

Abstract Data Type



- 1) Push → insert the elements inside the elements
- 2) Pop → delete the elements from the stack

Stack

↳ LIFO

↳ Last In first Out

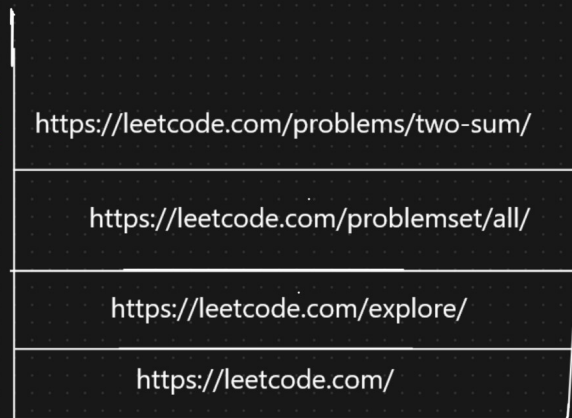
OR

FIFO

↳ first In Last Out

Push → top variable

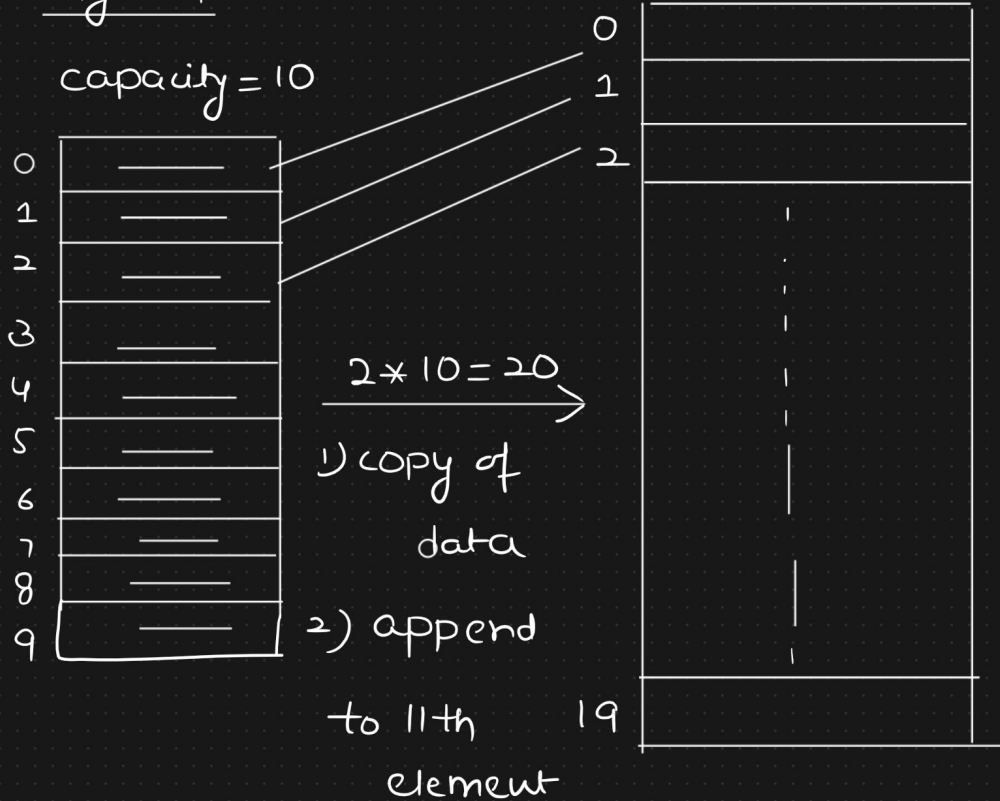
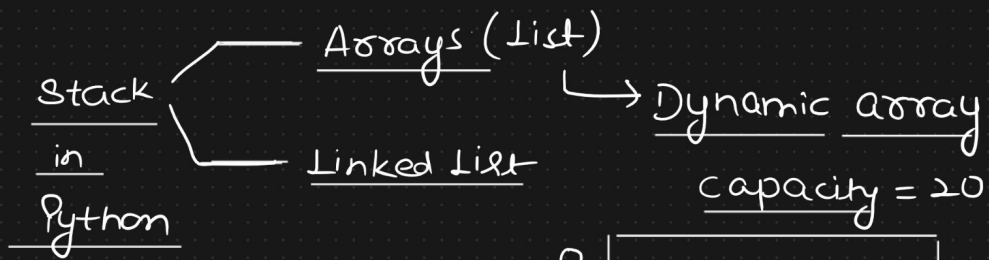
top →



Stack Data Structure

undo → Ctrl+Z (LIFO)

function calling → Recursion



Push → Static array

$O(1)$  ← push(arr, data):

↓↓

constant time  
operation

if  $top == n$ :

↳ Stack Overflow

else:

$top = top + 1$

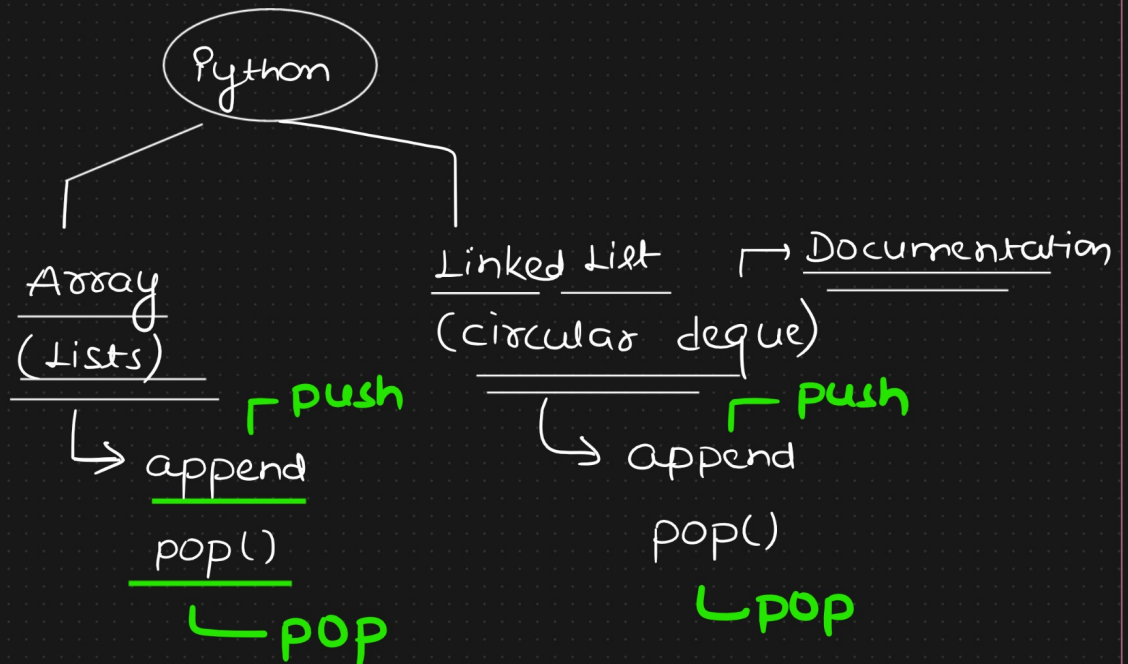
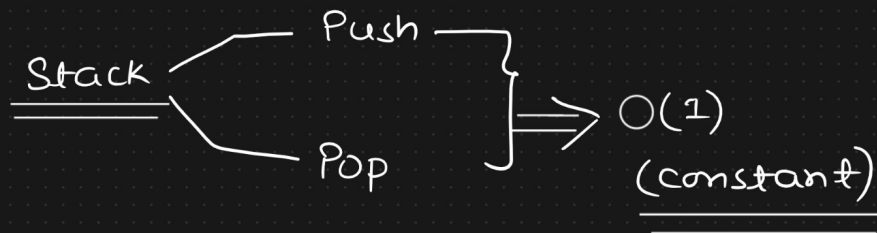
$arr[top] = data$

## Pop

Pseudocode

pop(): └ stack is empty  
if top == -1:  
    print("Stack underflow")  
else:  
    data = arr[top]  
    top -= 1  
return data

$O(1)$   $\Leftarrow$   
└ constant



peek  $\rightarrow$  Similar to pop  
(Deletion of data  
not happened)