

Set/multiset (both) uses Red Black Tree for internal

## Multiset (Self Balance BST internally)

- allows multiple instances. (repeated allowed)
- sorted order data
- ms.erase(10) (erases all instances of 10)
- ms.count (returns 0 or 1) no. of value
- auto it = ms.lower\_bound(20) (10 20 20 40)

O/P  $\rightarrow$  20 (iterator to 20)

auto it = ms.upper\_bound(20)

O/P  $\rightarrow$  40 (iterator to 40)

- ms.equal\_range(value)  $\rightarrow$  pairs of integer  
first gives lower bound second upper bound

datatype  $\rightarrow$  `unordered_multiset<int>`, `multiset<int>`

Unordered Set (no distinct value)

- 1) All elements in any order (Uses Hashing internally)
- 2) `size()`  $\rightarrow$  size
- 3) `clear()`  $\rightarrow$  clears the container
- 4) `s.find(key)`  $\rightarrow$  finds the value
- 5) `count()`  $\rightarrow$  returns 1 if element is present else 0.
- 6) `erase(key)`  $\rightarrow$  erases the value

$\rightarrow$  `begin()`, `end()`, `cbegin()`, `ceval()`  $\rightarrow$   $O(1)$

$\rightarrow$  insert, find, erase, count  $\rightarrow$   $O(1)$  Avg.

$\rightarrow$  search, delete  $O(1)$