Types of Memory

Cache

Primary
↓
RAM

Secondary
↓
ROM, HDs, SSDs,

⇒ Cache
↓
a very small but extremely fast storage

Size ———→

Cache > RAM > Secondary

←——— Speed

Cost:

[MRU
↓
Most recently used]

LRU
↓
Least recently used → t

| 10 | 2 | 4 | 6 |

8   3   5   7

Algo of LRU cache

[C=]

> Siz   Set

| 2,3 | 2,5 | 3,8 |

key | v

1 | 2

2 | 5

$\lfloor n \rfloor / n - 1$

$t - 1 \rightarrow$ set $1,3$

$\rightarrow$ set $2,5$

$\rightarrow g$ 1

$\rightarrow$ se $2,8$

$(8, 4, 10)$

$$\frac{2 \;/\!/\; 5}{2 \;/\; 8}$$

u → (node diagram)
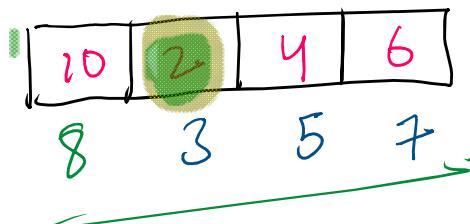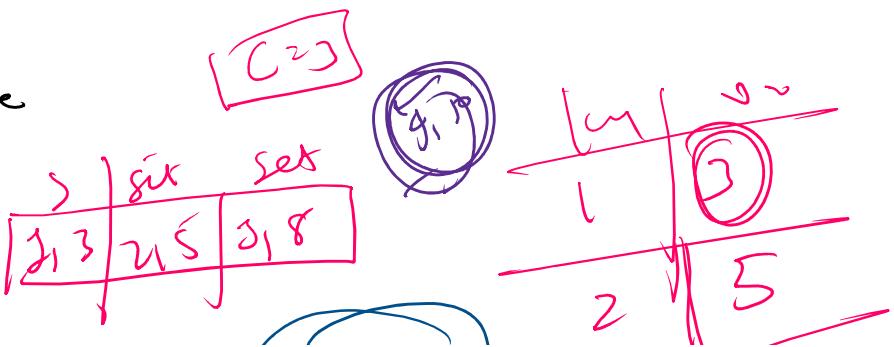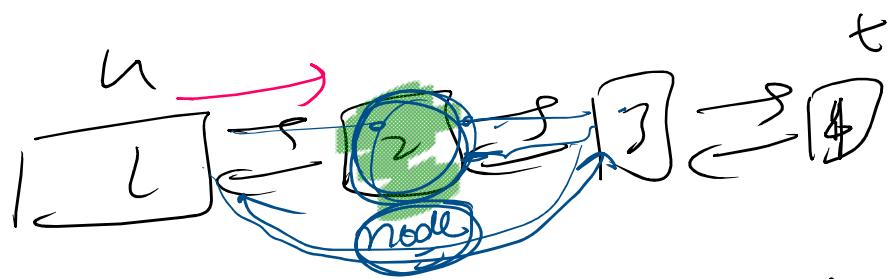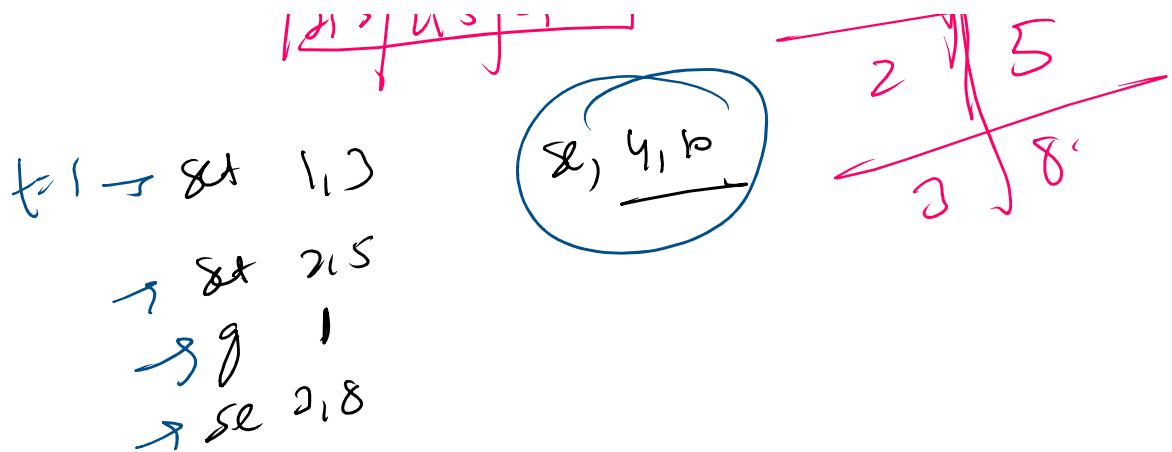
node

④ Deletion in a Doubly LL works in $O(1)$ when reference of node to be deleted is given).
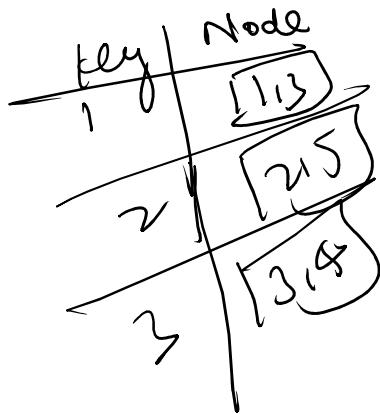
Sol^n   Hash Map + DLL

→ The tail of the DLL will contains the LRU entry and head will contain MRU

C-3

Set 1,3
Set 2,5
get 1

Set 3,4
Set 4,10

[1,2] → [3,4] → [1,1] ⇄ [2,5] ⇄ [tail]

key	Node
1	[1,3]
2	[2,5]
3	[3,4]

⇒ get → key X → [-1]

(key)
→ de
→ in
→ ret val