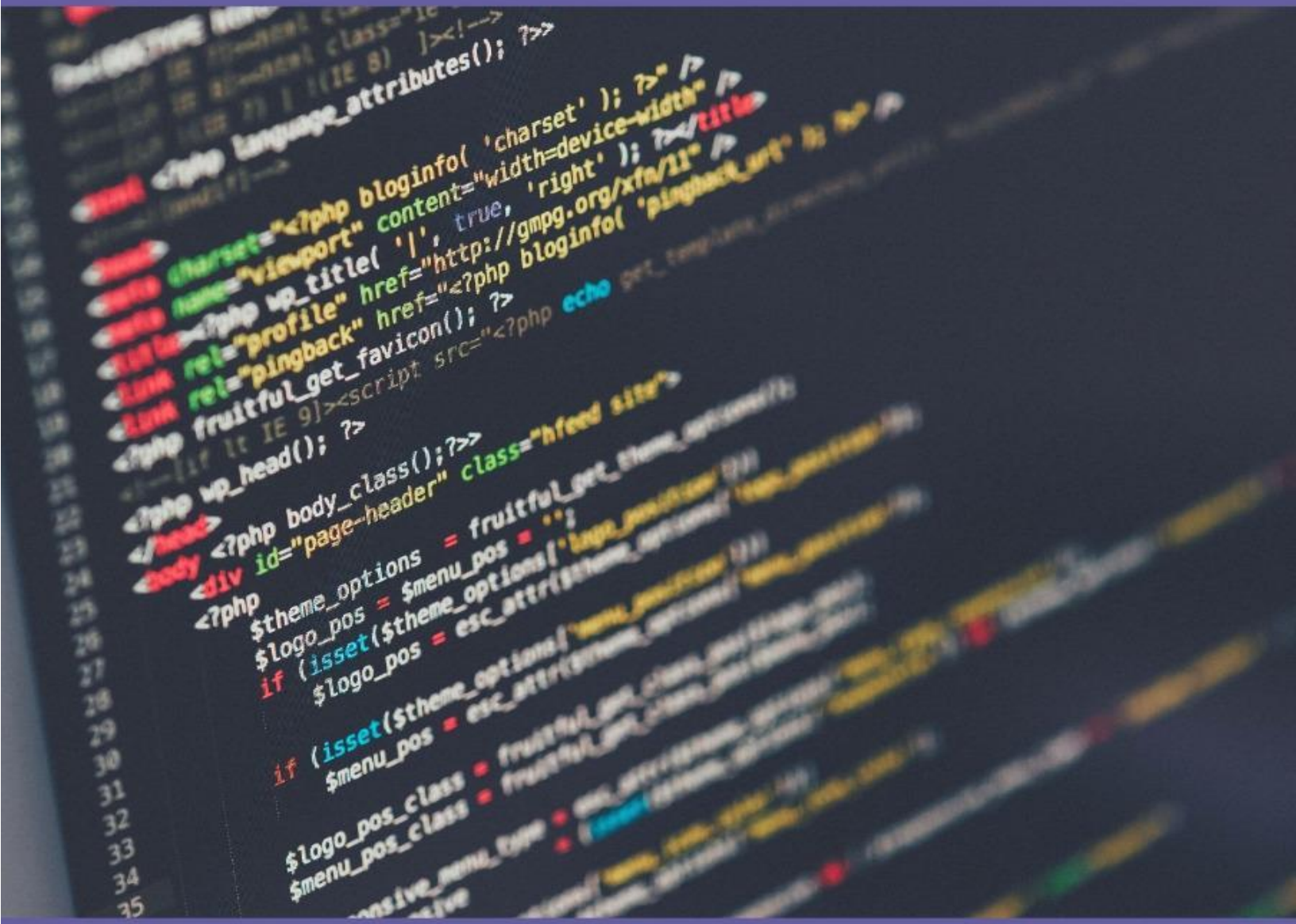
acm - CEG

Student Chapter

C.O.D.E



INTERNSHIP AND PLACEMENT PREPARATION MATERIAL

STACK AND QUEUE

STACK

A stack is a conceptual data structure which stores a set of homogeneous elements based on LIFO principle. It is a commonly used abstract data type. The **stack** concept is used in programming and memory organization in computers.

Nearly 17% of companies test on this Data Structure. Although direct implementation of mere stack may not be asked. Certain problems were that the usage of stack improved the efficiency.

Never heard about stack!
No worries, Here you go.!

https://www.geeksforgeeks.org/stack-data-structure/

https://www.geeksforgeeks.org/stack-data-structure-introduction-program/

https://www.youtube.com/watch?v=vZEuSFXSMDI&list=PLqM7alHXFySF7Lap-wi5qlaD8OEBx9RMV&index=2&ab_channel=GeeksforGeeks - Introduction

Now that you know the implementation of stack!

Here is a way to use the stack functions by just calling them! Yes **STL**!!!!!

https://www.geeksforgeeks.org/stack-in-cpp-stl/

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).The difference between stacks and **queues** is in removing.

Nearly 17%of companies test on this data structure:

Introduction:

https://www.geeksforgeeks.org/queue-data-structure/

https://www.geeksforgeeks.org/priority-queue-set-1-introduction/

https://www.geeksforgeeks.org/circular-queue-set-1-introduction-array-implementation/

https://www.youtube.com/watch?v=q5oOYxfOD1c&list=PLqM7alHXFySG6wgjVeEat_ouTIi0IBQ6D&index=2&ab_channel=GeeksforGeeks - Introduction

https://www.youtube.com/watch?v=C6KjYbAarYI&list=PLqM7alHXFySG6wgjVeEat_ouTIi0IBQ6D&index=3&ab_channel=GeeksforGeeks - Implementation

Using STL:

https://www.geeksforgeeks.org/queue-cpp-stl/

Day 1:

Introduction

Easy:

https://practice.geeksforgeeks.org/problems/reverse-a-string-using-stack/1

https://practice.geeksforgeeks.org/problems/stacks-operations/1

https://practice.geeksforgeeks.org/problems/special-stack/1

https://practice.geeksforgeeks.org/problems/sort-a-stack/1

Medium:

https://leetcode.com/problems/decode-string

https://practice.geeksforgeeks.org/problems/stock-span-problem/0

Hard:

https://practice.geeksforgeeks.org/problems/maximum-of-minimum-for-every-window-size/0

Day 2:

Easy:

https://leetcode.com/problems/remove-all-adjacent-duplicates-in-string/

https://practice.geeksforgeeks.org/problems/queue-operations/1

https://leetcode.com/problems/moving-average-from-data-stream

https://leetcode.com/problems/min-stack/

Medium:

https://practice.geeksforgeeks.org/problems/parenthesis-checker/0

https://practice.geeksforgeeks.org/problems/infix-to-postfix/0

(Video source for above)

https://www.youtube.com/watch?v=ysDharaQXkw

Hard:

https://practice.geeksforgeeks.org/problems/the-celebrity-problem/1

Day 3:

Easy:

https://leetcode.com/problems/implement-stack-using-queues

https://leetcode.com/problems/implement-queue-using-stacks

https://leetcode.com/problems/number-of-recent-calls

https://practice.geeksforgeeks.org/problems/implement-stack-using-linked-list/1

Medium:

https://practice.geeksforgeeks.org/problems/maximum-of-all-subarrays-of-size-k/0

https://leetcode.com/problems/design-circular-queue

Hard:

https://www.geeksforgeeks.org/median-of-stream-of-running-integers-using-stl/

Additional problems:

https://practice.geeksforgeeks.org/problems/circular-tour-1587115620/1

https://practice.geeksforgeeks.org/problems/implement-queue-using-linked-list/1

https://practice.geeksforgeeks.org/problems/first-negative-integer-in-every-window-of-size-k/0

https://practice.geeksforgeeks.org/problems/maximum-rectangular-area-in-a-histogram/0

https://practice.geeksforgeeks.org/problems/generate-binary-numbers/0

https://practice.geeksforgeeks.org/problems/count-the-reversals/0

https://practice.geeksforgeeks.org/problems/lru-cache/

You will be using stack and queue in other Data structures (Trees,Graphs).So make sure you understand them thoroughly.

All the best!

QUANTITATIVE APTITUDE:

https://www.indiabix.com/aptitude/problems-on-hcf-and-lcm/

https://www.indiabix.com/aptitude/boats-and-streams/