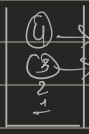
Queue Using Stack ->

FIFO

LIFO



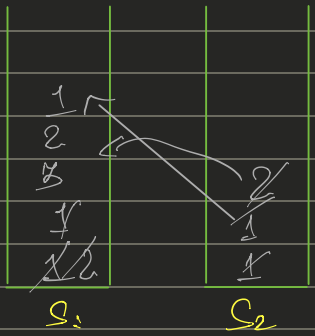
M-1 -> Push (x) ->

S_1 S_2

(1) -> S_1 -> S_2 (push)

(2) -> add x to S_1

(3) -> S_2 -> S_1 (push)



push(1) ✓

push(2) ✓

push(3)

pop S_1 -> 1, 2, 3

Push

TC -> O(n)

SC -> O(n)

Pop & front

TC -> O(1)

M-2 -> Push operation -> O(1)

(1) -> Push (x) -> S_1

pop () -> if (S_2 not empty) {

S_2.pop()

} else {

S_1 -> S_2 (push)

S_2.pop()

}

front () ->

if (S_2 not empty) {

return S_2.top()

} else {

S_1 -> S_2

return S_2.top();

}

Pop & front	Push
TC -> O(n)	TC -> O(1)
SC -> O(n)	

Ex:-

push (1) ✓
push (2) ✓
push (3) ✓
front () -> 1
pop () ✓
front () -> 2
pop () -> ✓