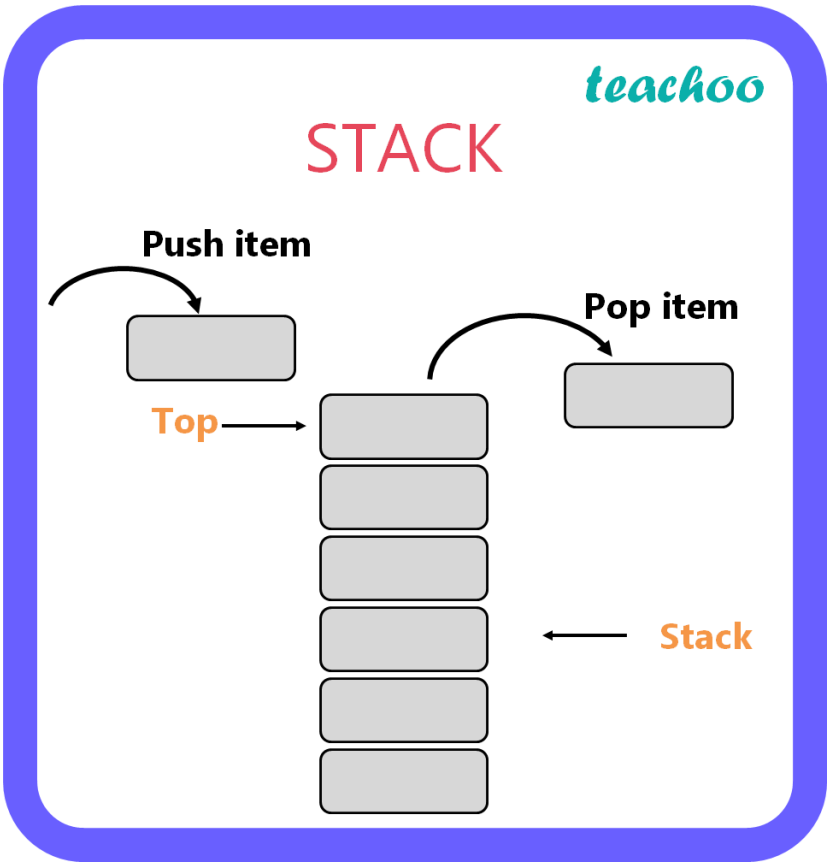
Stack Data Structure :

A stack is a linear data structure that follows the Last In, First Out (LIFO) principle. This means that the last element added to the stack will be the first one to be removed. You can visualize it as a stack of plates: you add (push) plates to the top and remove (pop) the topmost plate first.



Key operations in stack :

1. **Push**: Add an element to the top of the stack.
2. **Pop**: Remove the top element from the stack.
3. **Top/Peek**: Retrieve the top element without removing it.
4. **Empty**: Check if the stack is empty.
5. **Size**: Get the number of elements in the stack.

Stack in C++ STL :

The Standard Template Library (STL) in C++ provides a ready-to-use stack container. It encapsulates the stack operations and makes it easy to use.

For more information on stack STL, you can visit :

Stack in C++ STL - GeeksforGeeks

Use Cases of Stacks :

- **Function Call Management**: Stacks are used to keep track of function calls in recursion.
- **Expression Evaluation**: Infix, prefix, and postfix expressions are evaluated using stacks.
- **Syntax Parsing**: Compilers use stacks for syntax parsing and processing nested structures.
- **Backtracking**: Stacks are essential in algorithms that involve backtracking, like maze solvers and depth-first search (DFS).

Important Links :

1) **Working of Stack Data Structure :**

   Stack Data Structure and Implementation in C/C++

Here are some solved examples for some questions on Stacks
Leetcode 344 - Reverse a String
This might seem like a simple question but I recommend trying it using stacks.
Stack | Set 3 (Reverse a string using stack) | GeeksforGeeks

Also another great video to watch is :
Stack | Set 4 (Evaluation of Postfix Expression) | GeeksforGeeks

LeetCode 901 - Stock Span
This is a fairly difficult problem but explains concept in great detail.
The Stock Span Problem | GeeksforGeeks

2) **Problems on Stacks :**

Top 50 Problems on Stack Data Structure asked in SDE Interviews - GeeksforGeeks

For further reading :

- Stack and Queue | take U forward
- Stack | Data Structures & Algorithms | Programming Tutorials | GeeksforGeeks - YouTube