

This Week

Deque

A double ended queue

Let's be more careful about non-public variables

Recursion

Simple Examples

Strategies

Dequeues

Q: What does Deque stand for?

A: Double Ended Queue

Generalizes the queue we are used to.

Allow items to be added at *front* or *rear*

Allow items to be removed at *front* or *rear*

Let's try it!

Recursion

Places you have already seen *recursion*:

- Binary search tree
- Fibonacci sequence
- Recurrence relations
- Looking up a name in phone book

Rules of Recursion

Like Proof by Induction

Base Cases:

Consider the *smallest* cases

Induction Step:

Relate the *current case* to *smaller cases*

Rules of Recursion

Rules of Recursion

Base Cases:

Should be trivial

Recursive Decomposition:

Decomposition breaks problem into
sub-problems that are:

- » *smaller/simpler*
- » *similar*