

<Codeshows/>

Module 5

STACK | QUEUE | BIT MANIPULATION

01

Stack



Stack is a linear data structure which follows a particular order in which the operations are performed. The order may be LIFO(Last In First Out) or FILO(First In Last Out).

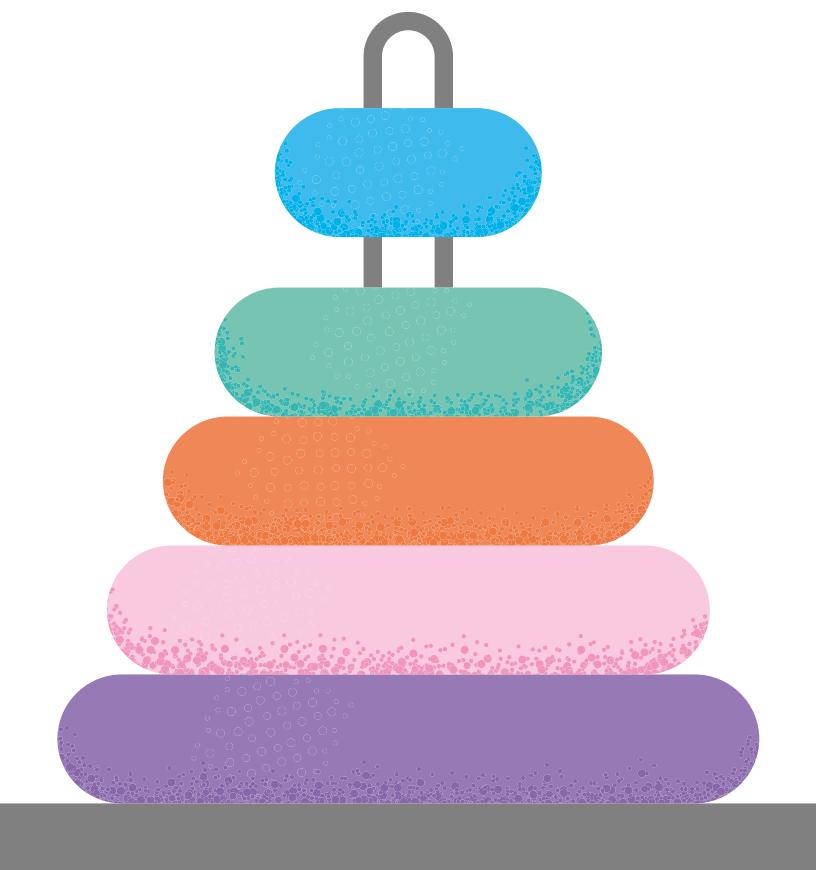


What is it?

About Stack DS

Practise Problem

- [Implement Stack from Scratch](#)
- [Implement Queue from Scratch](#)
- [Implement 2 stacks in an array](#)
- [find the middle element of a stack](#)
- [Implement "N" stacks in an Array](#)
- [Check the expression has valid or Balanced parenthesis or not.](#)
- [Reverse a String using Stack](#)
- [Design a Stack that supports getMin\(\) in O\(1\) time and O\(1\) extra space.](#)
- [Find the next Greater element](#)
- [The celebrity Problem](#)
- [Arithmetic Expression evaluation](#)



02

QUEUE



A Queue is a linear structure which follows a particular order in which the operations are performed.

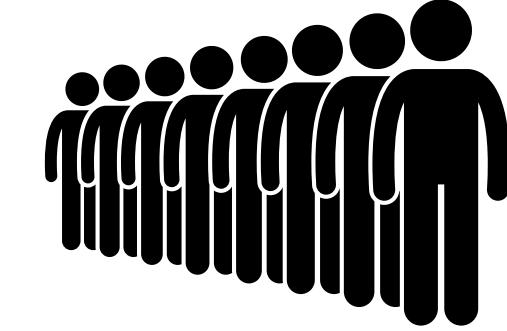
The order is First In First Out (FIFO).

A good example of a queue is any queue of consumers for a resource where the consumer that came first is served first.

“
Don’t practice until you get it
right. Practice until you can’t get
it wrong
”



Practise



- [Implement Stack using Queue](#)
- [Implement Stack using Deque](#)
- [Stack Permutations \(Check if an array is stack permutation of other\)](#)
- [Implement Queue using Stack](#)
- [Implement "n" queue in an array](#)
- [Implement a Circular queue](#)
- [LRU Cache Implementation](#)
- [Reverse a Queue using recursion](#)
- [Reverse the first “K” elements of a queue](#)
- [Interleave the first half of the queue with second half](#)
- [Find the first circular tour that visits all Petrol Pumps](#)
- [Minimum time required to rot all oranges](#)
- [Distance of nearest cell having 1 in a binary matrix](#)
- [First negative integer in every window of size “k”](#)
- [Check if all levels of two trees are anagrams or not.](#)
- [Sum of minimum and maximum elements of all subarrays of size “k”.](#)
- [Minimum sum of squares of character counts in a given string after removing “k” characters.](#)
- [Queue based approach or first non-repeating character in a stream.](#)

03

BIT MANIPULATION

Operations with bits are used in Data compression (data is compressed by converting it from one representation to another, to reduce the space) ,Exclusive-Or Encryption (an algorithm to encrypt the data for safety issues). In order to encode, decode or compress files we have to extract the data at bit level. Bitwise Operations are faster and closer to the system and sometimes optimize the program to a good level.

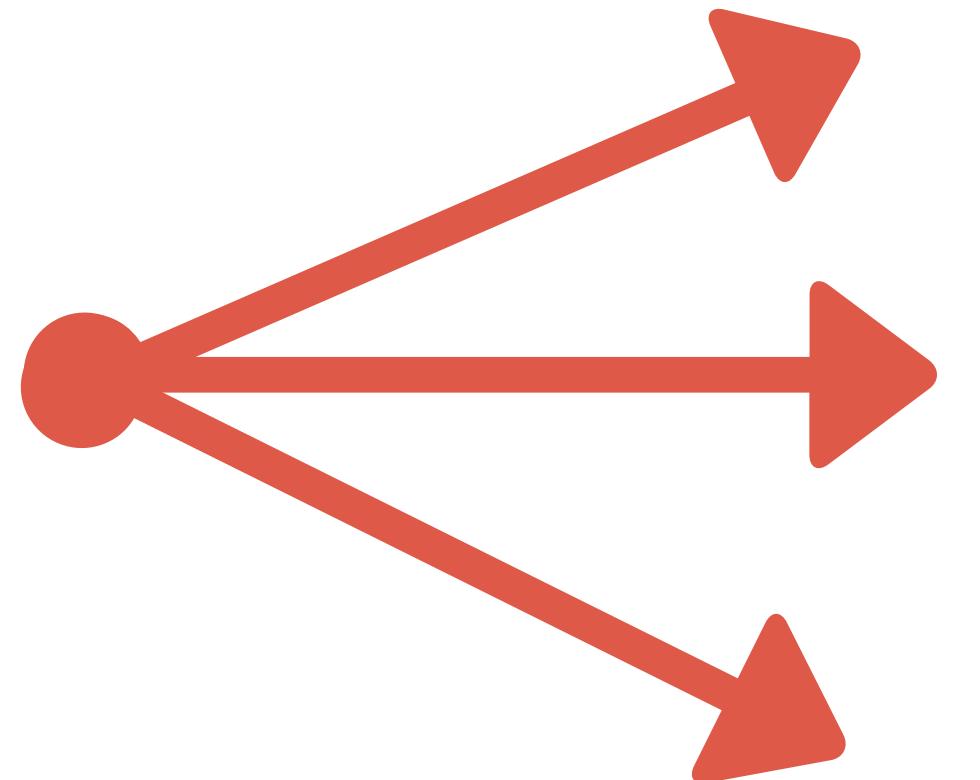
32 BIT

& >> ^ | <<

READ

Bit Manipulation

Problems



Easy.

Medium

Hard



Still have time
before contest?



Extra Content:



- BFS & DFS
- Difference Between BFS & DFS
- BFS
- DFS

Well Done !



"
ALL THE BEST FOR CONTEST
"

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