

# CS 162

## Intro to CS II

Standard Template Library & Begin Lists

# Odds and Ends

- ~~Assignment #4 Discussion~~
- Fun Friday – Engineering Expo
  - ECE: Pick 2 ECE Senior Design Project and Interview
    - What was the project?
    - Did the project include writing software?
    - What did the software do?
    - What language did they use? Why?
  - CS: Pick 2 CS Senior Design Project and Interview
    - What was the project?
    - Did the project include a design of the application first?
    - What did the application do?
    - What language did they use? Why?

No class Friday  
go to expo!

# Standard Template Library

- What have we used so far?
  - vector
- Container classes
  - vector
  - list
- What else is useful?
  - `vector<T>::iterator`
  - `list<T>::iterator`

# Kinds of Iterators

- Forward

++

- Bidirectional

++ --

- Random-access

- Constant vs. Mutable

- Sentinel (not iterator) vs. Non-sentinel

– begin() vs. end()

obj that points to the values in the container

cannot use as a value

p+2

can use value ~~\*p~~  
\*p=2

Null

non-sentinel

sentinel

valid address

reverse iterator

# Programming Demo

```
access.engr.orst.edu - PuTTY
1 #include <iostream>
2 #include <vector>
3 #include "../vector.hpp"
4 using std::cout;
5 using std::endl;
6
7 int main() {
8     std::vector<int> v(2); //make a vector to hold 2 ints
9     vector<char> my_v; //making my own vector
10    std::vector<int>::iterator it; //create iterator object for vector
11    std::vector<int>::reverse_iterator itr; //create reverse iterator object
12
13    v[0]=1;
14    v[1]=2;
15    cout << v.size() << endl;
16    v.push_back(3); //push the number 3 to the back of list
17    cout << v.size() << endl;
18
19    for(it = v.begin(); it!=v.end(); it++)
20        cout << *it << endl;
21    for(itr = v.rbegin(); itr!=v.rend(); itr++)
22        cout << *itr << endl; //print in reverse using reverse iterator
23
-- INSERT --
18,1
Top
```