

## Hashmaps

→ storing & retrieving information.

Key, value

< Roll no, Student name >

< 1, Kiran >  
< 2, Mohit >  
< 3, Kunal >

< Key, value >  
Index Name

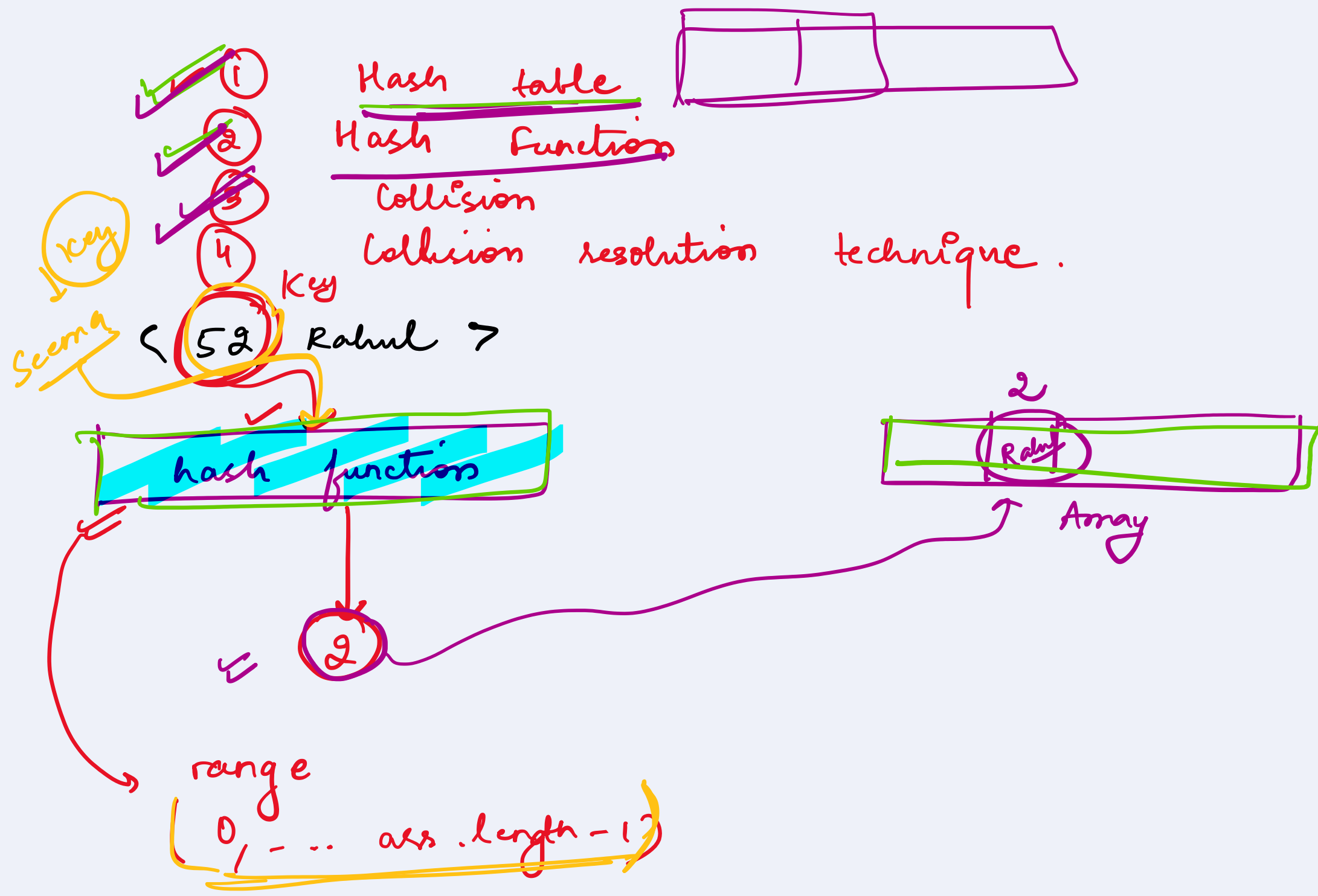
Arrays of strings

arr[2] - ...

0 1 2 3 4

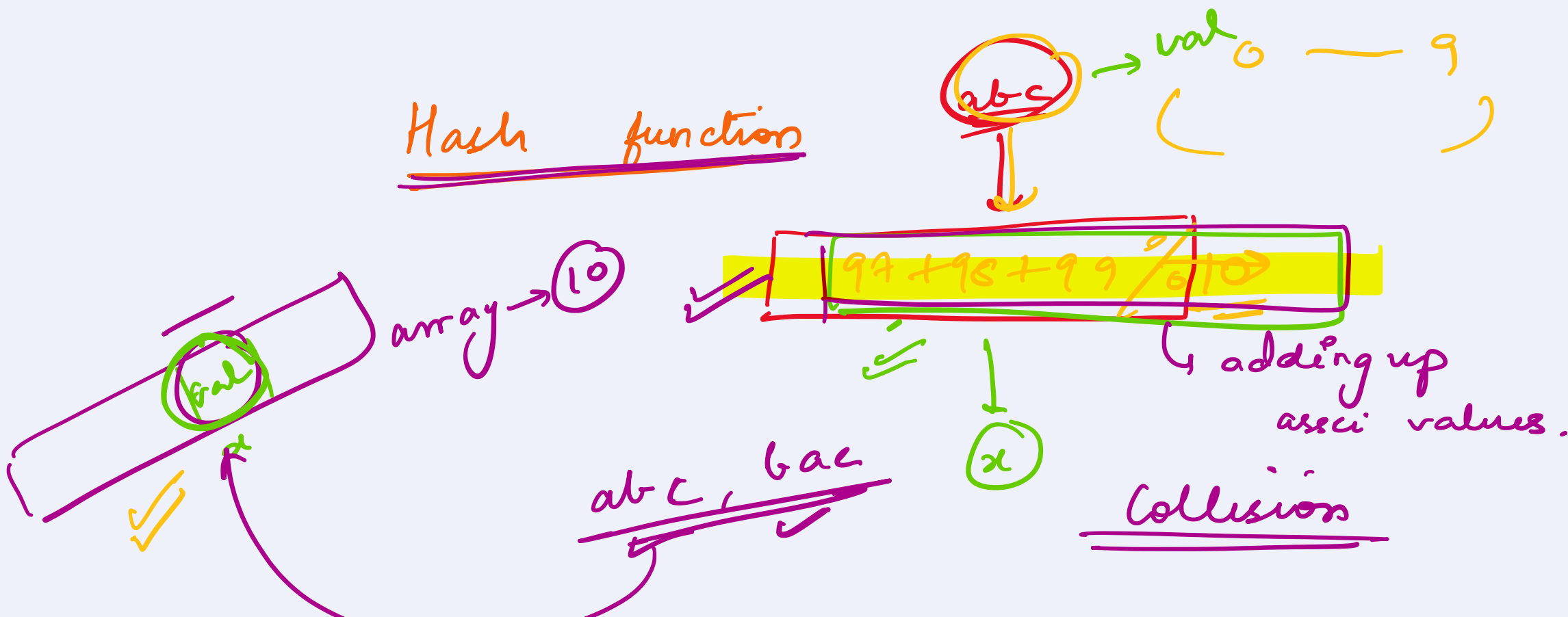
< state name, Capital >

Components of Hashing

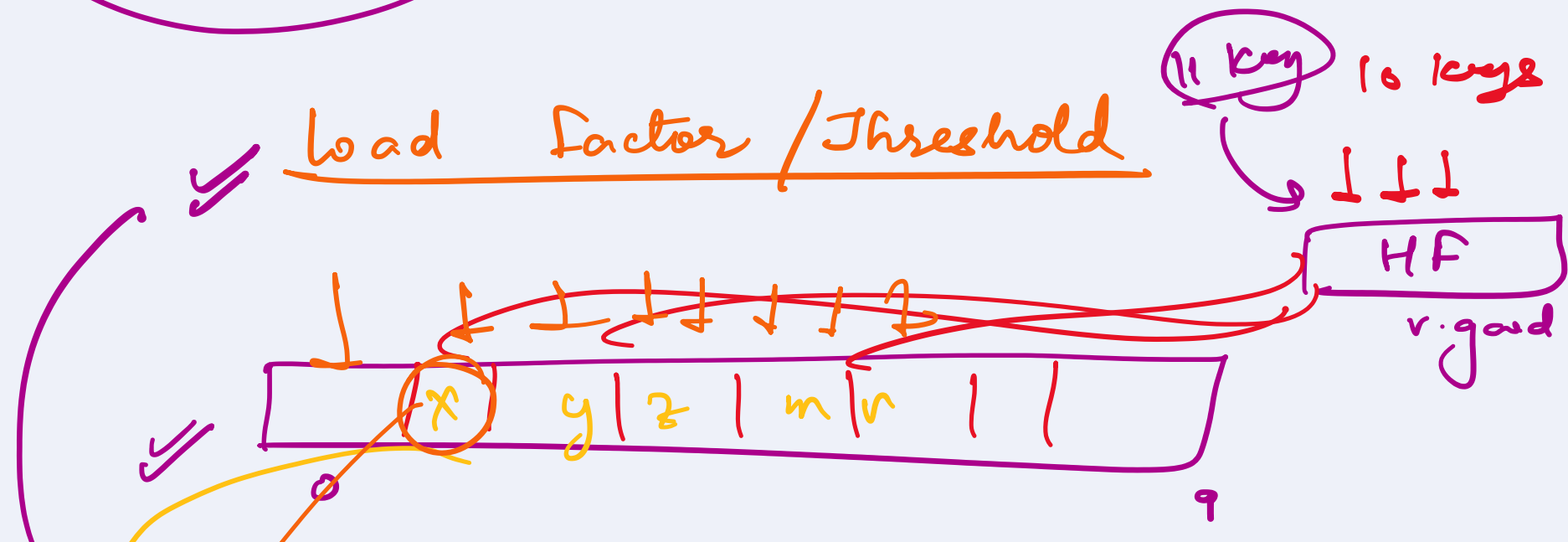


Hash functions transform keys into an index.

Hash function



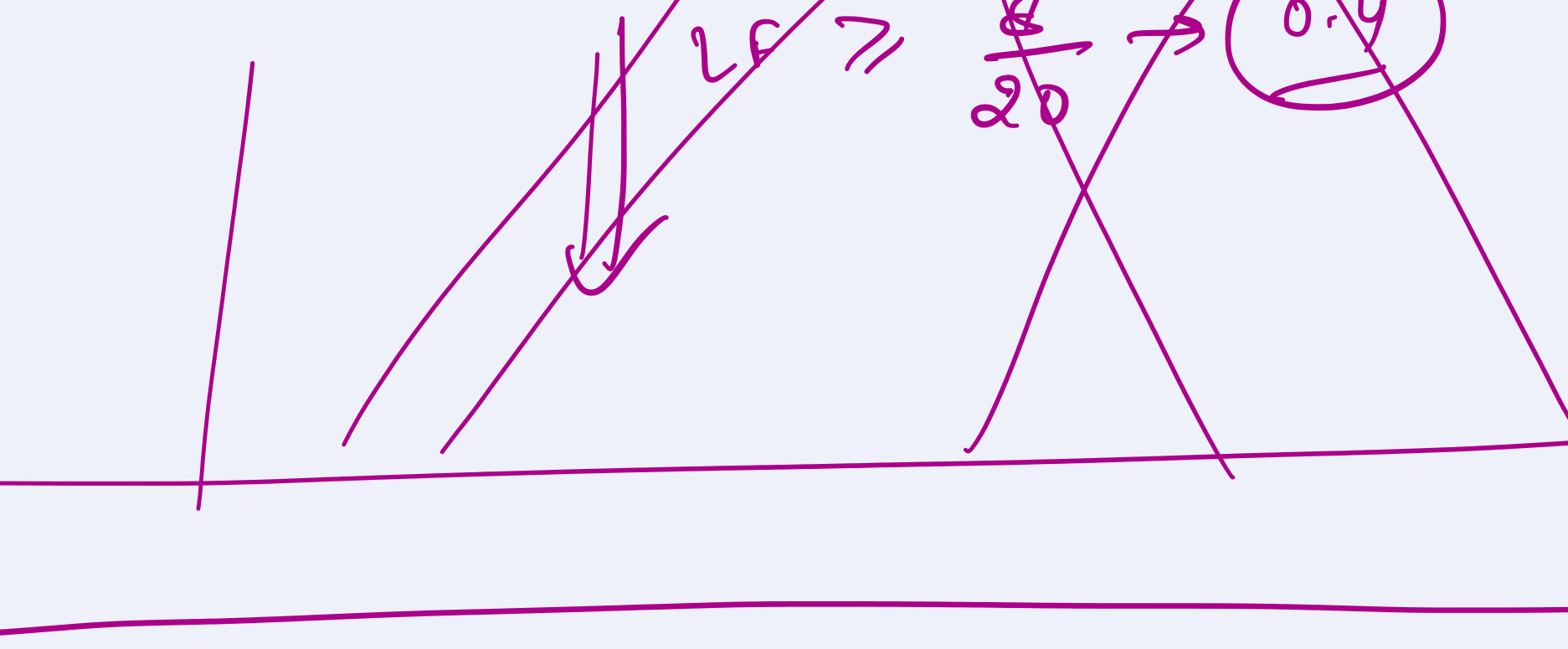
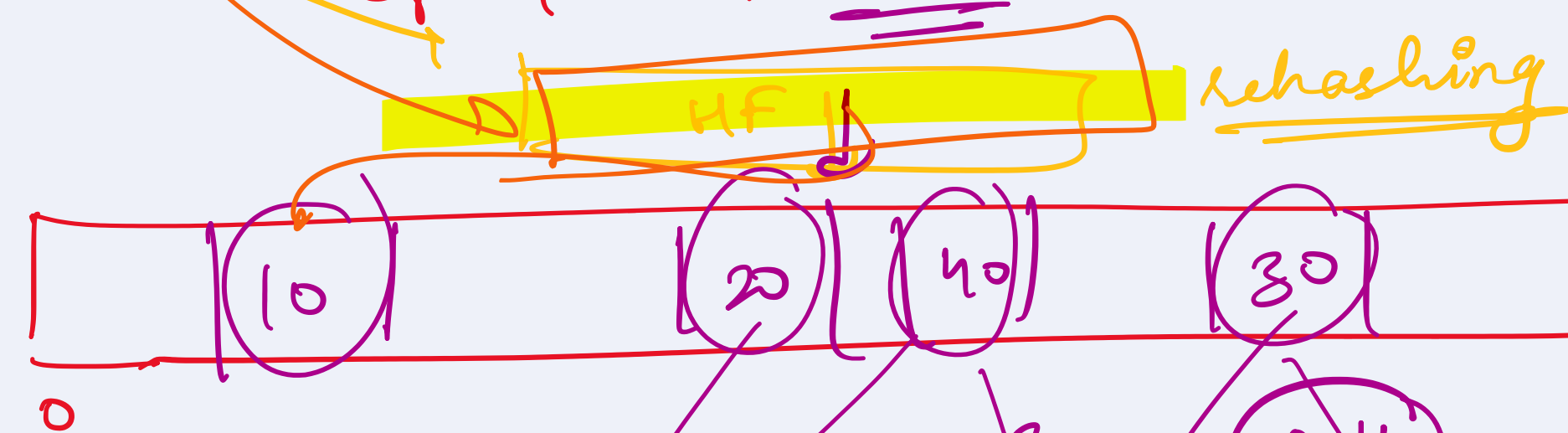
Load Factor / Threshold



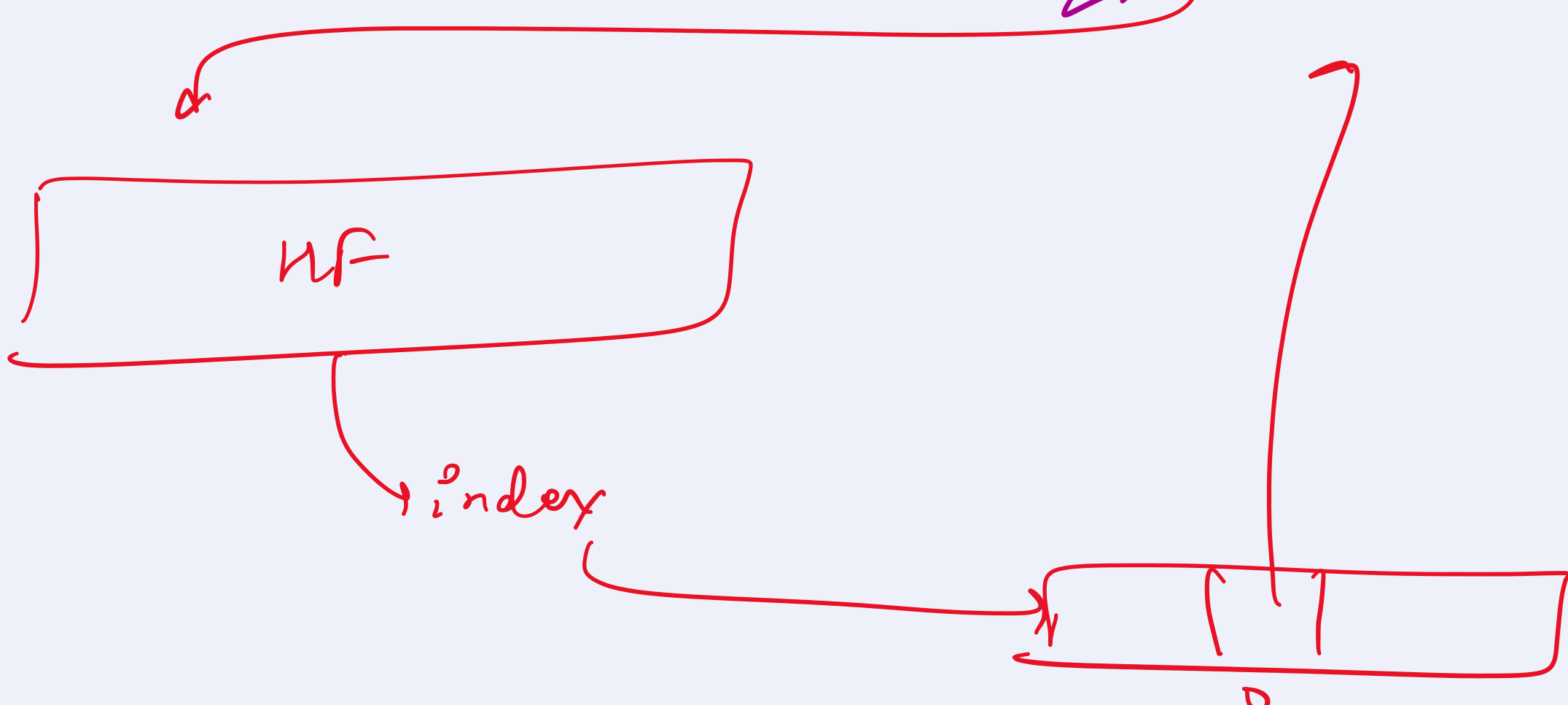
no. of elements in hash table / Hash table size

$$= \frac{8}{10} = 0.8$$

If (LF ≥ 0.4)



map.get (key)

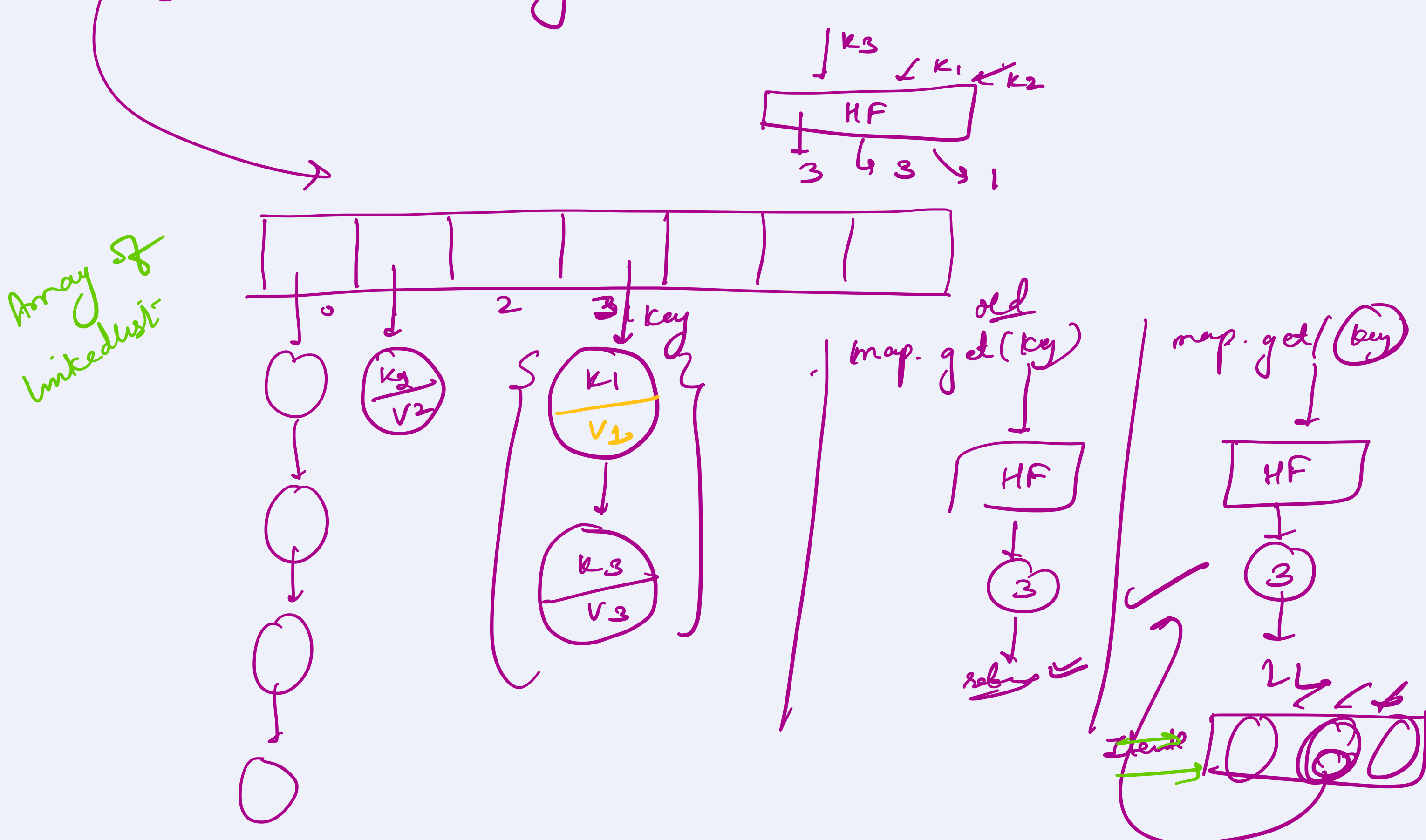


Collision

→ Collision is the condition where two records are stored in the same location.

Collision Resolution technique

- ① Direct chaining → separate chaining
- ② open addressing



- put (10, Rahul)
- get (10) // Rahul
- contains key (10); // true