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

<map>

- 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 `fstream.open(filename)`

- Close the file `fstream.close()`

Gradebook