C++ Standard Template Library Quick Reference

Headers **ne** = num elements passed to function **n** = num elements in container		**<vector>** (back insert) (forward, reversible, rand access)	**<deque>** (back/front insert) (forward, reversible, rand access)	**<list>** (back/front insert) (forward, reversible)	**<set>** (forward) (multiset for duplicate values)	**<map>** map, multimap
	Constructor default: c; fill: c(ne, elem, alloc) range: c(inItA, iItB) copy: c(const c&)	vector	deque	list	set	map
	destructor	~vector	~deque	~list	~set	~map
	operator=	operator=	operator=	operator=	operator=	operator=
capacity	size	O(1)	O(1)	O(1)	O(1)	O(1)
	max_size [sys limit]	O(1)	O(1)	O(1)	O(1)	O(1)
	empty	O(1)	O(1)	O(1)	O(1)	O(1)
	capacity	O(1)				
	reserve(space) Does not change size	O(n)				
	resize(n, elem=def) Changes size	O(n)	O(n)	O(n)		
element access	front	O(1)	O(1)	O(1)		
	back	O(1)	O(1)	O(1)		
	operator[i]	O(1)	O(1)			O(log n) (map)
	at(i)	O(1)	O(1)			
Modifiers (emplace C++11)	assign(iterA, iterB): range assign(ne, val): fill	O(n) O(n)	O(ne) O(ne)	O(ne) O(ne)		

Headers		<vector>	<deque>	<list>	<set>	<map>

	insert(iter, val)
	insert(iter, ne, val)
	insert(iter, inItA, inItB)
		O(n)	O(1)
			O(ne)
			O(ne)
				O(1)
				O(ne)
				O(ne)
					pair<it, bool> insert(val): O(log n)
					iter insert(iter, val): O(1)
					inIter insert(inItA, inItB): O(ne log n)
						O(log n)
						O(1)
						O(ne log n)

	erase(iter)
	erase(iterA, iterB)
	size_t erase(val)
		O(n)
		O(n)
			O(1)
			O(ne)
				O(1)
				O(ne)
					O(1)
					O(ne)
					O(log n)
						O(1)
						O(ne)
						O(log n)

	clear	O(n)	O(n)	O(n)	O(n)	O(n)
	swap(container &)	O(1)	O(1)	O(1)	O(1)	O(1)
	push_back(val)	O(1)	O(1)	O(1)		
	pop_back	O(1)	O(1)	O(1)		
	push_front(val)		O(1)	O(1)		
	pop_front		O(1)	O(1)		
	emplace(iter, ne,ele)	O(n)	O(ne)	O(ne)	O(log n)	O(log n)
	emplace_back(elem)	O(1)	O(1)	O(1)		
	emplace_front(elem)		O(1)	O(1)		
list operations	remove(val)			O(n)		
	remove_if(predicate)			O(n)		
	unique([binaryPred])			O(n - 1)		
	merge(list &m, [cmp])			O(n + m -1)		
	reverse			O(n)		
	sort([cmp])			O(n log n)		

Headers		<vector>	<deque>	<list>	<set>	<map>

	splice(iter, list &newLst) splice(iter, list &, inIter) splice(it, list&, inItA, inItB)			O(1)
				O(1)
				O(ne)		

Associate containers operations	count				O(log n)	O(log n)
	find				O(log n)	O(log n)
	equal_range				O(log n)	O(log n)
	lower_bound				O(log n)	O(log n)
	upper_bound				O(log n)	O(log n)