

Data Structure and Algorithms

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Objectives

From this project Data Structures and Algorithms, we will transform from beginners to proficient practitioners in Competitive Programming. This involves developing a deep understanding of essential data structures and implementation capabilities. Through comprehensive study and consistent practice on platforms like Codeforces, leetcode etc along with tailored weekly assignments, we will steadily build expertise. By navigating a structured curriculum, engaging with a variety of challenging CP questions, and participating in regular contests, we will cultivate mastery in CP. The ultimate goal is to achieve continuous self-improvement and equip ourselves with the knowledge and skills.

Plan of Action

Week1: Basics of C++ language

Week2: Start of data structures (Array, Binary Search & Space complexity)

Week3: data structures(All sorting algorithms, STL)

Week4: data structures(String, char array, 2D Array, pointers, basic math for DSA, dynamic memory allocation)

[Mid Term Evaluation](#)

Week5: data structures(recursion)

Week 6&7: data structures(Oops, linked list, stack queue, Binary Tree)

Week 8&9: data structures(BST, heap, hashmap, backtracking, ties)

Week10: data structures(Graph, dp)

[SoS Report Submission](#)

References to be used

- 1) Coding platforms: Leetcode, coding ninja, Gfg and Codeforces(CP)
- 2) [YouTube Tutorial](#)
- 3) [C++ from GfG](#)
- 4) [DSA from GfG](#)
- 5) [Problems Sheet](#)