Santa Clara University
School of Engineering

CSEN 79L: OOP and Adv. Data Structure

Lab 3.1 Roster using Linked List

Switch the storage mechanism from lab 3 (Roster) to linked-list.
In the previous lab, the class "Roster" use a fixed-sized array to store records of "Student" objects, instantiated from data reading from stdin. In this exercise, we change "Roster" to use a linked-list.

1. Declare a "Node" infrastructure representing a node in a linked list.
2. Instead of an array of Student, use the "head" of the linked-list (initiated as nullptr).
3. Change the "insert" function to allocate a new node and put it in the "right" place of the linked-list. Make sure to take care of allocation failure.
4. Rewrite "erase" to remove a link from the linked list.
5. Modify those "iterator" functions for linked-list.
6. Remember all "new" operator must be matched with a "delete" somehow somewhere exactly once.
7. Does your test program need to change? How about the test plan and test cases? No matter your answer, test as before and submit test results and source code.