

# CSE 250 Recitation

February 26-27: Stacks, Queues



# Stacks and Queues

- Stacks and Queues are ADT's
  - Remember ADT's define what something should do.
  - Stacks and Queues require  $O(1)$  inserts, removals, and peeks.
- These ADT's can be implemented using Linked Lists and ArrayLists
- Queues are FIFO (First In, First Out)
  - The oldest element will be removed first.
- Stacks are LIFO (Last In, First Out)
  - The newest element will be removed first.

# Stacks vs Queues

What does the following code do when MysterySequence is a Stack? Queue?

What are the relevant operations for each?

What are their runtimes for different backing data structures?

```
MysterySequence seq = new MysterySequence()  
seq.addSomething("A")  
seq.addSomething("B")  
seq.addSomething("C")  
seq.addSomething("D")  
print(seq.removeSomething())  
print(seq.removeSomething())  
print(seq.removeSomething())  
seq.addSomething("E")  
print(seq.removeSomething())  
seq.addSomething("F")  
print(seq.removeSomething())  
seq.addSomething("G")  
seq.addSomething("H")  
print(seq.removeSomething())  
print(seq.removeSomething())  
print(seq.removeSomething())
```