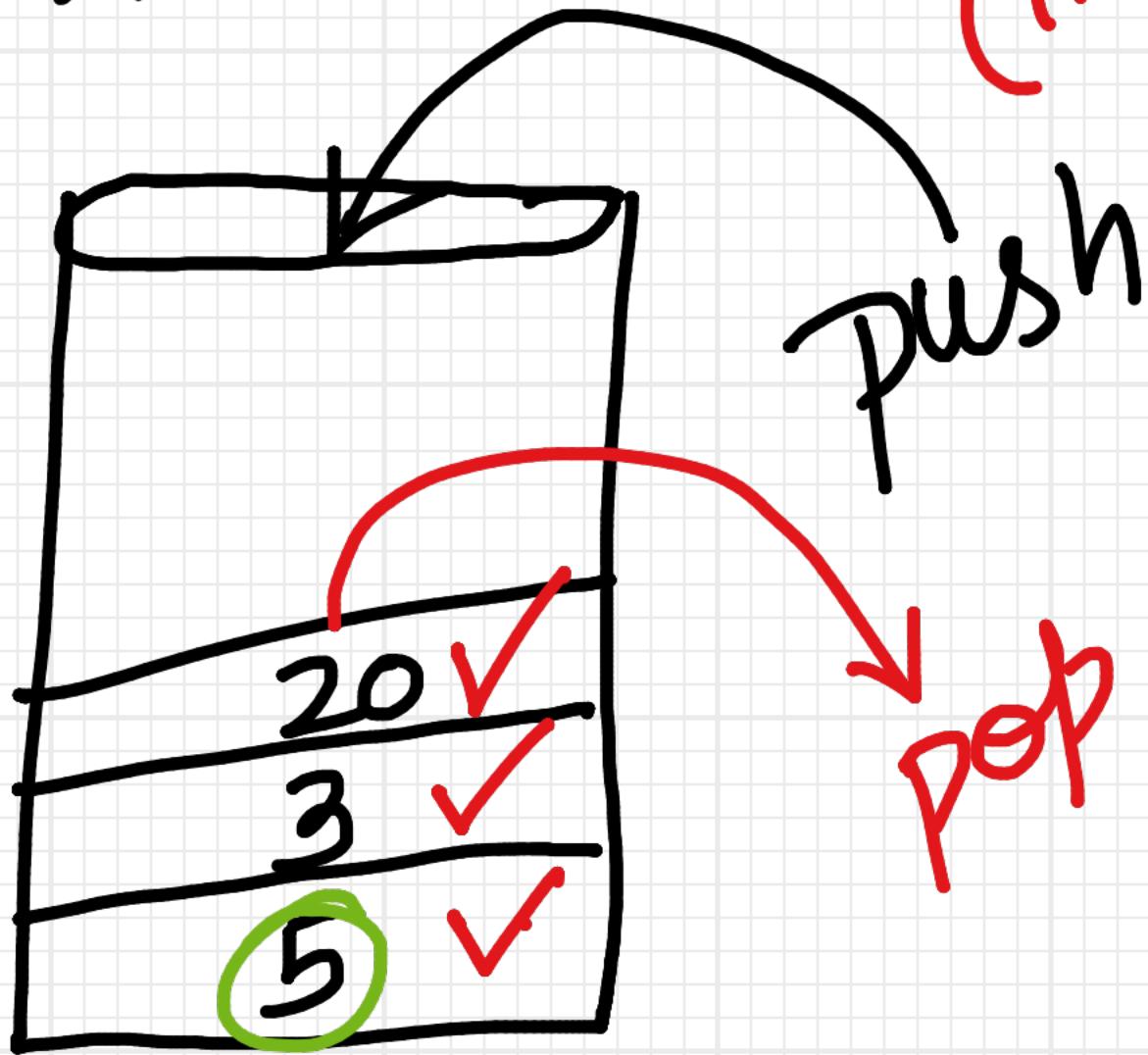


# # Stack

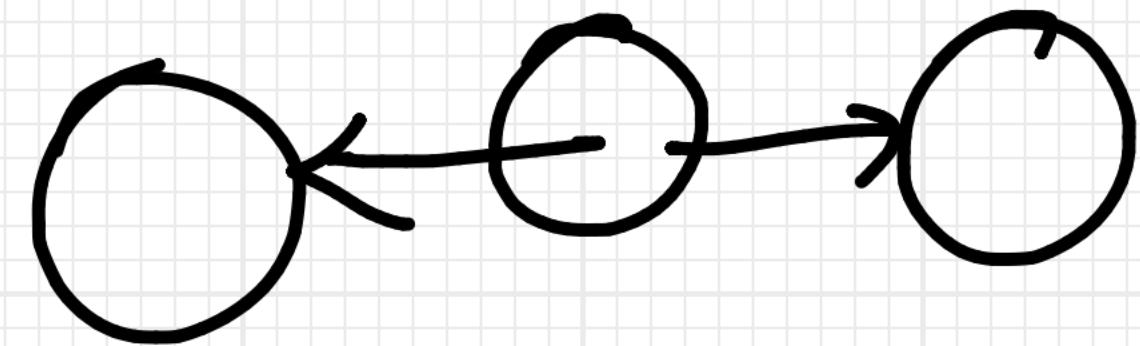
→ Linear DS

(in)



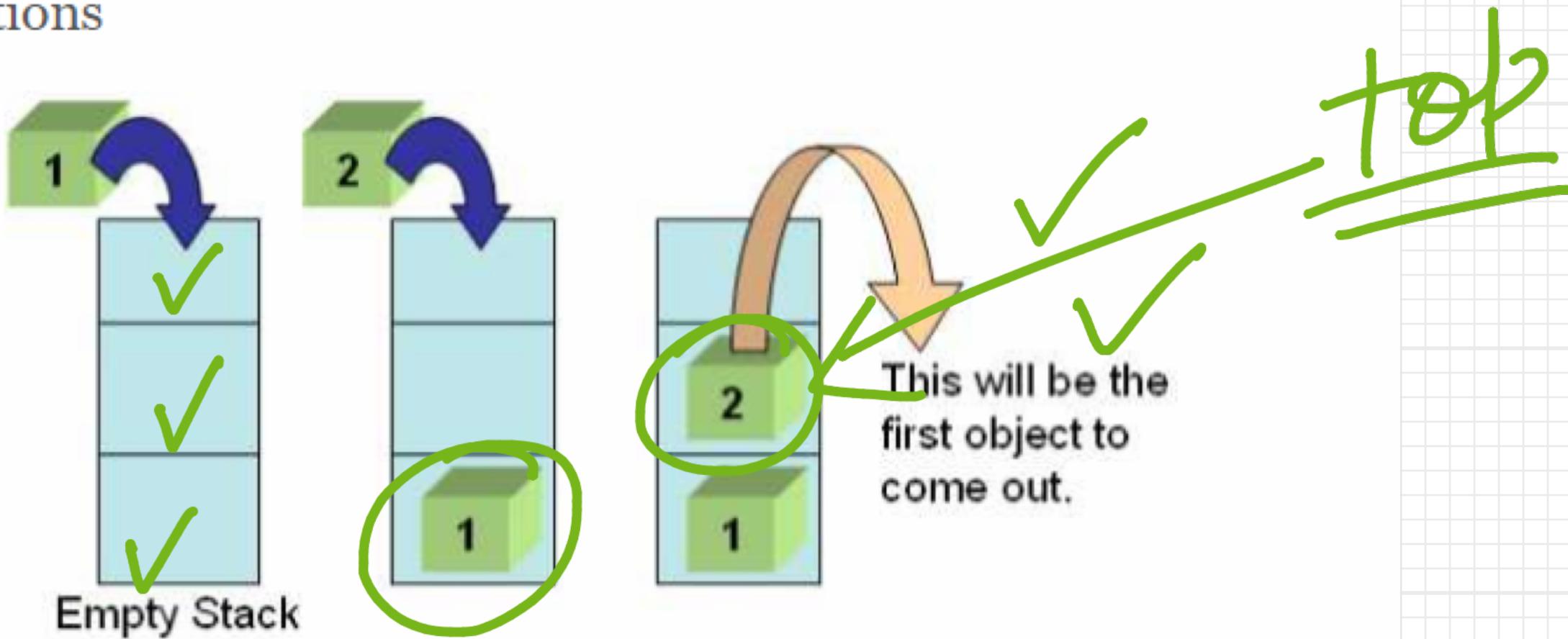
FIFO

First IN Last OUT



20 can be  
deleted at  
any moment  
(getting something  
out) LIFO  
Last IN First OUT

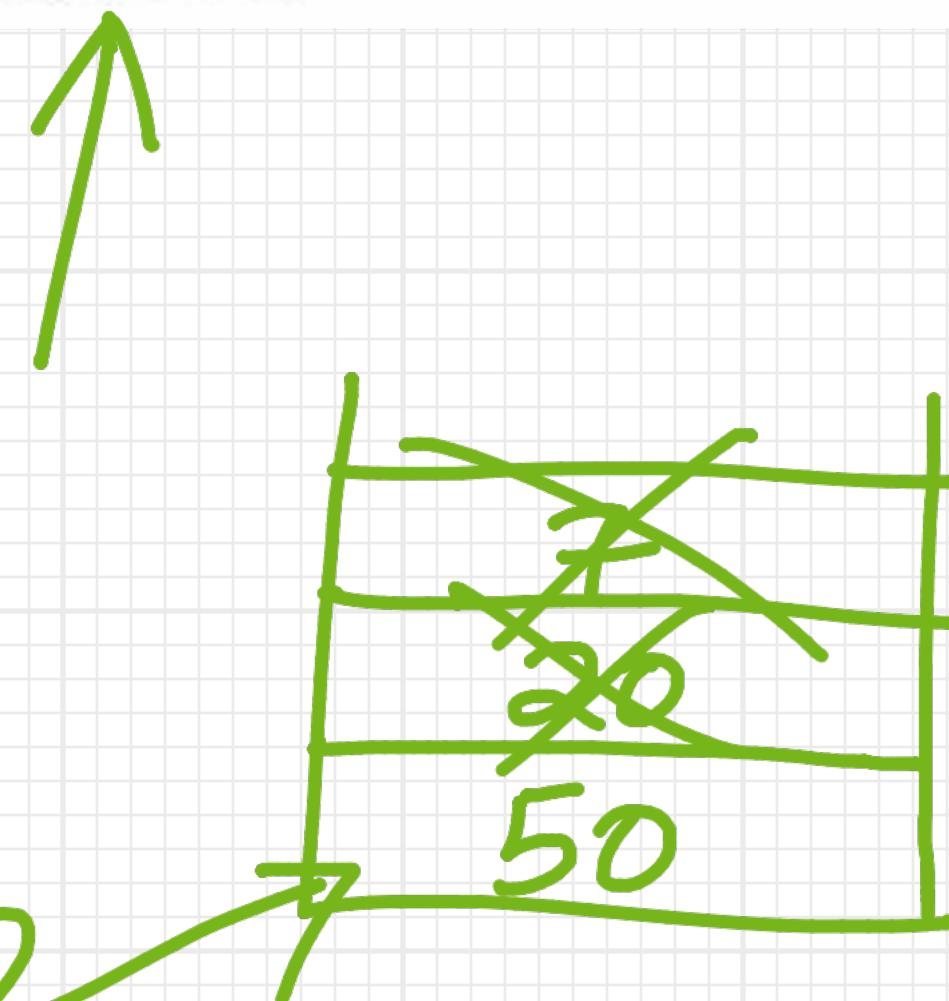
## Stack Operations



push(1)

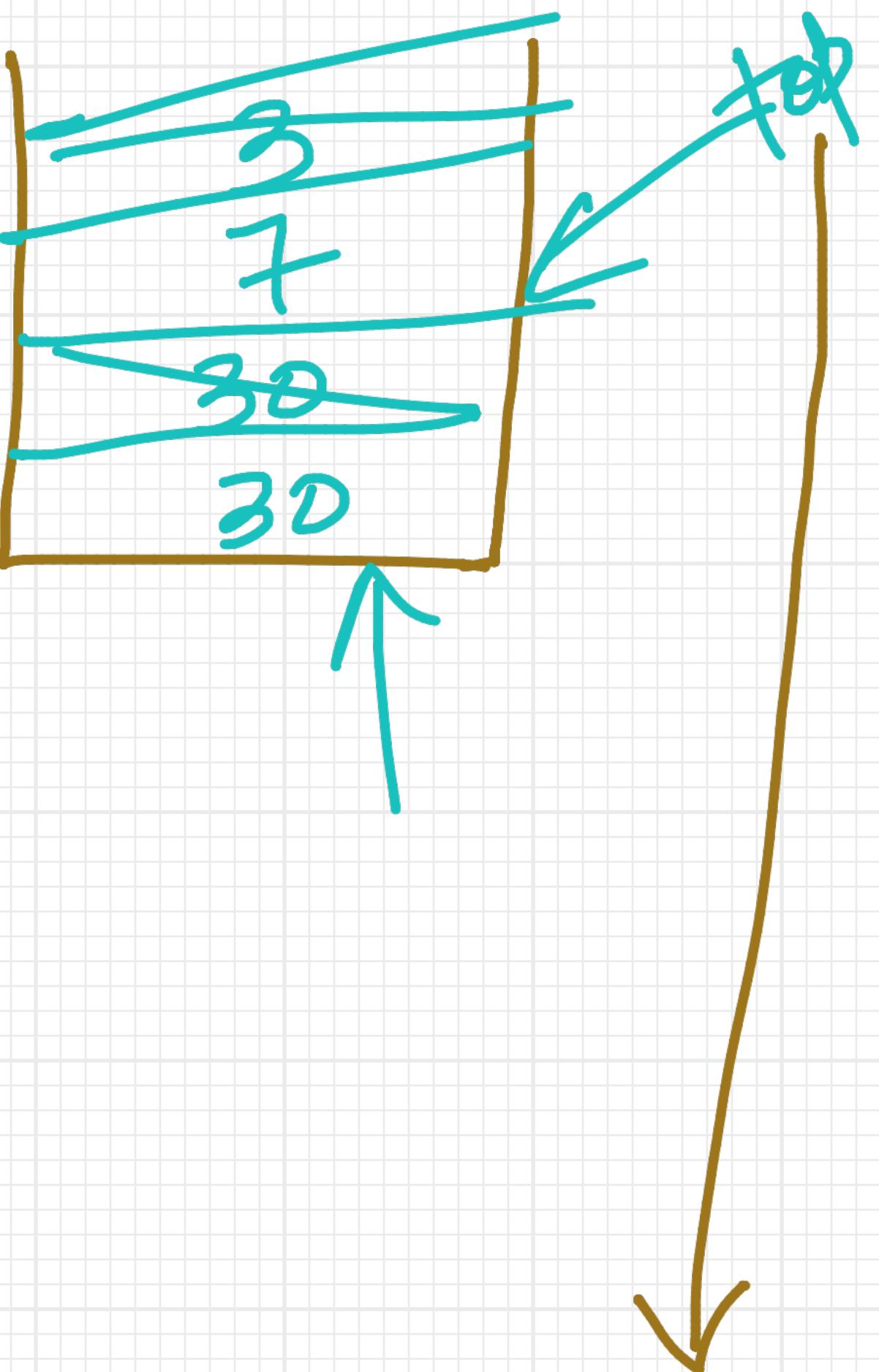
push(2)

Pop() top



Pop()  
Pop()}

Where will  
be top?



push(30)

push(30)

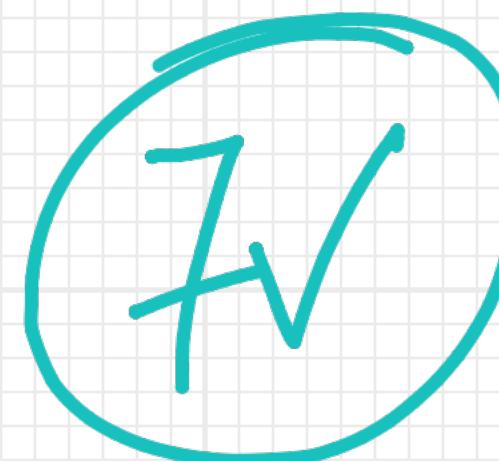
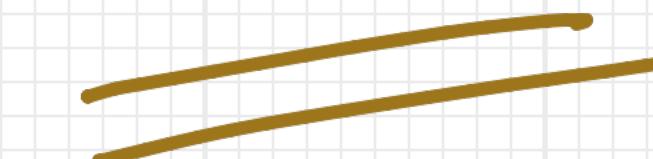
pop()

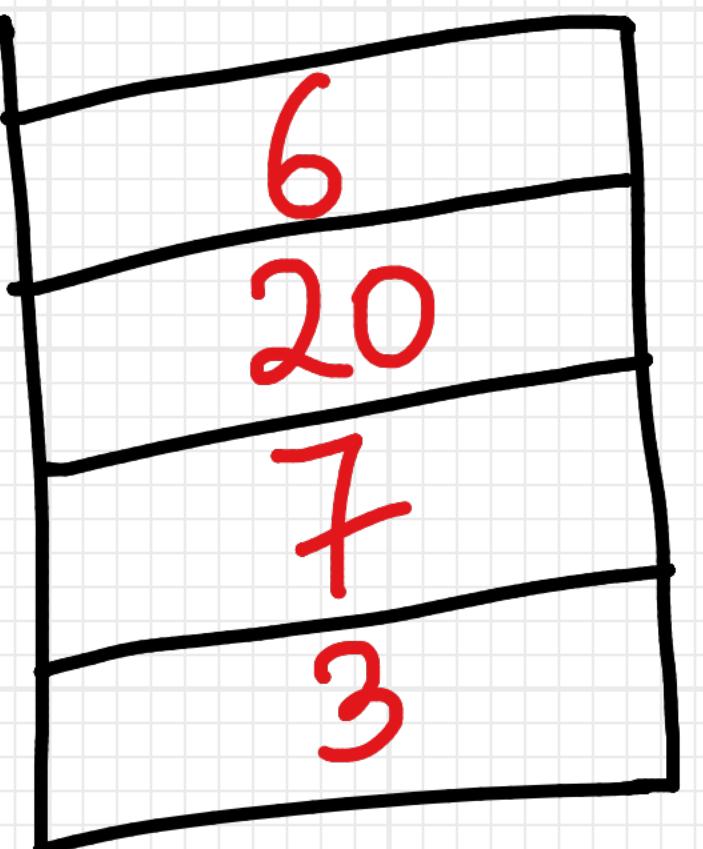
push(7) ✓

~~push(3)~~

pop()

top ?





size = 4

ERROR  
STACKOVERFLOW

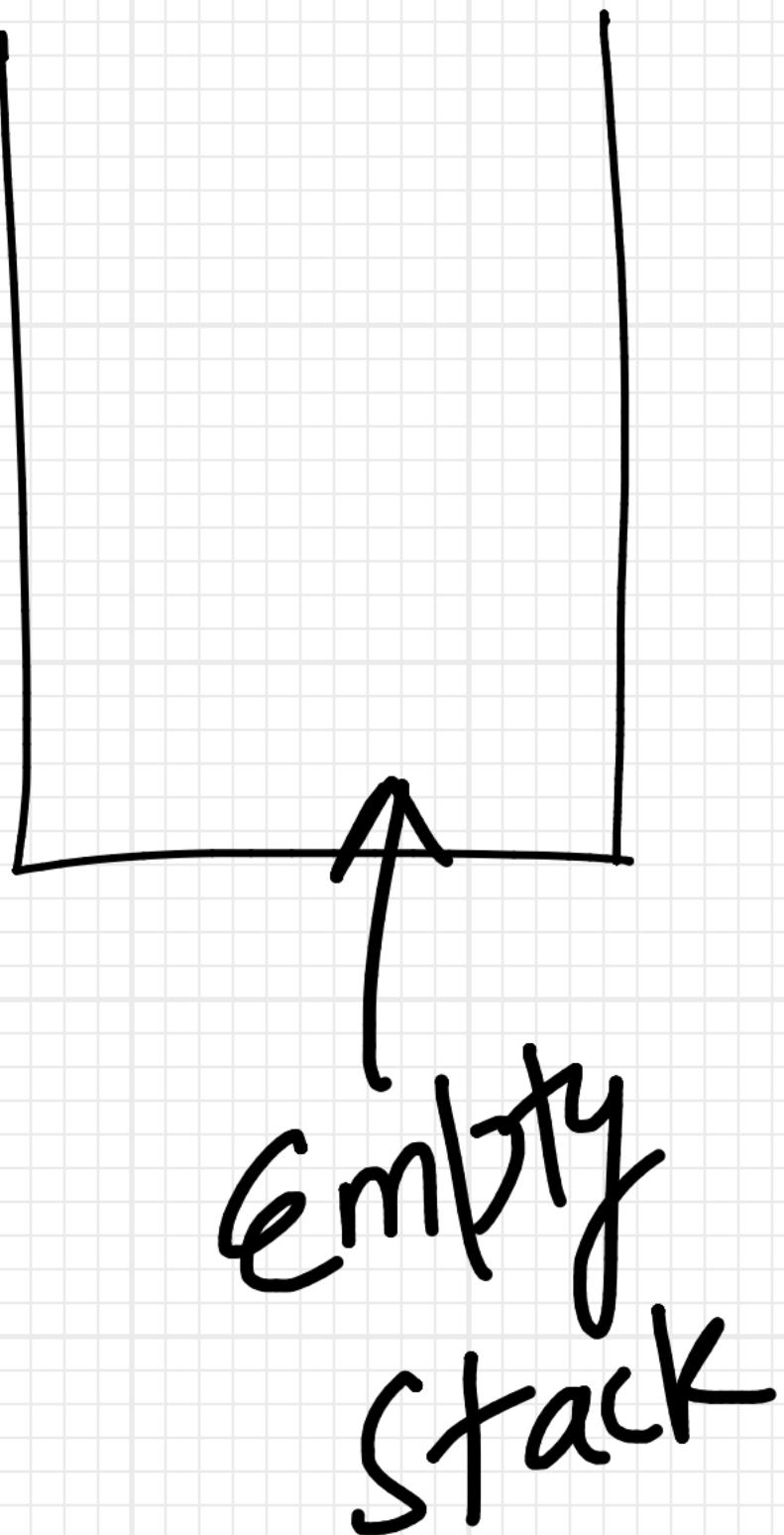
push(5)

push(3)  
push(7)  
push(20)  
push(6)

Stack is full at  
this moment



stackoverflow



Pop()

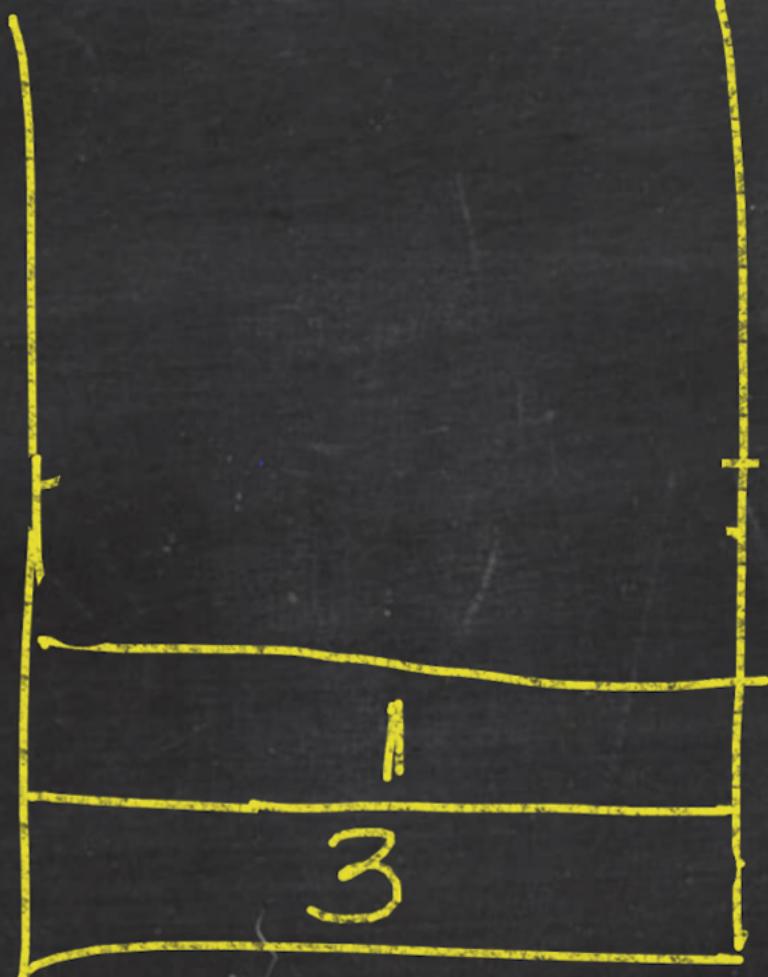
↑

ERROR

underflow.

\* Hint  
→ Another ~~Stack~~ Max Stack Question whole stack

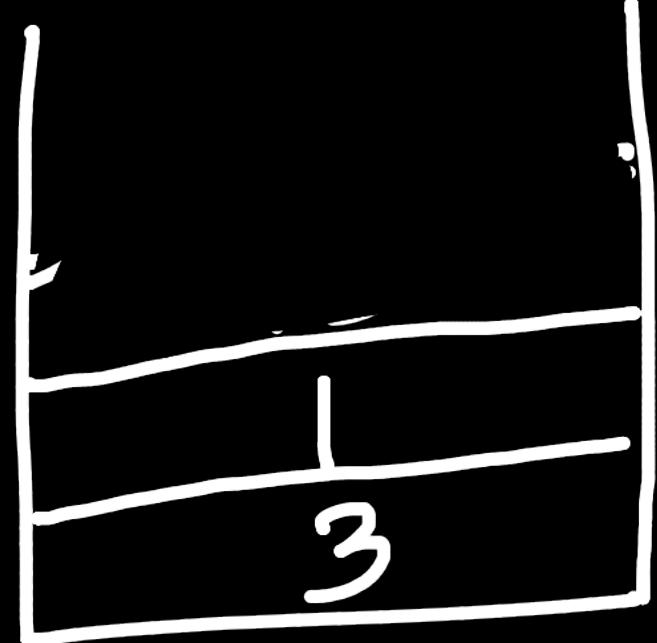
NOTE ⇒ You can not go through <sup>1 to find</sup> out max()



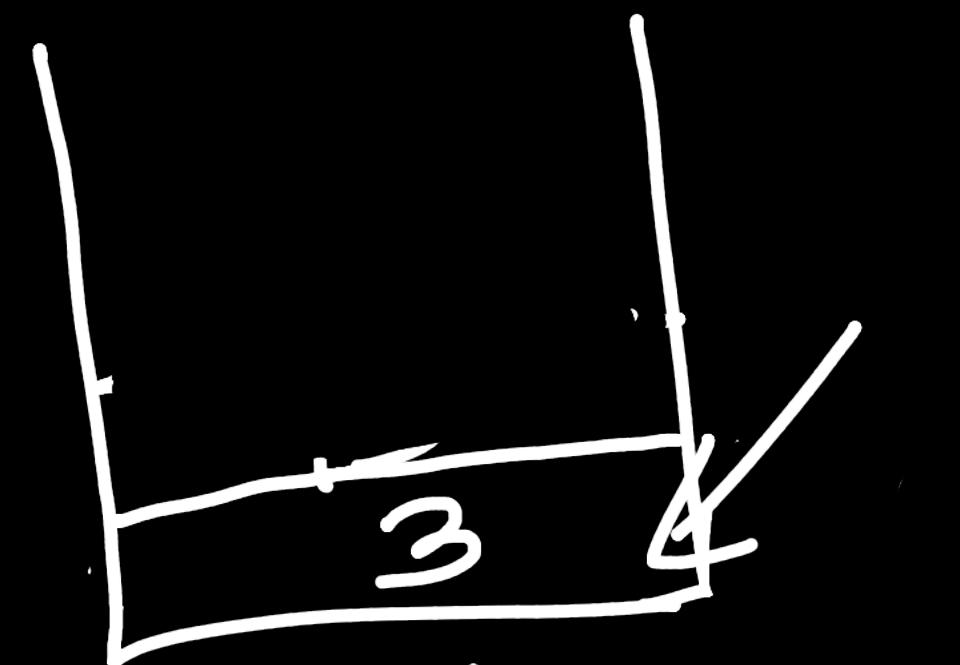
Main  
stack

- ①  $\max() = \text{None}$
- ②  $\text{push}(3)$
- ③  $\max() = 3$
- ④  $\text{push}(1)$
- ⑤  $\max() = 3$
- ⑥  $\text{push}(3)$
- ⑦  $\max() = 3$

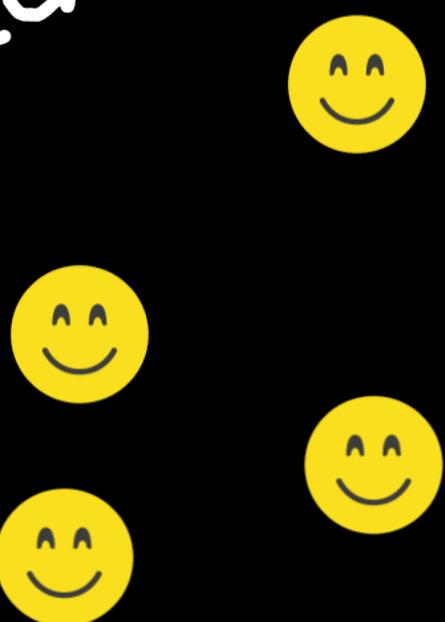
- ⑧  $\text{pop}()$
- ⑨  $\max() = 3$
- ⑩  $\text{push}(13)$
- ⑪  $\max() = 13$
- ⑫  $\text{pop}()$
- ⑬  $\max() = 3$



Main  
Stack



Kelp  
Stack



`max() = None`

`max() = 3`

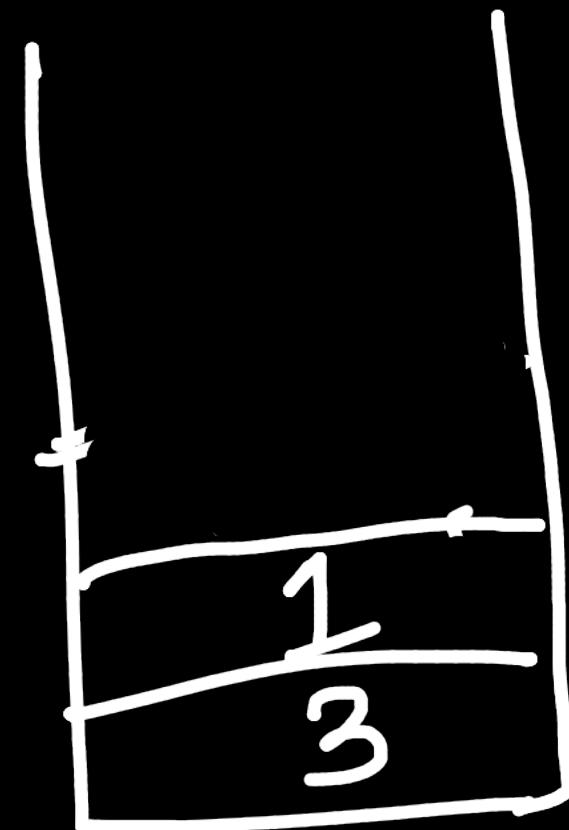
`max() = 3`

`max() = 3`

`max() = 3`

`max() = 13`

`max() = 3`



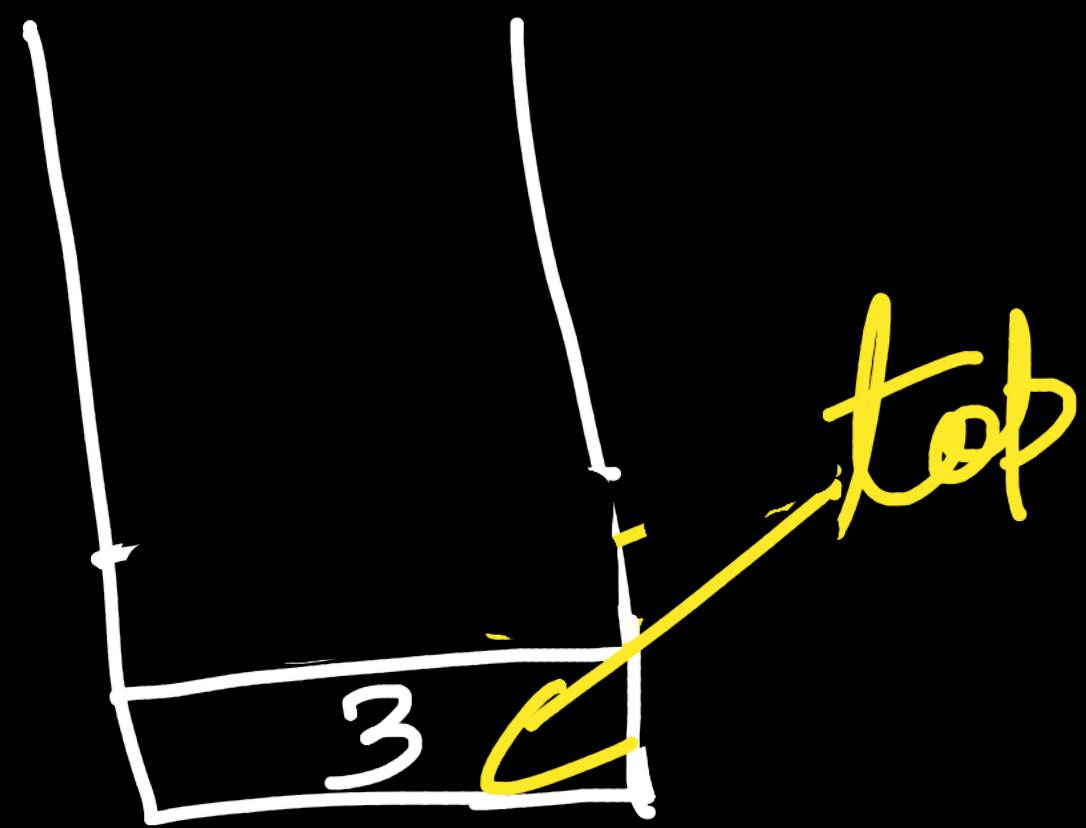
main  
stack

push(13)

max() = 13

pop()

max() = 3



kelp  
stack

max() = None.

push(3)

max() = 3

push(1)

max() = 3

push(3)

max() = 3

pop()

max() = 3