Cheat CODE

A Workbook to Get You Started with DSA

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The Dilemma}

Which Programming Language
Should I Choose?

Beginner Problems

Which Programming Language
Should I Start With?

Read More

Top 10

Read More

C++, JAVA or Python

Read More

{Pick your language}

Learn More

Learn More
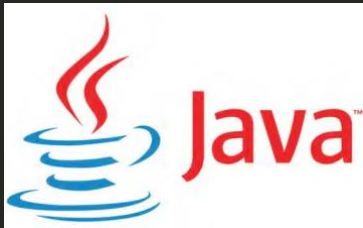
Learn More

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Learn More

Learn More

Learn More

The Frenemy}

Time Complexity »	Space Complexity »	Arrays »
Searching »	Sorting »	String »
Hashing »	Bitwise Algorithms »	Linked List »
Stacks »	Queues »	Heaps »
Trees »	Graphs »	Greedy »
Dynamic Programming »	Algorithms »	Design Patterns »

{Build your knowledge}

Easy Problems

Use checkboxes to track your progress.
Keep practicing, Geek.

Math

☐ **Missing Number in Array** »

☐ **Minimum steps to make product equal to one** »

☐ **Trailing Zeros in Factorial** »

Array

{

- [ ] Rotate Array »
- [ ] Majority Element »
- [ ] Plus one »
- [ ] Array of alternative +ve and -ve nos. »
- [ ] Product Array puzzle »
- [ ] Large Factorial

Searching

- [ ] Left most and right most index
- [ ] Bitonic Point
- [ ] Collecting Wood

Sorting

- [ ] Wave Array
- [ ] Sort an array of 0's,1's and 2's
- [ ] Chocolate Distribution Problem

Matrix

- [ ] Sort a 2D vector diagonally
- [ ] Search in Sorted 2D and not 2d matrix
- [ ] Boundary traversal of matrix

String

- [ ] Reverse words in a given string
- [ ] Longest Common Prefix
- [ ] Roman Number to Integer

Hashing

- [ ] Key Pair
- [ ] Top K Frequent Elements in Array
- [ ] Intersection of two arrays

Bit Masking

- [ ] Reverse bits
- [ ] Number of set bits
- [ ] Sum of two integers
- [ ] Check whether K-th bit is set or not
- [ ] Longest Consecutive 1's
- [ ] Non repeating numbers

Linked List

- [ ] Merge Two Sorted Linked Lists
- [ ] Reverse a Linked List
- [ ] Delete a Node without Head Pointer
- [ ] Add two Numbers represented by linked lists
- [ ] Finding middle element in a linked list
- [ ] Check if linked list is palindrome

Parenthesis Checker

Infix to Postfix

Restrictive Candy Crush

Queue

First negative integer in every window of size k

Valid Substring

Maximum Diamonds

Heap

Adding Array Elements

Minimum Cost of ropes

Binary Heap Operations

Binary Tree

- [ ] Symmetric Tree »
- [ ] Zigzag Tree Traversal »
- [ ] Checked for Balanced tree »
- [ ] Height of Binary Tree »
- [ ] Diameter of Binary tree »
- [ ] Minimum depth of binary tree »

Binary Search Tree

- [ ] Check for BST »
- [ ] Array to BST »
- [ ] Inorder Successor in BST

Graph

- [ ] Print Adjacency List
- [ ] BFS of Graph
- [ ] DFS of Graph
- [ ] Mother Vertex
- [ ] Count the Paths
- [ ] Eulerian Path in an Undirected Graph

Greedy

- [ ] Largest number with given Sum
- [ ] Maximum Sum without Adjacents
- [ ] Maximize Toys

Dynamic Programming

Count ways to reach the n'th stair

Nth Fibonacci Number

Gold Mine Problem

Recursion

☐ Number of Paths »	☐ Juggler Sequence »	☐ Tower of Hanoi »
☐ Permutations »	☐ Permutation with Spaces »	☐ Pascals Triangle »

Algorithms

☐ Bubble Sort »	☐ Insertion Sort »	☐ Selection Sort »

» »

Design Patterns

- [ ] **Stack using two queues**
- [ ] **Queue using stack**
- [ ] **Queue Operations**

{Let's Step Up a Bit}

Medium Level Problems

Use checkboxes to track your progress.
Keep practicing, Geek.

Math

- [ ] **A Simple Fraction**
- [ ] **Count of sum of consecutives**
- [ ] **nCr( )**

Array

Jump Game

Maximum number of 1's

Stock Buy and Sell

Maximum index

Trapping Rain Water

3 sum closest

Searching

Search an element in sorted and rotated array

Square root of a number

Find missing in second array

Sorting

- [ ] Count the number of possible triangles »
- [ ] Triplets with sum with given range »
- [ ] Count Inversions »
- [ ] Relative Sorting »
- [ ] Minimum Platforms »
- [ ] Maximum Index »

Matrix

- [ ] Spiral Matrix
- [ ] Boolean matrix
- [ ] Rotate matrix by 90 degrees

Search in a row-column sorted Matrix

Find nth element of spiral matrix

Row with maximum 1s

String

Length of longest prefix suffix

Validate an IP address

Implement Atoi

Look and say Pattern

Longest substring without repeating characters

Longest K unique characters substring

Hashing

Triplet Sum in Array
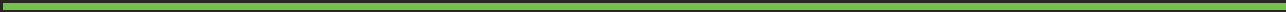
Length of the longest substring

Is Sudoku Valid

Print Anagrams Tog ther

Subarrays with sum K

Longest subarray with sum divisible by K

Queue

- Maximum of all subarrays of size K
- Circular tour (Sliding Window)
- First non repeating character in a stream

Heap

- Kth largest element of stream
- Merge k sorted arrays
- Nearly Sorted

Binary Tree

- [ ] **Inorder Traversal (iterative)**
- [ ] **Preorder Traversal (iterative)**
- [ ] **Postorder Traversal (iterative)**
- [ ] **Connect nodes at sam level**
- [ ] **Boundary Traversal**
- [ ] **Sum tree**

Binary Search Tree

- [ ] **Pair with given target in BST**
- [ ] **Unique BSTs**
- [ ] **Preorder Traversal and BST**

Graph

- [ ] Number of Islands
- [ ] COVID Spread
- [ ] Prerequisite tasks
- [ ] Minimum swaps to sort
- [ ] Snake and Ladder Problem
- [ ] Unit Area of Largest region of 1s

Greedy

- [ ] N meetings in on room
- [ ] Coin Piles
- [ ] Maximize Toys

Job Sequencing

Police and Thieves

Water the Plants

Dynamic Programming

Number of Coins

Box Stacking

Longest Palindromic Substring

Wildcard Pattern Matching

Minimum number of jumps

Player with max score

Recursion

- [ ] Special Keyboard
- [ ] Flood Fill Algorithm
- [ ] Word Boggle – 1
- [ ] Rat in a Maze Problem
- [ ] Letter Combinations of a Phone Number
- [ ] Generate Parentheses

Algorithms

- [ ] Merge Sort
- [ ] Quick Sort
- [ ] Heap Sort
- [ ] Kadane Algorithm
- [ ] Minimum Spanning Tree
- [ ] Huffman Encoding

Design

- [ ] Ternary Search
- [ ] Binary Heap Operations
- [ ] LRU cache

{When the Going Gets Tough}

Hard Level Problems

Use checkboxes to track your progress.
Keep practicing, Geek.

Math

- ☐ Nth Natural Number »
- ☐ Smallest Positive Integer that can not be represented as Sum »
- ☐ Generalised Fibonacci Number »

Arrays

- ☐ Maximum circular Subarray Sum »
- ☐ Merge without Extra Space »
- ☐ Number of subsets with product less than K »

Searching

- [ ] Painter's Partition Problem »
- [ ] Median of 2 sorted arrays of Different sizes »
- [ ] Allocate minimum number of pages »

String

- [ ] Numbers with one absolute difference »
- [ ] Longest Palindromic Substring »
- [ ] Distinct Palindromic substrings »

Bit Hacking

- [ ] Maximum subset XOR
- [ ] Minimum X (xor) A
- [ ] Bit Difference

Linked List

- [ ] Clone a linked list with next and random pointers
- [ ] Reorder List
- [ ] QuickSort on Doubly Linked List

Stack

- [ ] Longest Valid Parentheses
- [ ] Remove K digits
- [ ] 132 Geeky Buildings

Heap

- [ ] Median of stream
- [ ] Smallest range in K lists
- [ ] Rearrange characters »

Binary Tree

- [ ] Binary Tree to Doubly Linked List »
- [ ] Maximum sum path between two leaf nodes »
- [ ] Burning Tree »

Binary Search Tree

- [ ] Merge two BST's »
- [ ] Fixing two nodes of a BST »
- [ ] Sorted Linked List to BST »

Graph

- [ ] **Number of Provinces**
- [ ] **Alien Dictionary**
- [ ] **Word Ladder**
- [ ] **Word Ladder II**
- [ ] **Minimum Cost Path**
- [ ] **Strongly Connected Components (Tarjan's Algo)**

Dynamic Programming

- [ ] **Matrix Chain**
- [ ] **Partition Equal Subset Sum**
- [ ] **Palindromic Partitioning**

Recursion

- [ ] **Palindrome Partitioning**
- [ ] **N-Queen Problem**
- [ ] **Solve the Sudoku**

Algorithms

☐ Bellman Ford Algorithm »	☐ Dijkstra Algorithm »	☐ Floyd Warshall »
☐ Rabin-Karp Algorithm	☐ KMP algorithm	☐ Z Algorithm »

{The Endgame}

Building Soft Skills

Resume Building Resources and Tips

Read More

7 Ways to Add
Value to Your
Resume

Read More

17 Best Resume
Do's & Don'ts

Read More

{Bonus}

How to Prepare for
Interview

Tell me
about yourself!

Read Answer

What are your
strengths &
weaknesses?

Read Answer

Why should you
be hired?

Read Answer

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