**Hashing STL**

Standard template library has two containers for hashing.

1. Map

Maps are containers which store elements by mapping their value against a particular key. Key values are used to uniquely identify the elements mapped to it.

1. The data type of key value and mapped value can be different.
2. Elements in the map are always in sorted order by their corresponding key.
3. Unordered\_map

Unordered\_maps are containers which store elements by mapping their value against a particular key. Key values are used to uniquely identify the elements mapped to it.

1. The data type of key value and mapped value can be different.
2. Elements in the unordered\_map are not sorted by their corresponding key.

Difference between map and unordered\_map:

|  |  |  |
| --- | --- | --- |
| Operation | Map | Unordered\_map |
| Insertion | O(log(n)) | O(1) |
| Accessing | O(log(n)) | O(1) |
| Implementation | Red-black trees | Hash tables (array of buckets) |

Declaration of

* Maps

*map<int,int> mp;*

* Unordered\_map

*unordered\_map<int,int> mp;*