

CS2100 - End of Vectors, Intro to Lists

- Review Friday, Test Monday
- HW due today
- Lab due Friday

A note about STL vectors:

Slight differences from our version!

Te: Constructor:

vector<string> names(15);

in ours: Capacity
in STL: size

vector<string> names(15);

Vectors: our version

- Almost done: need housekeeping or feshing
- Next HW: add more functions to our class

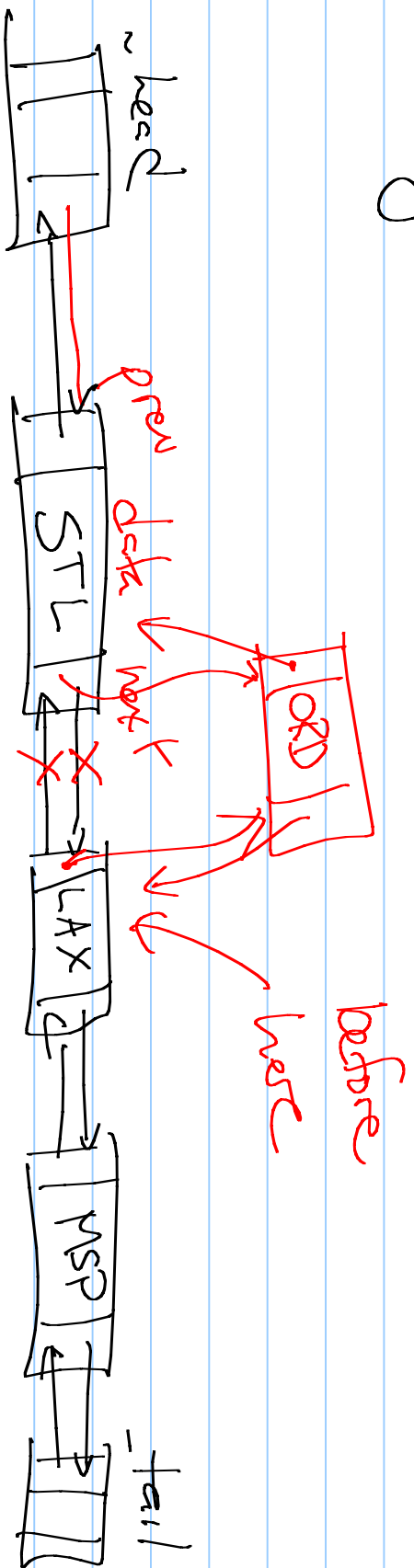
Also: code shrinking: if vector is
more than half empty, reallocate
smaller array

Lists:

Motivation: insert in vectors is slow!
(Running time?) $O(n)$

Idea: If I know where the element should go, inserting should be easy.

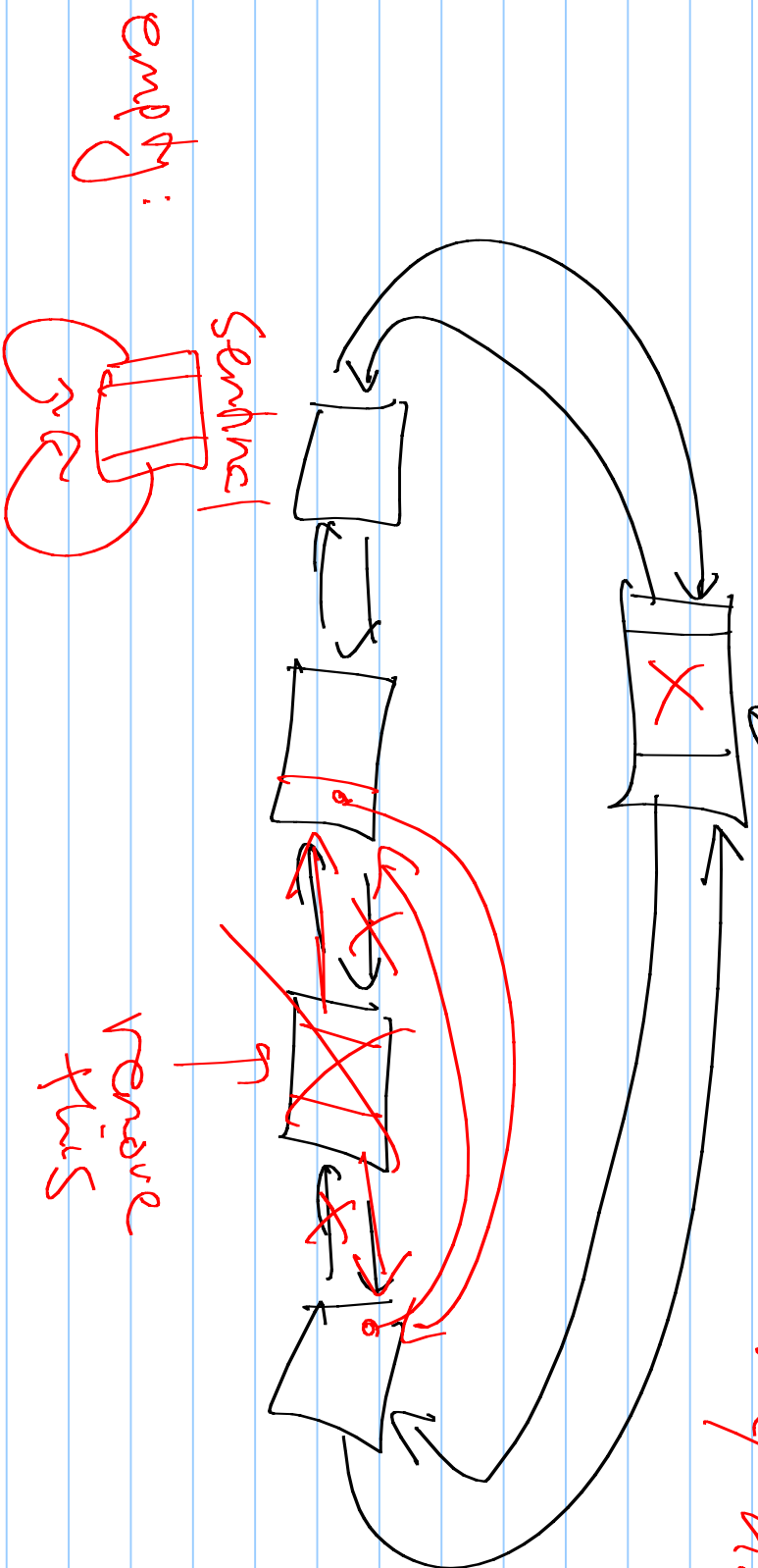
Doubly Linked Lists



insert (ORD) - where?

insert: O(1)!

Butter: Circularly linked lists
← sentinel → dummy node



Problem: Printers!

What do we need in order to know where we should insert?

location of a node \rightarrow pointer!
in main: mylist.insert(, value)

Solution: \rightarrow pointer

wrapper class holds a pointer -
but coded so that we
avoid seg faults

Iterators

An iterator will give the user a "pointer", but with a heavily controlled structure. (So they can't touch nodes directly.)

Compromise: Functionality versus info. encapsulation

