

- Hashset Implementation - Queue using stack
- Hashmap Overview/Implementation - Min Stack

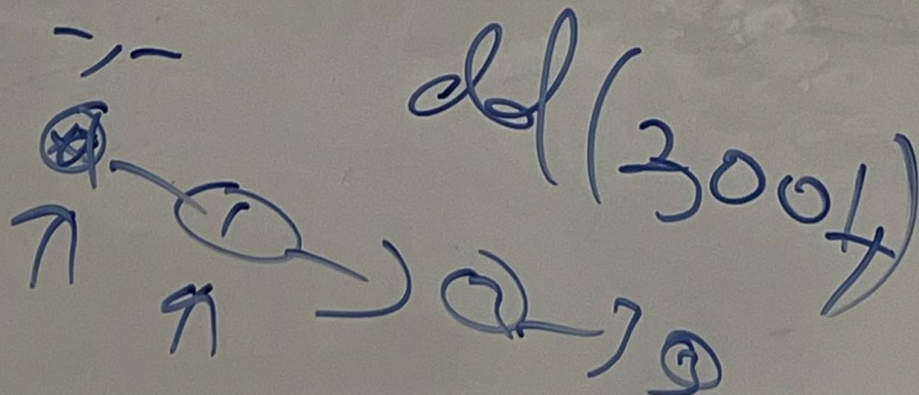
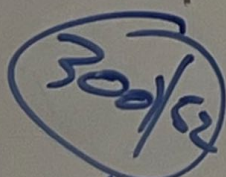
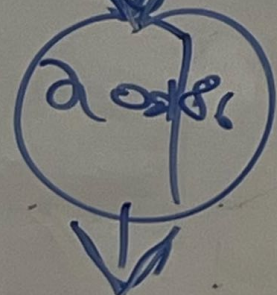
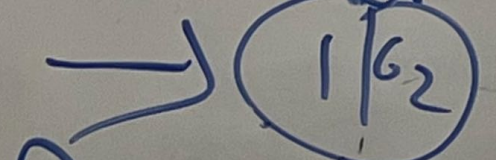
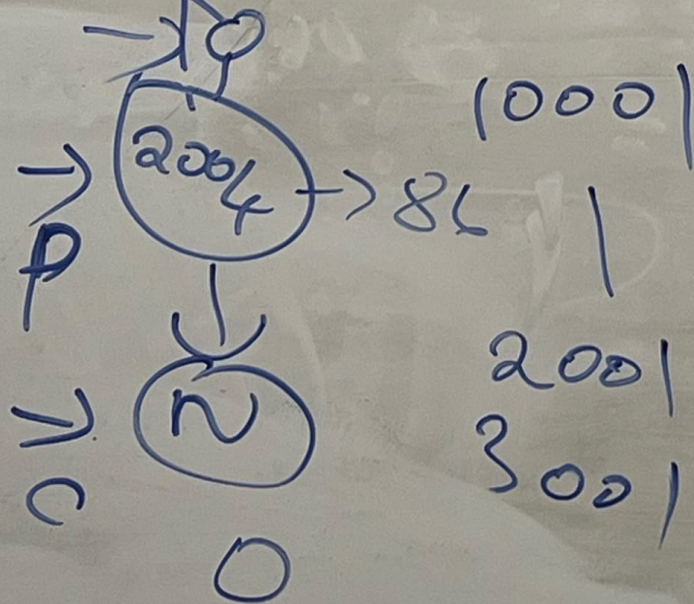
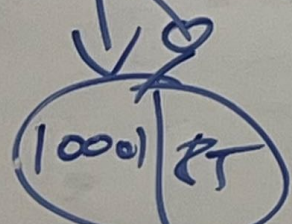
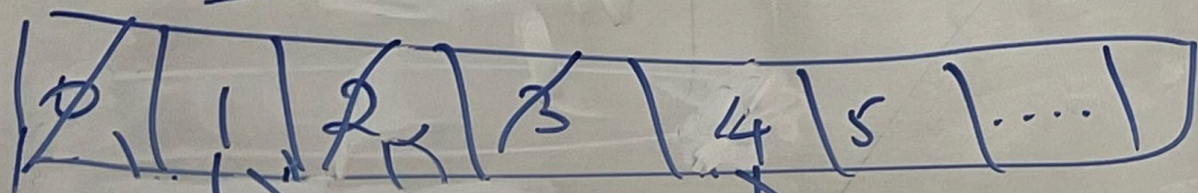
BASICS

2, 4, -1, 8, 3, -2, 5

Find Min element in the stack in $O(1)$ TC

- 5 / Double hashing $\frac{1}{11}$ hashing $[0, 10^6]$ Queue stack

100 X 10000



- hashing $O(1)$
- Use Array Index concept
- hashing
- Collision

Evenly distribute to reduce Prob of Collision

Collision handling Technique

- linear chaining
- Double hashing
- Linear Probing

remove(k)
update(k, v)
add(k, v)
Search(k)
 $O(n)$

K	V
1	62
2	75
3	80
4	75
18	95
23	80

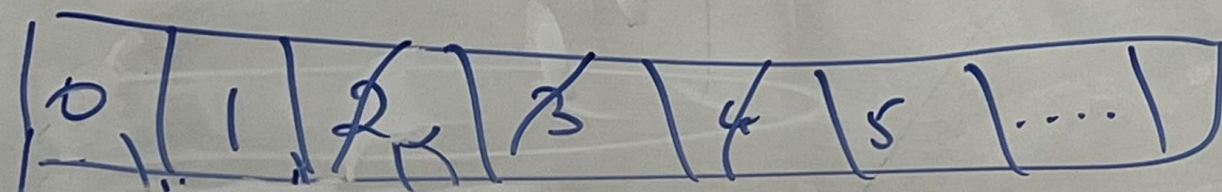
18, 25
T/F
Ver F
Error

Y/T of bit
2 3 7 ...

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- 5 / Double hashing %



Time

Space

$LL \ O(n)$

$A \ O(1)$

LL grows

1000

Node:

key
value.

Find Min element in the stack in $O(1)$ TC.

$[0, 10^6]$

- $O(1)$
- Use Array Index concept
- hashing.
- Collision

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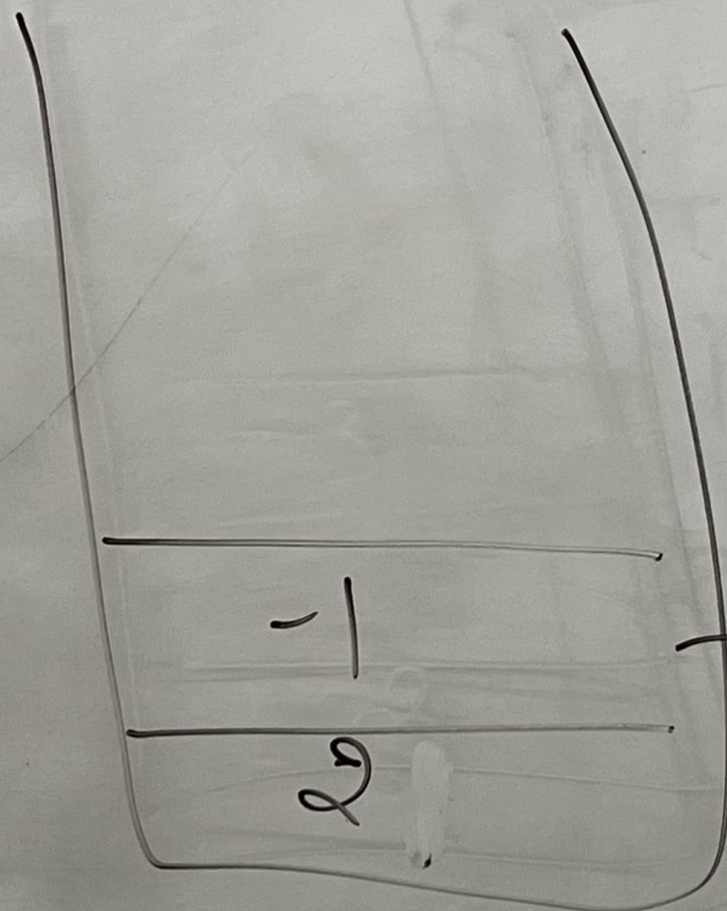
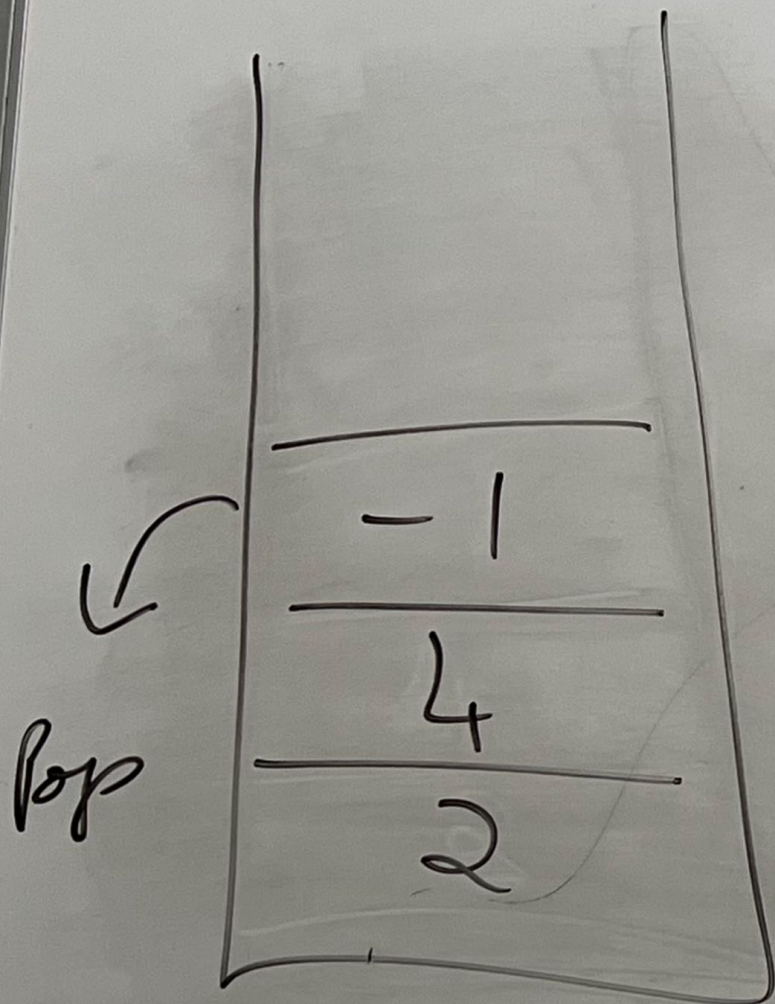
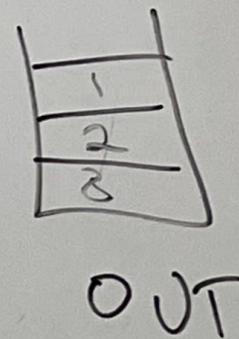
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Find Min element in the stack in $O(1)$ TC



Pop this also

$O(1)$ to Peek Top element

2
4
-1
P.
8
3
-2
Pop
5