

## HASHING DATA STRUCTURE

- `#include < unordered_set >`
- An `unordered_set` is implemented using a hash table
- where keys are hashed into indices of a hash table so that the insertion is always randomised
- All operations on the `unordered_set` takes constant time  $O(1)$  on an average
  - which can go up to linear time  $O(n)$  in worst case
  - which depends on the internally used hash function, but practically they perform very well and generally provide a constant time lookup operation.

Hello world

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- **Set vs unordered\_set**
- **Set -> key are stored in ordered fashion**  
**unordered\_set -> keys are stored in unordered fashion**
- **Set is internally implemented as RED BLACK Tree**  
**unordered\_set is internally implemented HASHING**
- **Set operation -> Time complexity  $O(\log n)$**   
**unordered\_set operation -> Time complexity  $O(1)$**

Hello world

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■ `#include< unordered_set >`

### ■ FUNCTIONS

`insert()`                      `unordered_set` does not have duplicates key

`size()`

`clear()`

`begin()`

`end()`

`auto it = s.find( key );`

`find()`

`s.erase(key)`

`s.erase(it)`

`erase()`

`count()`                      It is substitute of `find ()` function

`find ()` function return the iterator to that element

`count ()` function return the '1' if it is present or '0' if not

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