

- Stack Theory [Last in first out DS]: Pile of data

Speciality - add/remove/view top = $O(1)$ element where is array takes $O(n)$

To traverse stack:

- a. If Stack is built using an array then we can.
- b. If Stack is built using a linked list then we can not.
- c. If Stack is built using STL stack then we can not.

Real Life Application :

- a. $(1+3) \times 5 / 3 - (3 \times 6)$ - to evaluate expressions we can use stack.
- b. Regular Bracket matching $((((()))$

- Stack Using Array Theory

Static / Dynamic Array can be used to build Stack but static not good

- a. Top most element $O(1)$
- b. Delete top (pop) $O(1)$
- c. Add to top (push) $O(1)$
- d. If Stack size > array size: Increase Array size [Dynamic Only]

- Stack Implementation Using Satic Array
- Stack Implementation Using Dynamic Array
- Stack Using Linked List Theory
- Stack Implementation Using Linked List