

\* Hash table :- In python hash table is known as dictionary.

- Hash table always has search complexity of  $O(1)$ .
- With the help of hash function it generates a number / or address value which will help in ~~searching~~ searching easy with  $O(1)$ .
- We can create our own hash fun to generate a number.
- When we end up storing two values at same index in hash function that situation is called collision.
- In this case the two values stores in linked list state.
- To solve we can use chaining, overflow areas, rehashing etc.
- In this case the complexity might go to  $O(n)$ .
- If system hash function the collision situation is extremely rare.

→ Operations and their complexity.

i) Search  $O(1)$  in average case

if it is collision then  $O(n)$ .

ii) Insert  $O(1)$ ,  $O(n)$  in edge cases.

iii) Delete  $O(1)$ .