Top 75 Most Important DSA Problems for FAANG & Top Tech Companies

This curated list contains the 75 most essential Data Structures & Algorithms problems that frequently appear in technical interviews at FAANG (Facebook/Meta, Amazon, Apple, Netflix, Google) and other top tech companies. The selection is based on extensive research of industry-standard lists including Blind 75, LeetCode Top Interview 150, NeetCode 150, and Grokking Coding Interview Patterns.

Selection Criteria:
- High frequency in actual FAANG interviews
- Coverage of essential algorithmic patterns
- Proven track record from successful candidates
- Balanced difficulty distribution
- Comprehensive pattern coverage

Problems Organized by Patterns

1. Array & Hashing (10 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Two Sum	1	Easy	Hash Map
Contains Duplicate	217	Easy	Hash Set
Valid Anagram	242	Easy	Frequency Counter
Group Anagrams	49	Medium	Hash Map Grouping
Top K Frequent Elements	347	Medium	Hash Map + Heap
Product of Array Except Self	238	Medium	Prefix/Suffix Arrays
Valid Sudoku	36	Medium	Hash Set Validation
Longest Consecutive Sequence	128	Medium	Hash Set
3Sum	15	Medium	Two Pointers + Hash
4Sum	18	Medium	Two Pointers Extension

2. Two Pointers (6 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Valid Palindrome	125	Easy	Opposite Direction
Two Sum II - Input Array Is Sorted	167	Easy	Opposite Direction
3Sum	15	Medium	Three Pointers
Container With Most Water	11	Medium	Optimal Solution
Trapping Rain Water	42	Hard	Complex Logic
Remove Duplicates from Sorted Array	26	Easy	Same Direction

3. Sliding Window (5 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Best Time to Buy and Sell Stock	121	Easy	Simple Window
Longest Substring Without Repeating Characters	3	Medium	Variable Window
Longest Repeating Character Replacement	424	Medium	Variable Window
Permutation in String	567	Medium	Fixed Window
Minimum Window Substring	76	Hard	Complex Window

4. Stack (4 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Valid Parentheses	20	Easy	Basic Stack
Min Stack	155	Medium	Stack Design
Evaluate Reverse Polish Notation	150	Medium	Stack Calculation
Daily Temperatures	739	Medium	Monotonic Stack

5. Binary Search (4 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Binary Search	704	Easy	Classic Implementation
Search in Rotated Sorted Array	33	Medium	Modified Binary Search
Find Minimum in Rotated Sorted Array	153	Medium	Finding Pivot
Search a 2D Matrix	74	Medium	2D Binary Search

6. Linked List (6 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Reverse Linked List	206	Easy	Basic Manipulation
Merge Two Sorted Lists	21	Easy	Merging
Reorder List	143	Medium	Complex Manipulation
Remove Nth Node From End of List	19	Medium	Two Pointers
Linked List Cycle	141	Easy	Fast & Slow Pointers
Merge k Sorted Lists	23	Hard	Divide & Conquer

7. Trees (12 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Invert Binary Tree	226	Easy	Tree Traversal
Maximum Depth of Binary Tree	104	Easy	DFS/BFS
Diameter of Binary Tree	543	Easy	Tree Properties
Balanced Binary Tree	110	Easy	Tree Validation
Same Tree	100	Easy	Tree Comparison
Subtree of Another Tree	572	Easy	Tree Matching
Lowest Common Ancestor of a BST	235	Medium	BST Properties
Binary Tree Level Order Traversal	102	Medium	BFS
Binary Tree Right Side View	199	Medium	BFS/DFS
Count Good Nodes in Binary Tree	1448	Medium	DFS with State
Validate Binary Search Tree	98	Medium	BST Validation
Kth Smallest Element in a BST	230	Medium	In-order Traversal

8. Tries (2 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Implement Trie (Prefix Tree)	208	Medium	Trie Construction
Design Add and Search Words Data Structure	211	Medium	Trie with Wildcards

9. Heap / Priority Queue (3 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Kth Largest Element in an Array	215	Medium	Quick Select/Heap
Task Scheduler	621	Medium	Greedy + Heap
Find Median from Data Stream	295	Hard	Two Heaps

10. Backtracking (4 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Subsets	78	Medium	Generate All Subsets
Combination Sum	39	Medium	Combination Generation
Permutations	46	Medium	Permutation Generation
Word Search	79	Medium	2D Backtracking

11. Graphs (5 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Number of Islands	200	Medium	DFS/BFS on Grid
Clone Graph	133	Medium	Graph Traversal
Max Area of Island	695	Medium	DFS with Counting
Pacific Atlantic Water Flow	417	Medium	Multi-source BFS/DFS
Course Schedule	207	Medium	Topological Sort

12. Dynamic Programming (8 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Climbing Stairs	70	Easy	1D DP
House Robber	198	Medium	1D DP
House Robber II	213	Medium	Circular DP
Longest Palindromic Substring	5	Medium	2D DP
Palindromic Substrings	647	Medium	2D DP
Decode Ways	91	Medium	1D DP
Coin Change	322	Medium	Unbounded Knapsack
Maximum Product Subarray	152	Medium	Modified Kadane’s

13. Greedy (2 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Maximum Subarray	53	Easy	Kadane’s Algorithm
Jump Game	55	Medium	Greedy Choice

14. Intervals (2 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Merge Intervals	56	Medium	Interval Merging
Non-overlapping Intervals	435	Medium	Interval Scheduling

15. Math & Bit Manipulation (2 problems)

Problem	LeetCode #	Difficulty	Pattern Focus
Reverse Integer	7	Medium	Integer Manipulation
Number of 1 Bits	191	Easy	Bit Counting

Difficulty Distribution

- **Easy**: 15 problems (20%)
- **Medium**: 52 problems (69%)
- **Hard**: 8 problems (11%)

This distribution reflects the typical interview difficulty balance, with emphasis on medium-level problems that test both algorithmic thinking and implementation skills.

Study Strategy

1. **Foundation (Weeks 1-2)**: Start with Easy problems to build confidence
2. **Core Patterns (Weeks 3-6)**: Focus on Array, Two Pointers, Sliding Window, and Tree problems
3. **Advanced Topics (Weeks 7-8)**: Tackle Dynamic Programming, Graphs, and Hard problems
4. **Mock Practice (Week 9)**: Simulate interview conditions with timed practice

Pattern Priorities for FAANG

Must Master (High Frequency):
- Array & Hashing
- Two Pointers
- Trees (DFS/BFS)
- Dynamic Programming (1D)

Important (Medium Frequency):
- Sliding Window
- Linked Lists
- Graphs
- Backtracking

Good to Know (Lower Frequency):
- Tries
- Advanced DP (2D)
- Heap/Priority Queue
- Bit Manipulation

This list is compiled from industry-proven sources including Blind 75, LeetCode Top Interview 150, NeetCode 150, and feedback from successful FAANG candidates. Regular practice of these problems, understanding their underlying patterns, and ability to code them efficiently will significantly improve your chances of success in technical interviews.