Algorithm and Problem Solving Cheatsheet in C++

Data Structures, Algorithms and Coding Interview Problem Patterns in C++

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MOTIVATION

Motivation

The tech industry hiring standard is based on algorithm and data structure.

There are plenty of free resources available around algorithms and data structures. The purpose of this project is to be a quick guide where you can learn and review learned algorithms and data structures.

Some of the intended **key features:**

- Non-verbose, short-structured, and easy to follow descriptions

- Slide-based, practical for reviewing

- Free and open-source

⭐ **If you like, please add a star at *github.com/rfdavid/cpp-algo-cheatsheet***

Useful links

Tech Interview Handbook
https://www.techinterviewhandbook.org
A very well-structured resource for interview preparation

TUF
https://takeuforward.org/interviews/blind-75-leetcode-problems-detailed-video-solutions
Contains explanation and some videos for the problems from blind 75 list

Blind 75 Leetcode Questions
https://leetcode.com/discuss/general-discussion/460599/blind-75-leetcode-questions

Blind 75

- Blind 75 is a popular list of algorithm problems that intends to cover the main data structures and patterns.

- It is a curated list of 75 popular coding questions created by an ex-Meta Staff Engineer

Array

✓ Two Sum

✓ Best Time to Buy and Sell Stock

Contains Duplicate

Product of Array Except Self

Maximum Subarray

Maximum Product Subarray

Find Minimum in Rotated Sorted Array

Search in Rotated Sorted Array

3 Sum

Container With Most Water

Binary

Sum of Two Integers

Number of 1 Bits

Counting Bits

Missing Number

Reverse Bits

Dynamic Programming

✓ Climbing Stairs

Coin Change

Longest Increasing Subsequence

Longest Common Subsequence

Word Break Problem

Combination Sum

House Robber

House Robber II

Decode Ways

Unique Paths

Jump Game

Matrix

Set Matrix Zeroes

Spiral Matrix

Rotate Image

Word Search

Blind 75

Tree

✓ Maximum Depth of Binary Tree

Same Tree

Invert/Flip Binary Tree

Binary Tree Maximum Path Sum

Binary Tree Level Order Traversal

Serialize and Deserialize Binary Tree

Subtree of Another Tree

Construct Binary Tree from Preorder and Inorder Traversal

Validate Binary Search Tree

Kth Smallest Element in a BST

Lowest Common Ancestor of BST

Implement Trie (Prefix Tree)

Add and Search Word

Word Search II

Heap

Merge K Sorted Lists

Top K Frequent Elements

Find Median from Data Stream

String

✓ Longest Substring Without Repeating Characters

Longest Repeating Character Replacement

Minimum Window Substring

Valid Anagram

Group Anagrams

✓ Valid Parentheses

Valid Palindrome

Longest Palindromic Substring

Palindromic Substrings

Encode and Decode Strings ⭐

Linked List

Reverse a Linked List

Detect Cycle in a Linked List

Merge Two Sorted Lists

Merge K Sorted Lists

Remove Nth Node From End Of List

Reorder List

Graph

✓ Clone Graph

Course Schedule

Pacific Atlantic Water Flow

Number of Islands

Longest Consecutive Sequence

Alien Dictionary ⭐

Graph Valid Tree ⭐

Number of Connected Components in an Undirected Graph ⭐

Interval

Insert Interval

Merge Intervals

Non-overlapping Intervals

Meeting Rooms ⭐

Meeting Rooms II ⭐

⭐ = leetcode premium

Other problems

Tree

✓ Maximum Level Sum of a Binary Tree

✓ Minimum Number of Increments on Subarrays to Form a Target Array