Lists

- We just studied one "linear" data structure called an array.
- Linear data structures can be thought of as being laid out in a straight line.
- There are several other linear data structures we need to study.
- We begin with the concept of a "list."
What is a List?

- Remember, an ADT has three parts:
  - The specification which tells the user the view of the data elements, the structure of the ADT, and the operations performed on the ADT
  - The representation of the data and associated structure
  - The implementation of each operation
The view of a List

- Give a few examples of a list
- What does the list look like visually?
List Specification

/*

* Specification: List
*
*
* Elements: The elements are of type ListElement
*
*
* Structure: There is a linear relationship among the elements. That is,
* each list element has a unique predecessor and a unique
* successor except the first and last elements.
*
* Domain: The number of elements in the domain is bounded
* */
What operations?

- What operations can you think of that you might want to have for a list?
- The list assignment has 18 operations that you are to implement. Let's take a look.