CSE 232 SS13 Lab Session 13

1. C++ Vector
   1. Functions both as a dynamically allocated array and as a list/stack
      1. Array-based implementation
      2. Capacity refers to array capacity, size to list/stack size
         1. Capacity – number of objects in vector
         2. Size – number of objects in abstract list/stack
      3. Set initial capacity/size using constructor
         1. Default constructor: both 0
         2. Fill constructor: capacity and size from first parameter, initial value for each element from optional second parameter
   2. Array features (do NOT change size):
      1. Reallocate using reserve()
         1. Note: reserve() can only increase capacity, not size
      2. Random access (by index) with operator[]
   3. List/stack features:
      1. push\_back() [modifies size]
      2. pop\_back() [modifies size]
      3. front()
      4. back()
   4. Can also insert/remove a range of elements (not used in this lab)
      1. insert [modifies size]
      2. remove [modifies size]
   5. Provides iterators like other STL containers
      1. Iterator is a wrapper for a pointer, giving the user access to elements in a data container
      2. Member functions return an iterator, which is used in a loop
         1. Always start at begin() and stop one before end()
      3. Alternative to looping by index in “vector”
      4. “list” can only be traversed using iterators