

CS32 Intro to Computer Science II

Baoxiong Jia & Muthu Palaniappan, DIS 1C Week 6
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About Us

- TA: Baoxiong Jia
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 - Office Hours: Tuesday 8:30-10:30am
 - Thursday 8:30-10:30am
 - Discussion 1C: Friday 12:00-13:50pm
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 - Office Hours: Monday 10:30-11:30am
 - Wednesday 10:30-11:30am

Outline

- Template
- STL

STL List

<http://www.cplusplus.com/reference/list/list/>

<https://repl.it/@jiajerry/WarmUp1>

<https://repl.it/@jiajerry/WarmUp3>

Iterators:

begin	Return iterator to beginning (public member function)
end	Return iterator to end (public member function)
rbegin	Return reverse iterator to reverse beginning (public member function)
rend	Return reverse iterator to reverse end (public member function)
cbegin <small>C++11</small>	Return const_iterator to beginning (public member function)
cend <small>C++11</small>	Return const_iterator to end (public member function)
crbegin <small>C++11</small>	Return const_reverse_iterator to reverse beginning (public member function)
crend <small>C++11</small>	Return const_reverse_iterator to reverse end (public member function)

Modifiers:

assign	Assign new content to container (public member function)
emplace_front <small>C++11</small>	Construct and insert element at beginning (public member function)
push_front	Insert element at beginning (public member function)
pop_front	Delete first element (public member function)
emplace_back <small>C++11</small>	Construct and insert element at the end (public member function)
push_back	Add element at the end (public member function)
pop_back	Delete last element (public member function)
emplace <small>C++11</small>	Construct and insert element (public member function)
insert	Insert elements (public member function)
erase	Erase elements (public member function)
swap	Swap content (public member function)
resize	Change size (public member function)
clear	Clear content (public member function)

STL Vector

<http://www.cplusplus.com/reference/vector/vector/>

<https://repl.it/@jiajerry/WarmUp2>

<https://repl.it/@jiajerry/WarmUp4>

Iterators:

begin	Return iterator to beginning (public member function)
end	Return iterator to end (public member function)
rbegin	Return reverse iterator to reverse beginning (public member function)
rend	Return reverse iterator to reverse end (public member function)
cbegin <small>C++8</small>	Return const_iterator to beginning (public member function)
cend <small>C++8</small>	Return const_iterator to end (public member function)
crbegin <small>C++8</small>	Return const_reverse_iterator to reverse beginning (public member function)
crend <small>C++8</small>	Return const_reverse_iterator to reverse end (public member function)

Modifiers:

assign	Assign vector content (public member function)
push_back	Add element at the end (public member function)
pop_back	Delete last element (public member function)
insert	Insert elements (public member function)
erase	Erase elements (public member function)
swap	Swap content (public member function)
clear	Clear content (public member function)
emplace <small>C++8</small>	Construct and insert element (public member function)
emplace_back <small>C++8</small>	Construct and insert element at the end (public member function)

STL Iterator Invalidation

- When we iterate over our container using iterators then it may happen that iterator gets invalidated
 - Invalidation rules: https://en.cppreference.com/w/cpp/container#Sequence_containers
 - <https://repl.it/@jiajerry/WarmUp5>