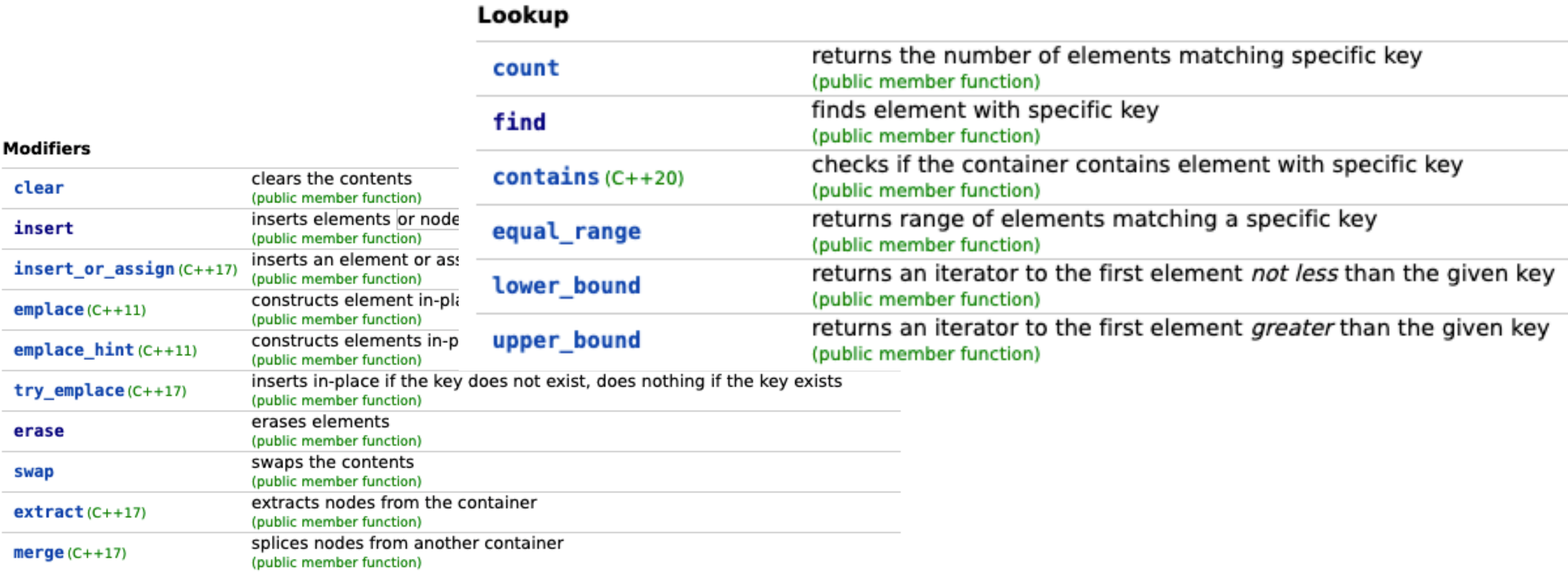
Red-Black Trees in C++

C++ provides us a balanced BST as part of the standard library:

```
std::map<K, V> map;
```



Lookup

count	returns the number of elements matching specific key (public member function)
find	finds element with specific key (public member function)
contains (C++20)	checks if the container contains element with specific key (public member function)
equal_range	returns range of elements matching a specific key (public member function)
lower_bound	returns an iterator to the first element *not less* than the given key (public member function)
upper_bound	returns an iterator to the first element *greater* than the given key (public member function)

Modifiers

clear	clears the contents (public member function)
insert	inserts elements or node (public member function)
insert_or_assign (C++17)	inserts an element or ass (public member function)
emplace (C++11)	constructs element in-pl (public member function)
emplace_hint (C++11)	constructs elements in-p (public member function)
try_emplace (C++17)	inserts in-place if the key does not exist, does nothing if the key exists (public member function)
erase	erases elements (public member function)
swap	swaps the contents (public member function)
extract (C++17)	extracts nodes from the container (public member function)
merge (C++17)	splices nodes from another container (public member function)