program
  - Use git to make submission

C24b-2: Use iterator to search and update elements

- Following the steps below,
  - Create directory C24b-2 in your weekly programming repository, copy the example program TestUpdateListObjects to the directory
  - Examine the two examples: TestListIteration and TestUpdateListObjects
  - Add a method to TestListStudent class that replace every student whose first name starting with "J" to "John" via a ListIterator.
  - Revise the main method to invoke your method with with both an ArrayList and a LinkedList
  - Use git to make a submission

C24b-3: Sorting and searching lists and measuring time

- Use Comparator and Collections, and follow the steps below
  - Create directory C24b-3 in your weekly programming repository, copy the example program TestUpdateListObjects to the directory
  - Sort the lists (ArrayList and LinkedList) in descending order by student's last name
  - Use binary search to find a student given the student's last name
  - Write a method to measure search time for a large number of searches for either an ArrayList or a LinkedList
  - Revise the main method to invoke your method to show and compare the search time.
  - Use git to make a submission