

Stack

<u>pop()</u>	<u>peek()</u>
↳ returns top most element	↳ returns the top most element
↳ Delete the data	

d

top → 3	d	20	
2	c	15	
1	b	10	
0	a	5	

peek() → d

↳ Not delete the data from Stack

Stack

insertion

Queue → FIFO

ADT → enqueue,

dequeue

↳ first in first Out

↳ deletion

	front = 1		rear = 3	
0	1	2	3	4
a	b	c	d	e
↓	↓	↓	↓	↓
a			rear = 2	rear = 4
			rear = 1	

front = -1

rear = -1

front = 0

rear = 0

enqueue

↳ update rear

dequeue

↳ update front

Queue

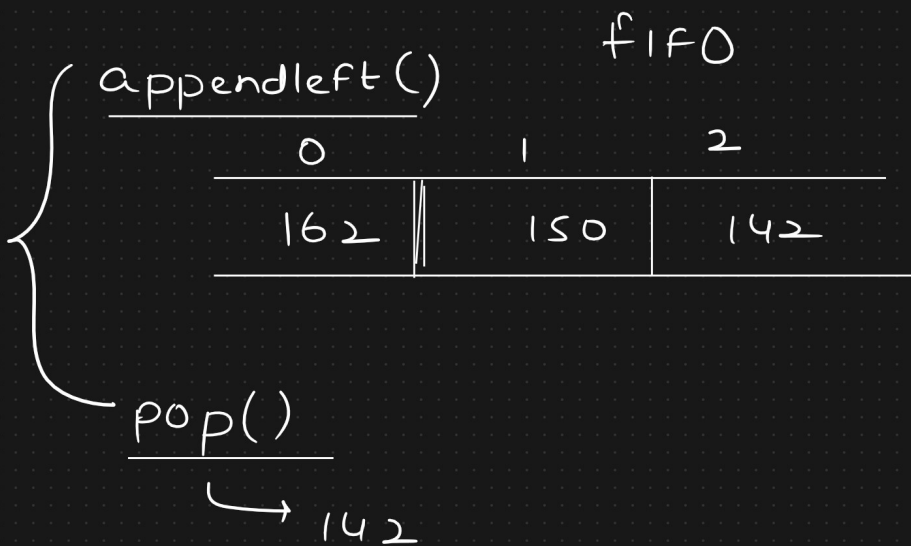
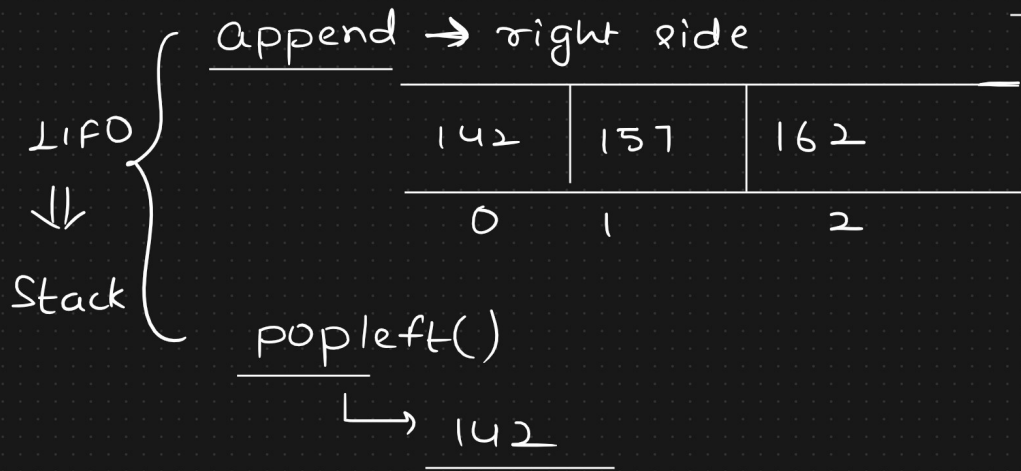
1) Operating System
(Scheduling)

2) Transaction System

3) Ticket counter

4) Stock Price

Queue
fifo



insert(0, 142)
insert(0, 150)

insert(0, 162)

0	1	2
162	150	142

pop()

→ 142

append → insertion right side

pop → delete right side

appendleft → insertion left side

popleft → delete left side

Deque → Module collections

↳ Double Ended Queue

append,
pop

Deque more preferable than List??

↳ **insertion & deletion**

(Both ends)

Stack

Queue

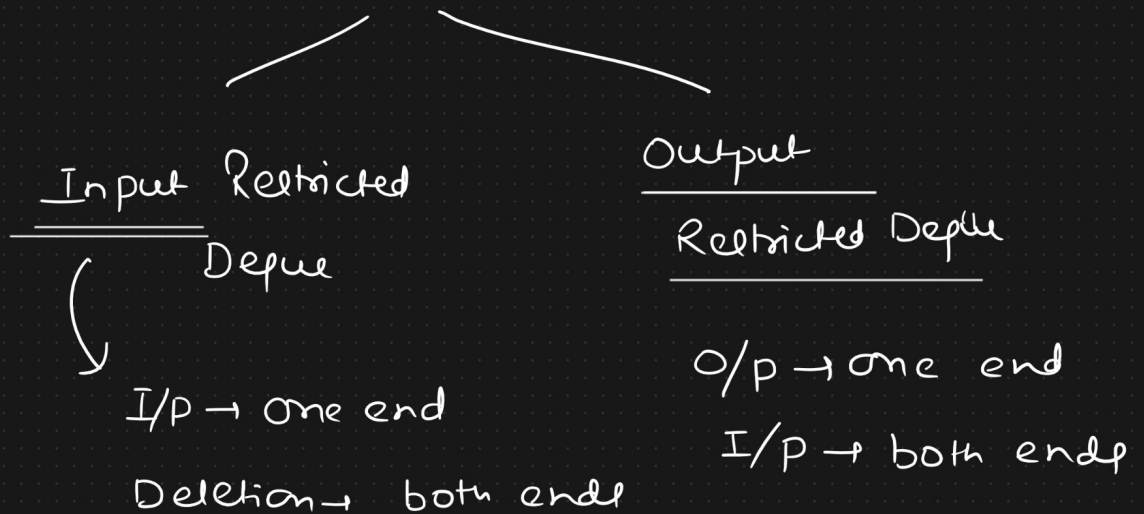
appendleft
&
pop,

append & popleft



{ append → $O(1)$ constant time
pop → $O(1)$ complexity
task

Restricted Deque Input



$\rightarrow 1^{\leftarrow}$
 $\rightarrow 10^{\leftarrow}$
 $\rightarrow 11^{\leftarrow}$
 $\rightarrow 100$
 101
 110
 111
 1000
 1001

$$\underline{\underline{n=10}}$$