CS180 - Queues

Announcements

- Checkpoint today

- Office hours: 2-2:50

- Exam: 1 week from Monday
  review in class next Friday
  sample test will be handed out Monday
  material - up through Ch 5 - stacks & queues
SLinked List & Linked Stacks

head

push & pop

Last time

Housekeeping Functions

no pointers

no housekeeping!
memory leak!
Queue

British for what word?
Line (people as "data")
First in, first out

push  pop
enqueue - add to "back"
decqueue - remove from "front"
Behavior

push (5)
push (2)
push (12)
push (11)
pop ()
pop ()
pop ()
push (3)
push (12)
Setup

- Templating again
- Underlying structure is really a list with some functionality
- Private data:
  - Array
  - Linked list
    - Head
    - Insert
    - Remove
Functions (not same as a stack)
- size
- empty
- push
- pop
- top
Array Queues

- We must wrap around! Why?
Two options
- A lot of if statements (messy)
- Modular arithmetic
  \((\text{front} + 1) \mod \text{capacity}\)