

## \* LFU Cache

each key should have a frequency value

frequency

1  $\rightarrow$  (1, 10), (2, 50), (3, 42)

$\downarrow$  (1, 10)

1  $\rightarrow$  (2, 50), (3, 42)

2  $\rightarrow$  (1, 10)

$\downarrow$  (1, 10)

1  $\rightarrow$  (2, 50), (3, 42)

3  $\rightarrow$  (1, 10)

furthermore we need to have a list<sup>(map)</sup> of all the caches.

key, frequency, value

to access frequencies list (map)

get(key) → if doesn't exist, return (-1).  
→ update frequencies map.

put(key, value) → If already existing key, update value & frequency.

→ If capacity exceeding track item with least frequency. remove it from all.

. Add new item to cache.

We can create ~~Node~~ cacheNode & ~~DL~~ Double Linked List to do all by our own.

Node → key  
Value  
freq.  
prev  
Next.

DLL → head  
tail  
size of List.  
Add To Head  
Remove Node  
Remove Last.