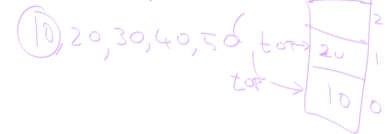


DS/OP	insert	Delete	Search	Sort
array	$O(1)$ / $O(n)$	$O(1)$ / $O(n)$	$O(n)$	$O(n^2)$
LL	$O(1)$ / $O(n)$	$O(1)$ / $O(n)$	$O(n)$	$O(n^2)$
Stack	$O(1)$	$O(1)$	$O(n)$	$O(n)$
Queue	$O(1)$	$O(1)$	$O(n)$	$O(n)$
Hash	$O(1)$	$O(1)$	$O(1)$	$O(n)$
Tree	$O(\log n)$	$O(\log n)$	$O(\log n)$	$O(n)$
Graph	$O(\log n)$	$O(\log n)$	$O(\log n)$	$O(n)$

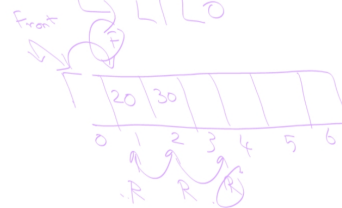
Stack

→ FIFO
→ LIFO

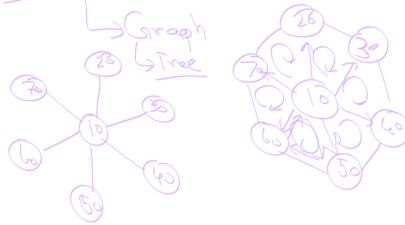


Queue

→ FIFO
→ LIFO



Non Linear DS



Types

- 1) Fixed
- 2) Dynamic

Implement a Stack

- array
- linked list
- Queue / DeQueue

Operations

- 1) Push → insert
- 2) Pop → Delete
- 3) Peek → view top element

- is full
- is empty