

Topics to cover:

- Arrays and Strings
- Linked Lists (Both Singly and Doubly Linked Lists. Special Mention: XOR Linked List.)
- Queues and Stacks
- Binary Tree
- Binary Search Tree
- Recursion
- Trie
- Hash Tables, Maps and Sets
- Searching Algorithms (Common ones are Linear, Jump and Binary)
- Sorting Algorithms (Insertion, Bubble, Selection, Quick, Merge, Heap, Radix, Bucket)
- Heaps

Concepts for Trees:

Height of a Binary Tree, Lowest Common Ancestor, Distance between two nodes, if required node is present between K units of distance, AVL (Insertion, Deletion, Updation).

Concepts for Graphs:

- BFS,
- DFS,
- Connectivity,
- IN/Out Degrees,
- Dijkstra's,
- Prim's,
- Kruskal's,
- Bellman-Ford,
- Kosaraju.

Concepts for Dynamic Programming

[https://www.youtube.com/playlist?list=PLrmLmBdmllpsHaNTPP\\_jHHDx\\_os9ItYXr](https://www.youtube.com/playlist?list=PLrmLmBdmllpsHaNTPP_jHHDx_os9ItYXr)

[https://www.youtube.com/playlist?list=PL\\_z\\_8CaSLPWekqhdCPmFohncHwz8TY2Go](https://www.youtube.com/playlist?list=PL_z_8CaSLPWekqhdCPmFohncHwz8TY2Go)

Concepts for Stacks:

[https://www.youtube.com/watch?v=P1bAPZg5uaE&list=PL\\_z\\_8CaSLPWdeOezg68SKkeLN4-T\\_iNHd](https://www.youtube.com/watch?v=P1bAPZg5uaE&list=PL_z_8CaSLPWdeOezg68SKkeLN4-T_iNHd)

Concepts for Queues:

- Reverse Queue using another Queue, or Stack.
- Implement Queue using Stack, or vice versa.
- Priority Queue
- Circular Queue
- LRU Cache

Concepts for Recursion:

[https://www.youtube.com/watch?v=kHi1DUhp9kM&list=PL\\_z\\_8CaSLPWeT1ffjilmo0sYTcnLzo-wY](https://www.youtube.com/watch?v=kHi1DUhp9kM&list=PL_z_8CaSLPWeT1ffjilmo0sYTcnLzo-wY)

Concepts for Arrays and String:

Two-sum, Manacher, Subsequences and Substrings, KMP String Matching, Kth max/min element.

Concepts for Heap:

[https://www.youtube.com/watch?v=hW8PrQrvMNC&list=PL\\_z\\_8CaSLPWdtY9W22VjnPxG30CXNZpI9](https://www.youtube.com/watch?v=hW8PrQrvMNC&list=PL_z_8CaSLPWdtY9W22VjnPxG30CXNZpI9)

Some Leetcode Links:

<https://leetcode.com/problems/two-sum/>  
<https://leetcode.com/problems/add-two-numbers/>  
<https://leetcode.com/problems/valid-mountain-array/>  
<https://leetcode.com/problems/prison-cells-after-n-days/>  
<https://leetcode.com/problems/largest-perimeter-triangle/>  
<https://leetcode.com/problems/squares-of-a-sorted-array/>  
<https://leetcode.com/problems/find-common-characters/>  
<https://leetcode.com/problems/robot-bounded-in-circle/>  
<https://leetcode.com/problems/duplicate-zeros/>  
<https://leetcode.com/problems/height-checker/>  
<https://leetcode.com/problems/html-entity-parser/>  
<https://leetcode.com/problems/third-maximum-number/>  
<https://leetcode.com/problems/find-all-numbers-disappeared-in-an-array/>  
<https://leetcode.com/problems/zigzag-conversion/>  
<https://leetcode.com/problems/longest-palindromic-substring/>  
<https://leetcode.com/problems/median-of-two-sorted-arrays/>  
<https://leetcode.com/problems/longest-substring-without-repeating-characters/>  
<https://leetcode.com/problems/design-hashmap/>  
<https://leetcode.com/problems/design-hashset/>  
<https://leetcode.com/problems/walking-robot-simulation/>  
<https://leetcode.com/problems/open-the-lock/>  
<https://leetcode.com/problems/robot-return-to-origin/>  
<https://leetcode.com/problems/minimum-index-sum-of-two-lists/>  
<https://leetcode.com/problems/valid-anagram/>  
<https://leetcode.com/problems/number-of-islands/>  
<https://leetcode.com/problems/unique-paths-ii/>  
<https://leetcode.com/problems/symmetric-tree/>  
<https://leetcode.com/problems/best-time-to-buy-and-sell-stock-ii/>  
<https://leetcode.com/problems/maximum-product-subarray/>