1 Non-modifying Algorithms
   List of Algorithms

2 Modifying Algorithms
   List of Algorithms

3 More Algorithms
   List of Algorithms

4 Challenges
#include <algorithm>

- `for_each(first, last, func);` // act on all
- `iter find(first, last, val);` // locate value
- `iter find_if(first, last, pred);` // locate item that matches
- `int count(first, last, val);` // count occurrences
- Many more see: http://www.cplusplus.com/reference/algorithm/
#include <algorithm>

- copy(first, last, dst); // copy all
- swap(v1, v2); // trade values
- transform(first, last, dst, func); // process all
- replace(first, last, oldv, newv); // replace
- fill(first, last, val); // set all to val
- generate(first, last, func); // set all to val
- remove(first, last, val); // remove all val
- reverse(first, last); // reverse order
- random_shuffle(first, last, func); // shuffle
- Many more see: http://www.cplusplus.com/reference/algorithm/
#include <algorithm>

- sort(first, last); // order with <
- bool binary_search(first, last, val); // is it there?
- set_union(f1, l1, f2, l2, dst); // find in either
- set_intersection(f1, l1, f2, l2, dst); // find in both
- set_difference(f1, l1, f2, l2, dst); // find in 1 not 2
- min(v1, v2); // return smallest
- max(v1, v2); // return largest
- min_element(first, last); // return smallest
- max_element(first, last); // return largest
- Many more see: http://www.cplusplus.com/reference/algorithm/
Algorithm Challenges

Write programs that:

- Fill a vector of ints with random numbers, display the numbers.
- Fill a list of ints with random numbers, find a number in the list.
- Fill a list of ints with random numbers, find a number in a range in the list.
- Fill a vector of ints with random numbers, count the number of occurrences of a value.
- Fill a list of ints with random numbers, copy the list into a vector of ints, display the copy.
- Fill a list of ints with random numbers, square all items, display the result.
- Fill a list of ints with random numbers, display the list, reverse the items, display the result.
- Fill a vector of ints with random numbers, display the vector, shuffle the items, display the result.
Algorithm Challenges

Write programs that:

- Fill a vector of ints with random numbers, sort them, display the numbers.
- Fill a vector of ints with random numbers, sort them descending, display the numbers.
- Fill a vector of ints with random numbers, find the minimum value, display minimum.
- Fill a vector of ints with random numbers, find the maximum value, display maximum.
- Other fun operations you can imagine.