

i	append cost	capacity
1	1	1
2	2	2
3	4	4
4	1	4
5	8	8
6	1	8
7	1	8
8	1	8
9	16	16
⋮	⋮	
⋮	1	
⋮	⋮	
17	32	32
⋮	⋮	

+1
 3
 X
 7
 15

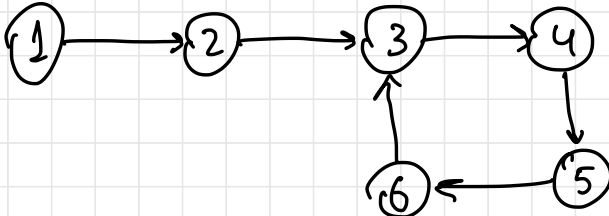
heavy

$$(X+1) \cdot 2 + X = \frac{3X+2}{X+1} \Rightarrow C$$

light

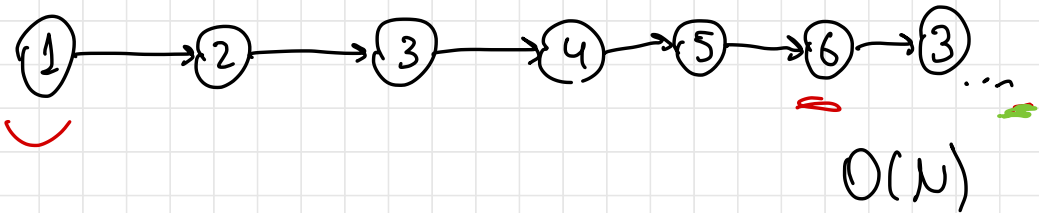
N pas append
 \downarrow
 $\log_2(N)$

head



0x12fe34

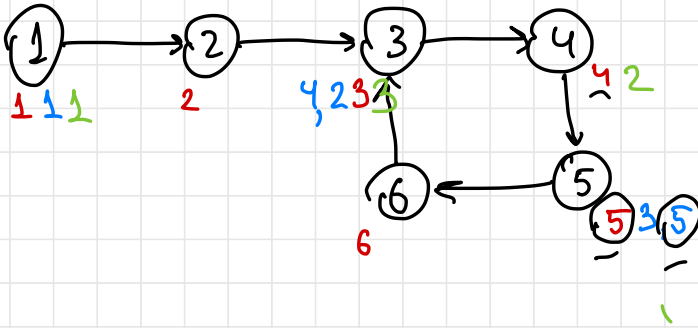
tail



set
 $\{0x1, \dots, 0x3\}$, mem $O(N)$
time $O(N)$

step 1 step 2

time $O(N)$, mem $O(1)$



4
3
2
1



1
2
3
4

INS

5

DEL

2
3
4

1.

ins 1, 2, 3 del del

6. 4 3

1 _____

2.

2
1

3.

3
2
1

4. for i in range(3): $O(N)$

x = s1.pop()
s2.push(x)

1
2
3

 $O(1)$

5.

2
3

 $O(1)$

