Introduction

Hash Table is a data structure which organizes data using hash functions in order to support quick insertion and search.

There are two different kinds of hash tables: hash set and hash map.

* The hash set is one of the implementations of a set data structure to store no repeated values.
* The hash map is one of the implementations of a map data structure to store (key, value) pairs.

It is easy to use a hash table with the help of standard template libraries. Most common languages such as Java, C++ and Python support both hash set and hash map.

By choosing a proper hash function, the hash table can achieve wonderful performance in both insertion and search.

In this card, we will answer the following questions:

1. What is the principle of a hash table?
2. How to design a hash table?
3. How to use hash set to solve duplicates related problems?
4. How to use hash map to aggregate information by key?
5. How to design a proper key when using a hash table?

And we also provide exercises for you to be familiar with hash table.