

## Week 3: Basic Challenge

**Agenda**: Basic Data Structures

**Topics Covered:** Python 3

## **Problem Statement**

Develop a Google Colab notebook with well documented code for the following topics. Each topic must be shown in a separate section using "text" cells in the colab.

- 1. Code Basic Data Structures (from scratch) and show basic operations on them.
  - a. Linked Lists (Insert, Delete, Search)
  - b. Stacks (Push, Pop)
  - c. Queues (Insert, Delete)
  - d. Deques (Insert, Delete from both ends)
  - e. Binary Search Tree (Insert, Delete, Search)
- 2. Develop
  - a. Make a Queue by using Stacks
  - b. Make a Stack using Queues
- 3. Solve 10 Codechef questions from the beginner's section.

Link: https://www.codechef.com/problems/school

NOTE: Just add a text file on github with links to all 10 codechef accepted solutions. No need to perform codechef problems on colab and share the code on github.

## Resource Reference

- 1. Python Programming Tutorials Video Lectures
- 2. <u>Learn Data Structures and Algorithms</u> Contains Links to all the resources you may need to solve above problems.

NOTE: Google search would give you results to all the above problems, reading the theory to learn the concept is good, but copy pasting the code doesn't count towards learning. Try to write the code completely by yourself, if stuck feel free to post queries on the group.