

Week 1

- **Day-1** : Introduction : Asymptotic Analysis (Finding time and space complexities)
- **Day-2** : Mathematics : GCD, Prime, Factorial, Sieve of Eratosthenes, Computing Power
- **Day-3, 4** : Arrays : Types, Operations on Arrays, Sliding Window Technique and Prefix Sum
- **Day - 5, 6** : Basic Recursion

Week 2:

- **Day-1, 2** : Bit Magic : Bit Operators, Tricks to use bit manipulation.
- **Day-3, 4** : Matrix : Operations on Matrix (Search, Delete, Insert, Rotate, Transpose,)
- **Day-5, 6** : Searching: Linear Search, Binary Search, Two pointer approach..

Week 3:

- **Day-1, 2, 3** : Sorting: Insertion Sort, Merge Sort, Quick Sort, Cycle Sort, Counting Sort, Radix Sort, Bucket Sort, Custom Sort using STL
- **Day-4, 5, 6** : Hashing: Different Types of Hashing Techniques, Collision resolution Techniques, Hashing Questions

Week 4:

- **Day-1, 2, 3**: Strings: Basic Operations, Naive Pattern Search, Other searching algorithms (KMP, Rabin-Karp).
- **Day-4, 5, 6**: Linked Lists: Singly Linked List, Doubly Linked Lists, Circular Linked List, Skip List, Doubly Circular Linked List, Questions

Week 5:

- **Day-1, 2**: Stacks: Stack Operations, Implementation, Questions

- **Day-3, 4:** Queues: Queue Operations, Implementation, Different Questions.
- **Day-5, 6:** Deque Operations, Implementation, Different Questions.

Week 6:

- **Day-1, 2, 3 :** Tree: Binary Tree, Tree Traversals, Different Questions
- **Day-4, 5, 6 :** Binary Search Tree: Search, Insert, Delete and other important questions, AVL (Basic Introduction), Self Balancing Trees and their use in sets and maps STL.

Week 7:

- **Day 1, 2:** Heaps: Binary Heap(Min and Max Heap), Priority Queue, Questions based on heaps.
- **Day-3, 4, 5, 6:** Graphs: Graph Implementation, Traversals, Cycle Detection, Bipartite Graph, Minimum Spanning Tree, Topological Sorting.

Week 8:

- **Day 1, 2 :** Greedy : Fractional Knapsack, Activity Selection, Job Sequencing
- **Day 3, 4, 5, 6 :** Dynamic Programming: Properties (Top Down, Bottom Up, Optimal Substructures, Overlapping Subproblems) and Standard Problems (LIS, LCS, etc)

Week 9:

- Dynamic Programming Problems (Variations of Standard Problems)
- Graph Algorithms
 - Shortest Path Algorithms
 - Connected Components
 - Bridges

Week 10:

- **Day 1, 2:** Tries
- **Day 3, 4:** Segment Tree
- **Day 5, 6:** Disjoint Set Union: Operations(Union, Find), Path Compression