8.1. Type Definitions

container **::value_type**

- The type of elements.
- For (unordered) sets and multisets, it is constant.
- For (unordered) maps and multimaps, it is `pair<const` *key-type*`,` *mapped-type*`>`.
- Provided by array, vector, deque, list, forward list, set, multiset, map, multimap, unordered set, unordered multiset, unordered map, unordered multimap, string.

container **::reference**

- The type of element references.
- Typically: *container* `::value_type&`.
- For `vector<bool>`, it is an auxiliary class (see Section 7.3.6, page 282).
- Provided by array, vector, deque, list, forward list, set, multiset, map, multimap, unordered set, unordered multiset, unordered map, unordered multimap, string.

container **::const_reference**

- The type of read-only element references.
- Typically: `const` *container* `::value_type&`.
- For `vector<bool>`, it is `bool`.
- Provided by array, vector, deque, list, forward list, set, multiset, map, multimap, unordered map, unordered multimap, string.

container **::iterator**

- The type of iterators.
- Provided by array, vector, deque, list, forward list, set, multiset, map, multimap, unordered set, unordered multiset, unordered map, unordered multimap, string.

container **::const_iterator**

- The type of read-only iterators.
- Provided by array, vector, deque, list, forward list, set, multiset, map, multimap, unordered set, unordered multiset, unordered map, unordered multimap, string.

container **::reverse_iterator**

- The type of reverse iterators.
- Provided by array, vector, deque, list, set, multiset, map, multimap, string.

container **::const_reverse_iterator**

- The type of read-only reverse iterators.
- Provided by array, vector, deque, list, set, multiset, map, multimap, string.

container **::pointer**

- The type of pointers to elements.
- Provided by array, vector, deque, list, forward list, set, multiset, map, multimap, unordered set, unordered multiset, unordered map, unordered multimap, string.

container **::const_pointer**

- The type of read-only pointers to elements.
- Provided by array, vector, deque, list, forward list, set, multiset, map, multimap, unordered set, unordered multiset, unordered map, unordered multimap, string.

container **::size_type**

- The unsigned integral type for size values.
- Provided by array, vector, deque, list, forward list, set, multiset, map, multimap, unordered set, unordered multiset, unordered map, unordered multimap, string.

container **::difference_type**

- The signed integral type for difference values.

- Provided by array, vector, deque, list, forward list, set, multiset, map, multimap, unordered set, unordered multiset, unordered map, unordered multimap, string.

container :: **key_type**

- The type of the key of the elements for associative and unordered containers.
- For (unordered) sets and multisets, it is equivalent to `value_type`.
- Provided by set, multiset, map, multimap, unordered set, unordered multiset, unordered map, unordered multimap.

container :: **mapped_type**

- The type of the value part of the elements of associative and unordered containers.
- Provided by map, multimap, unordered map, unordered multimap.

container :: **key_compare**

- The type of the comparison criterion of associative containers.
- Provided by set, multiset, map, multimap.

container :: **value_compare**

- The type of the comparison criterion for the whole element type.
- For sets and multisets, it is equivalent to `key_compare`.
- For maps and multimaps, it is an auxiliary class for a comparison criterion that compares only the key part of two elements.
- Provided by set, multiset, map, multimap.

container :: **hasher**

- The type of the hashing function of unordered containers.
- Provided by unordered set, unordered multiset, unordered map, unordered multimap.

container :: **key_equal**

- The type of the equality predicate of unordered containers.
- Provided by unordered set, unordered multiset, unordered map, unordered multimap.

container :: **local_iterator**

- The type of the bucket iterators of unordered containers.
- Available since C++11.
- Provided by unordered set, unordered multiset, unordered map, unordered multimap.

container :: **const_local_iterator**

- The type of read-only bucket iterators of unordered containers.
- Available since C++11.
- Provided by unordered set, unordered multiset, unordered map, unordered multimap. In addition, type `allocator_type` is provided for all containers except arrays (see Section 8.10.1, page 430).