

Cheat CODE

A Workbook to Get You Started with DSA

Made with  at [GeeksforGeeks](https://www.geeksforgeeks.org/)

{Index}

- 1 Which Programming Language Should I Choose?
- 2 Data Structures & Algorithms
- 3 Easy Level Problems
- 4 Medium Level Problems
- 5 Hard Level Problems
- 6 Building Soft Skills
- 7 Bonus: How to Prepare for Interviews

{The Dilemma}

Which Programming Language Should I Choose?



Beginner Problems

Which Programming Language Should I Start With?

[Read More](#)



Top 10

Top 10 Programming Languages to Learn

[Read More](#)



C++, JAVA or Python

Which one's the Best?

[Read More](#)



{Pick your language}



[Learn More](#)



[Learn More](#)



[Learn More](#)



[Learn More](#)



[Learn More](#)



Golang

[Learn More](#)



{The Frenemy}

Data Structures & Algorithms

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



Stack

☐ 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
Together



Subarrays with
sum K



Longest subarray
with sum divisible
by K



Bit Masking



Find the element that appears once



Gray code



Maximum AND



Linked List



Rearrange a linked list



Detect and Remove a loop In Linked List



Merge Sort for Linked List



Intersection of Linked List



Rotate Linked List by K places



Flattening a Linked List



Stack



Next Larger Element



Stock span problem



The Celebrity Problem



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 same 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 one 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



Array

☐ 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 Masking

☐ 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](#)



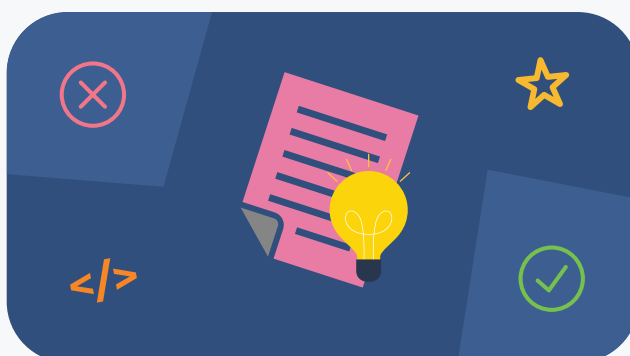
7 Ways to Highlight
Achievements in
Your Resume

[Read More](#)



12 Best Resume
Do's & Don'ts

[Read More](#)



{Bonus}

How to Prepare for Interviews

Tell me
about yourself!

[Read Answer](#)

What are your
strengths &
weaknesses?

[Read Answer](#)

Why should you
be hired?

[Read Answer](#)





{Liked the workbook?}
Tell us about it!



Share your progress