What is Stack ?

Sayam · Oct 7, 2022 · 2 min read

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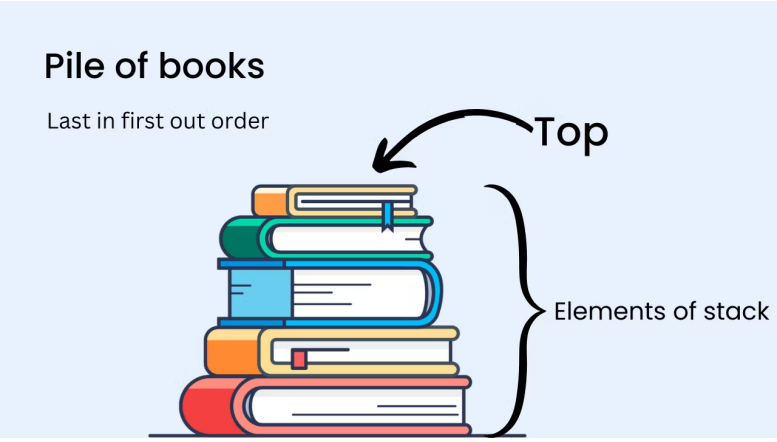
Stack

- A stack is a linear data structure, where "linear" refers to the order in which the items are arranged. The two operations that can be performed on a stack data structure are push and pop. Push operation adds an element to the top of the stack, while pop action removes an element from the top of the stack.
- In stack elements are stored in Last in First Out Order , that means elements are added to the top of the stack and remove from top of the stack.
- Example - Pile of books



Advantages of Stack

- It is used in many virtual machines such as jvm.
- Stacks allows control allocation of memory and deallocation.
- Stack helps in data management.
- Stack helps in systematic memory management.

Disadvantages of Stack

- Stack memory has limited size.
- Total size must be defined in advance.
- Random access is not possible on the stack.
- The stack will fall outside of the memory area, which might lead to an abnormal termination.

Common Stack Operations

- **push()**: A push is the action of adding an element to a stack. The overflow circumstance occurs when the stack is full or finished.
- **pop()**: Deleting an element from a stack is referred to as a pop. The absence of any element indicates that the stack is empty. The underflow state is what we refer to as here.
- **isFull()**: It aids in determining whether or not the stack is full.
- **isEmpty()**: This function aids in determining whether or not the stack is empty.
- **peek()**: returns the element at the specified location.
- **count()**: This function is used to determine how many elements are present in a stack overall.
- **display()**: This method is used to print every element in the stack.

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