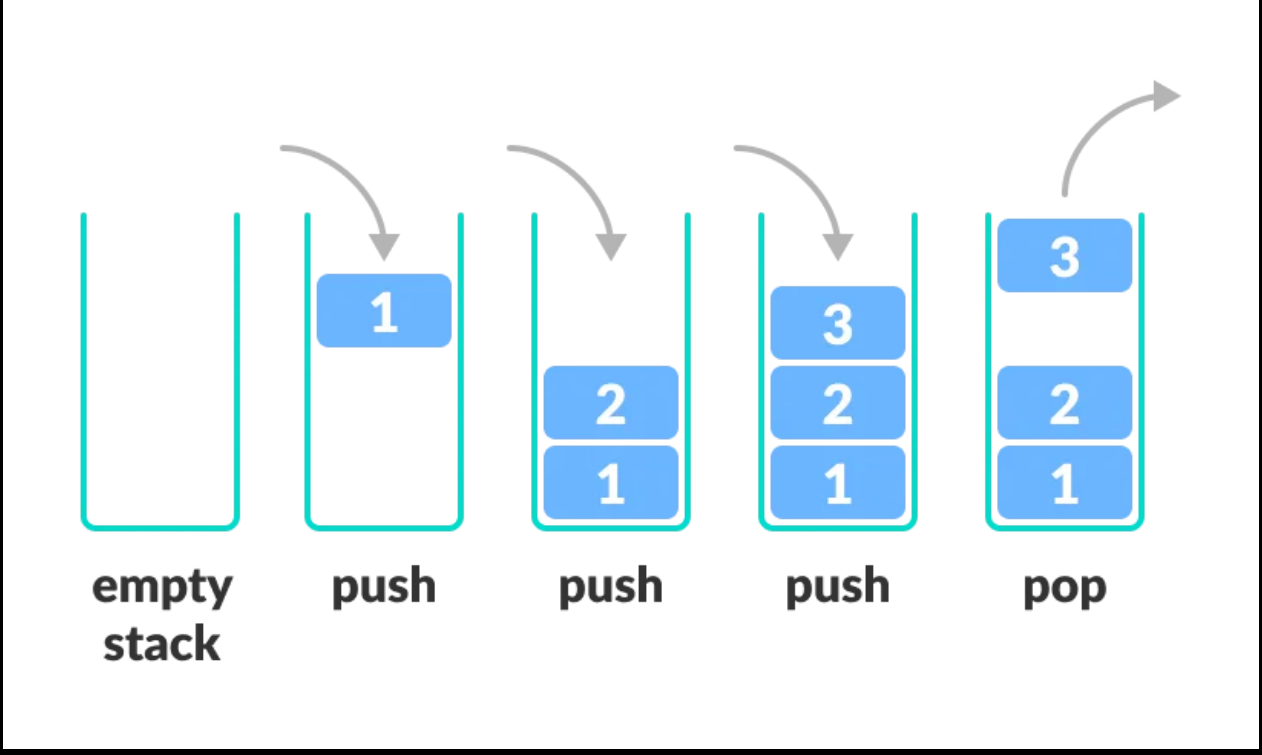
About (Using Linked List)

A stack is a linear data structure that follows the principle of Last In First Out (LIFO). This means the last element inserted inside the stack is removed first.

1. A Stack is a linear data structure that follows the **LIFO (Last-In-First-Out)** principle. Stack has one end, that is It contains only one pointer **top pointer** pointing to the topmost element of the stack.
2. Whenever an element is added in the stack, it is added on the top of the stack, and the element can be deleted only from the stack. In other words, a ***stack can be defined as a container in which insertion and deletion can be done from the one end known as the top of the stack.***
3. To add it has one method Push which add it to topmost in stack O(1)
4. To add it has one method Pop which remove the topmost element in stack O(1)



Benefit of using Linked List over array for implementing Stack

It has unlimited size

push()

Adding element to top most
Big O: O(1) constant

pop()

Removing element from top
Big O: O(1) constant

peek()

Just to see the topmost element and not removing it
Big O: O(1) constant

isEmpty()

To check whether the Stack is empty or not
Big O: O(1) constant

count()

To return the count of the stack
Big O: O(1) constant

References

Programiz
Geeksforgeeks
Javatpoint