Rehashing:

When the hash table becomes too full in open addressing, the successive insertion operation will take more time to complete. To overcome this situation rehashing technique is used.

* Build a hash table twice as big and scan down the entire original hash table place the hash table value to new table.

Eg: Insert {13, 15, 24, 6, 23} into a hash table size 7

hash function is $h(x) = x \bmod 7$

$h(13) = 13 \% 7 = 6$

$h(15) = 15 \% 7 = 1$

$h(24) = 24 \% 7 = 3$

$h(6) = 6 \% 7 = 6$ $h_0( )$ $h_1( )$

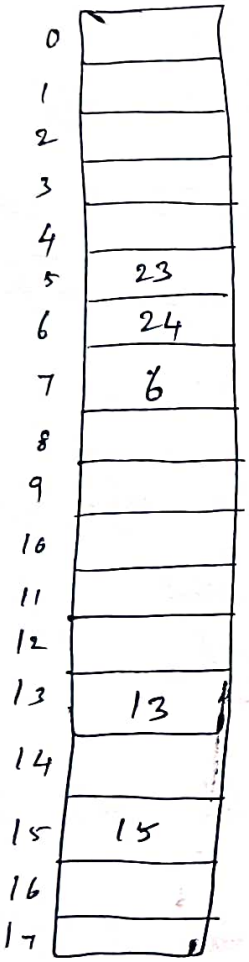
$h(23) = 23 \% 7 = 2$

0	6
1	15
2	23
3	24
4	
5	
6	13

→ double the table size & consider next prime no.

$7 \times 2 = 14$

17 ← Prime no.



$13 = 13 \% 17 = 13$

$15 = 15 \% 17 = 15$

$24 = 24 \% 17 = 6$

$h_0(6) = 6 \% 17 = 6$ full

$h_1(6) = 7 \% 17 = 7$

$23 = 23 \% 17 = 5$

→ This entire operation is called Rehashing.

→ Implemented in several ways.

① Rehash as soon as table is half full.

② Rehash only when an insertion fail

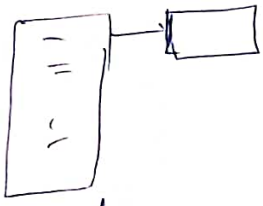
③ " when the table reaches a certain load factor.

Extendible hashing:

→ Insertion, deletion difficult in open addressing.

→ hash table stored in main memory & buckets (small table) " " disk

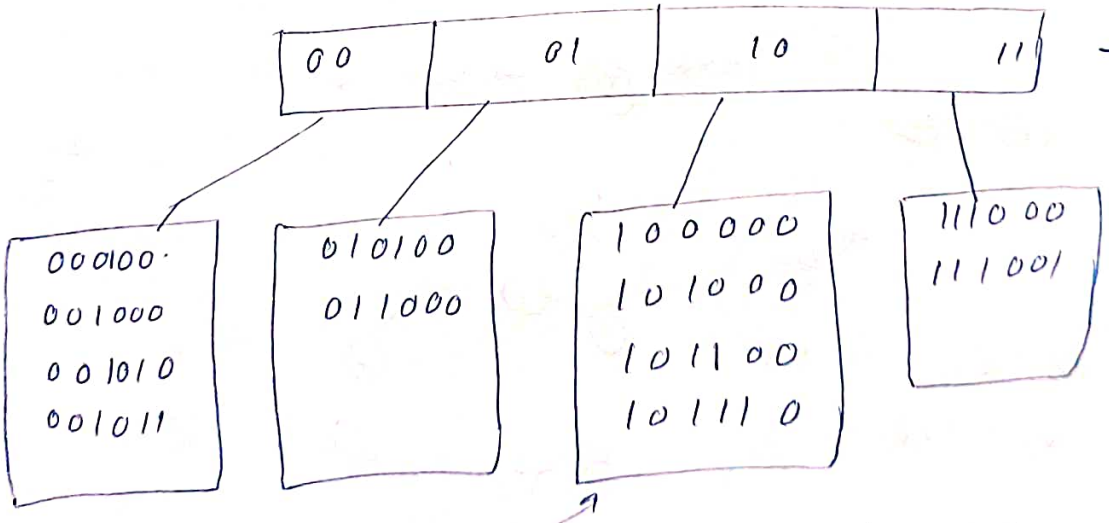
→ pointer used to point secondry table (bucket)



→ pointer created by using hash function.

→ stores 6-bit number.

→ 2^2 bit pointer.



insert 100100 already filled, split and increase ptr.