STL and Example
Review <vector>

• Declaration: `std::vector<T> vec = {initializer list}`

• Access and modify: `vec[index] = value`

• Assignment of whole array: `new_vec = vec`

• Find size: `vec.size()`

• Extend: `vec.push_back(val)`
How hard was week 6 code review assignment?

A. Easy
B. Moderate
C. Challenging
D. Unreasonable
How long did week 6 assignment take?

A. Less than 3 hours
B. 3 to 6 hours
C. 6 to 9 hours
D. 9 to 12 hours
E. More than 12 hours
Which assignment did you do?

A. Simulation (Open)
B. Simulation2 (Chef Specific)
C++ Libraries – Dictionary or Associative Array

• Take two types first key and second is value. <key,value>
• Use as an array indexed by key values.

• <map>
  • Whole container can be accessed in key order
  • O(log n) for most operations

• <unordered_map>
  • Accessing the whole container is possible but the order is not defined
  • O(1) expected for most operations
• Declaration: `std::map<T1,T2> my_map`

• Access and modify: `my_map[index] = value`

• Assignment of whole array: `new_map = my_map`

• Find size: `my_map.size()`

• Find: `my_map.find(key)`
  • Returns an `iterator` to a pair `<key,value>`
STL iterators and pair

- **Iterators**
  - Acts like a pointer access the value with * or -> as with a pointer
  - Used to interact with STL containers

- **STL pair**
  - Two types <T1,T2>
  - Access through public member variables `first` and `second`
Filestreams

- ofstream – Write to a file
- ifstream – Read from a file
- fstream – Read and write from a file

- Open the file ofstream.open(filename)
- Close the file ofstream.close()